

Bulbs & Bulblets

Official Croft Lily Growers News Items

McWHORTER CLASSIFIES LILY DISEASES

The following is an article written by Frank P. McWhorter, plant pathologist, of Oregon experimental station, in discussing the various diseases affecting the Croft and other lilies of this area:

Since I am directly responsible for the creation in the national mind of the concept that the Croft lily is free from the serious virus diseases mosaic and fleck, I wish to outline the Croft lily disease problems as they now appear both from local and national viewpoint. The successful growers will be those who visualize the problem in entirety and realize that the true value of bulb crop depends on the opinion held by the ultimate user. The ultimate users of the Croft lily will be florists. The grower is concerned not only with the diseases that affect production but also those that affect forcing.

Plant diseases are grouped according to their causes: Fungus diseases, bacterial diseases, virus diseases and physiological diseases.

Lily diseases include all these groups. The climate of the Oregon coast is favorable to Botrytis. This fungus produces the disease officially known as Botrytis blight on our lilies and is responsible for our having to spray the foliage to protect them against the germ. This disease is usually of no consequence in greenhouse plantings but it can be bulb-borne. In fact, two years ago a planting of our Croft lilies made in the old Creole country introduced the Botrytis disease, there in 1942. It spread to Creoles and did a lot of damage. The Louisiana growers had never seen Botrytis blight before.

Bacterial diseases of lily have been identified only in Japan.

Virus diseases of lily are very numerous and very difficult to diagnose and understand. They often resemble physiological troubles which are diseases caused by unfavorable conditions during growth and not by some specific germ. For example, the cracking of celery and the cankering of beets are due to lack of the element Boron. The yellowing of tomatoes may be due to a virus or to unbalanced fertilization. If the cause is unbalanced plant

foods, the disease is called a physiological disease." This past summer we investigated a serious disease of garden beets around Portland which was apparently due to bacteria. The final analysis proved that the cause was not germ by sunlight reflected from baked soil.

Diagnosis of viruses are further complicated by genetic accidents. For example, a certain percentage of seedlings of many plants, including lilies and camellias, bear leaves that are all white or partly white. The initial cause is a "lethal gene" that went haywire among the chromosomes and failed to carry over a factor producing green pigment in the seedling. The all-white ones die. The partly-white ones may survive and become variegated varieties. An Englishman, Mr. Moore, saved an Easter lily seedling back in 1870 and it became the L. Longiflorum var. Albo-Margnatum which is still in commercial production today. Likewise camellias—some of the white-spotted foliage relates to seedling history but as has been shown recently in this laboratory, most camellia leaf variegation is a virus disease. Growers were unwittingly transmitting the disease by grafting. The lilies which show traces of variegation simulate virus diseases and complicate our problem. Unfortunately, the genetic variegation in lilies will vary from year to year in the same plant. This is especially true of Madonna lilies. Diagnosis of lily diseases is a complicated problem.

Dr. Brierley and I have separated about ten viruses from the Oriental and American Easter lilies. Certain combinations of these produce serious diseases; others minor diseases; some no disease. The serious diseases of Easter lily, listed by placing of occurrence and the order in which they have been identified, are:

Yellow Flat, Mosaic, Cucumber mosaic, Fleck, Yellow Top, Bermuda, Japan, Florida, South-

ern United States, Louisiana and probably Alabama.

The yellow flat disease killed the Bermuda lily industry in Bermuda. Now, in order to orient you in reference to the bunched top situation in Croft lilies, let me state these facts:

1. Bunched Top disease resembles Yellow Flat more than it does any other lily disease or condition which has been described.

2. I investigated this condition in Bandon stocks back in 1930, 1931, and 1932 and was convinced that it was not yellow flat.

3. The cause was not ascertained but I advised the growers to rogue it out since the condition produced unfavorable field growth, although we could uniformly reproduce the stunted growth under greenhouse conditions. At that time the stocks were not pure-lined and the basic ground work on lily viruses and the genetics of lily reproduction had not been worked out.

