

GROWING CHESTNUTS IN THE NORTH-EAST

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Timber Trees and Orchard Trees



- ❖ **Timber trees put all their energy into growing tall, and usually delay nut production and then produce small nuts**
- ❖ **Orchard trees stay short and spreading and put their energy into producing large nuts, usually sooner than timber trees**



FIRST

Why are you planting these trees?

Food source?

Hobby?

Income?

Legacy?



Plan the size of your orchard





Joe Cavaliere
½ acre with 5 trees

**Luginbuhl chestnut orchard
Ellington, CT
Produced 400 pounds of nuts in 2011**



07.03.2008



Owl Creek Ranch, California

84 acres with 9000 hybrid chestnuts



Orchard Trees Need:

- **Sunlight: to the full canopy**
- **Water: at least one inch per week throughout the summer**
- **Weed control around the trunk: 3 or 4 feet out from the trunk in a circle**
- **Protection from deer and bear**



Definitions

Seedling grown from seed, pedigree unknown

Variety timber or orchard, large nuts or small nuts, early bearing or late bearing

Cultivar graft of a scion (twig) from a tree with known pedigree and characteristics onto a suitable rootstock tree, given a registered name



Cultivars or Seedlings?

Grafted trees, known pedigree

Unknown parents

Predictable quality

Unpredictable quality

Early flowering, production

Late flowering, production

Expensive

Much cheaper

Quality pays for itself in the long run.

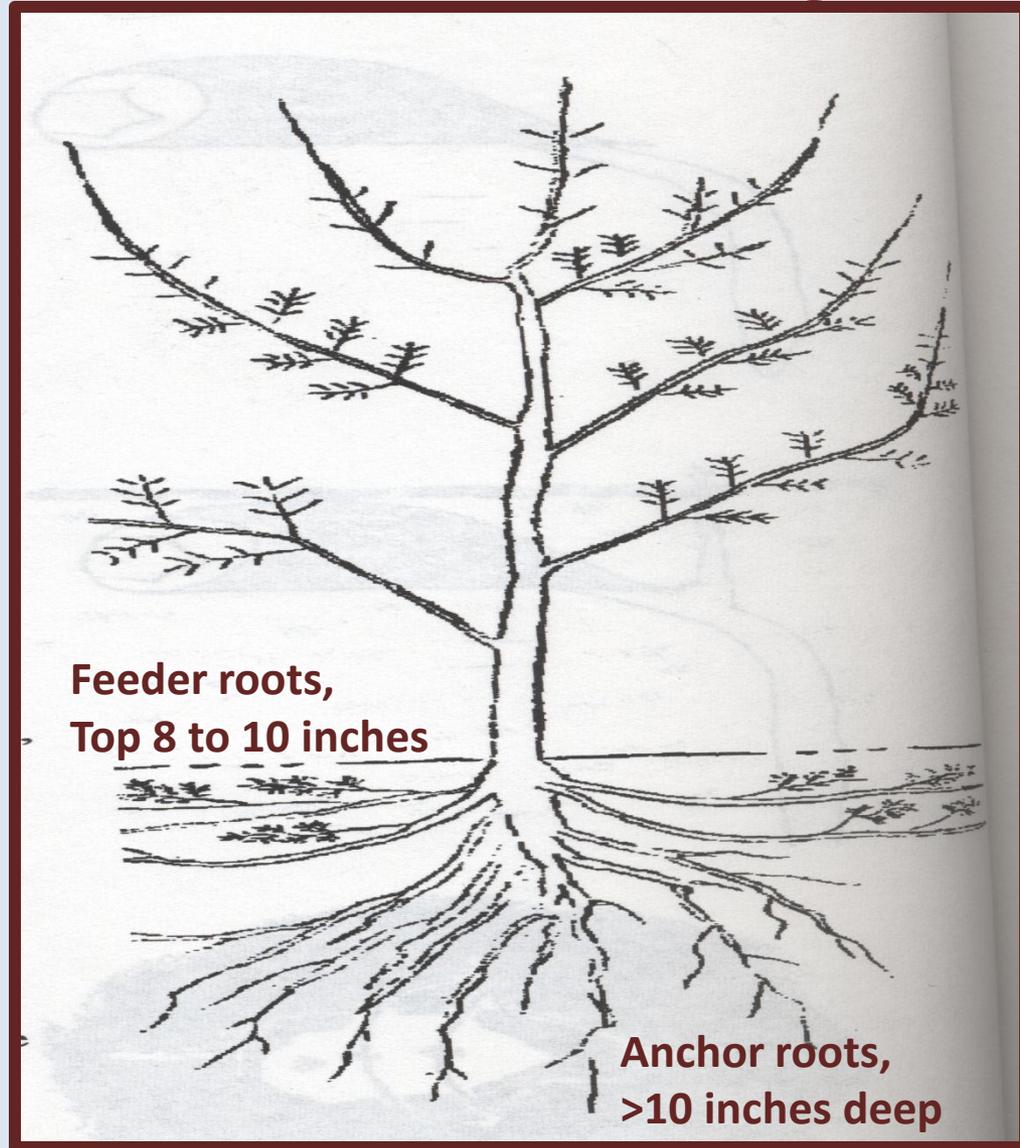


Choose The Cultivars