For many years of observations and studies on other lilies (the Easter lily investigators are centered at Beltsville, Md.). I have become convinced that several factors are concerned and the true explanation of our stunt

trouble has several causes: that different conditions are causing growth appearances that resemble each other. That part of these stunted plants represent a physiological disease (perhaps a fertilizer problem) and part a virus disease or a genetic problem. Hence I have quit advertising general roguing until we could separate the stunted plants into casual types and rogue intelligently. This brings us to 1943. That is when I had to go to bat for you fellows who grow the bulbs.

The large population of Oregon-grown lilies in the Portland vicinity is regularly inspected by the United States Department of Agriculture inspectors. That is the law. These fellows who try to protect the greenhouse men who are not specialists. The result was that the inspectors began mistaking these bad plants for mosaic and telling the greenhouse growers that they had bought mosaic plants from Oregon sources and writing that into the official record. The first I knew about it was at a nurserymen's meeting. Then one of the leading Portland florists cornered me and told me that the inspectors

said he had mosaic in his Croft lilies. For this reason, I arranged for a complete survey of all the greenhouses. I made thorough surveys and examined 19,500 Croft lilies and 2,000 other lilies from Oregon plantings. I found no mosaic and no fleck.

A very few plants in the Croft variety, and a large number of the Coos, did have something very wrong. Remember that the greenhouse men have the lily say—they called it a disease. No since the inspectors had called it the wrong thing, this forced the issue and it had to be named to avoid confusion. I immediately took official action through the chief's office at Salem and had all the inspectors warned to cease calling this Croft trouble mosaic. The response on the part of the inspectors was fine and no further slips of that type were made. Fortunately, your kind friend Charles Cole, had heard one of the Portland inspectors calling the disease mosaic. He realized the seriousness of the error and gave a big help in getting the matter smoothed out. The official name of the greenhouse disease will be bunched top. However, I never

Concluded on next page

In the Next 12 Months

JUNE 1946

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
8	10	11	12	13	14	15
16	17	18	16	20	21	22
23	24	25	26	27	28	29
30						

MAY 1946

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

JULY 1946

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

AUGUST 1946

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

SEPTEMBER 1946

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

OCTOBER 1946

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

NOVEMBER 1946

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

DECEMBER 1946

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

JANUARY 1947

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

FEBRUARY 1947

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
8	10	11	12	13	14	15
16	17	18	16	20	21	22
23	24	25	25	27	28	

MARCH 1947

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

APRIL 1947

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

Follow the PROGRESS of the famed Brookings-Harbor Community By a Subscription Placed Today!

TELL Your Friends Story Weekly in the Same Manner. \$2.50 a year In Curry County

There's None Better In Curry County, Oregon as a medium to buy, sell or trade trade—see the Classified Advertising section of

The Pilot

Leading Curry Co. Newspaper

They Have Answered Last "Taps"

Today is Memorial Day, set aside in honor of the soldier dead—those boys, full of life, love and hope—who have answered their last "taps" in wars which this nation has been forced to wage in the past.

Down the street, in that little brown house, where once rang laughter from dozens of throats when Bill had his "gang" in for play, today lingers a memory—a gray-haired mother and a dad, stooped from toil, sit alone today—nay, they are back a few years when the "gang" made that home the headquarters.

They could not go to the last resting place—to the spot where they Bill now rests—you see that was across the sea, on some island, altogether too far—and they'd have difficulty getting there, at their age.

However, this morning, they went to the cemetery—out where a pal lies, there to decorate a grave as Bill would have wanted them to do. Now they are home, looking over the old school annuals, the scrapbook that these boys—yes, and there had been girls in the gang—had pasted in some years ago.

Across town, in a house painted gray, sits alone a widowed mother. Her son, a pal of Bill, also lost his life just three days ahead of Bill. Bill wrote her a long letter, as much as the censor would permit him—telling her about how her son had been laid to rest, and that he had been there. Today, she lives in memory. Today is Memorial Day.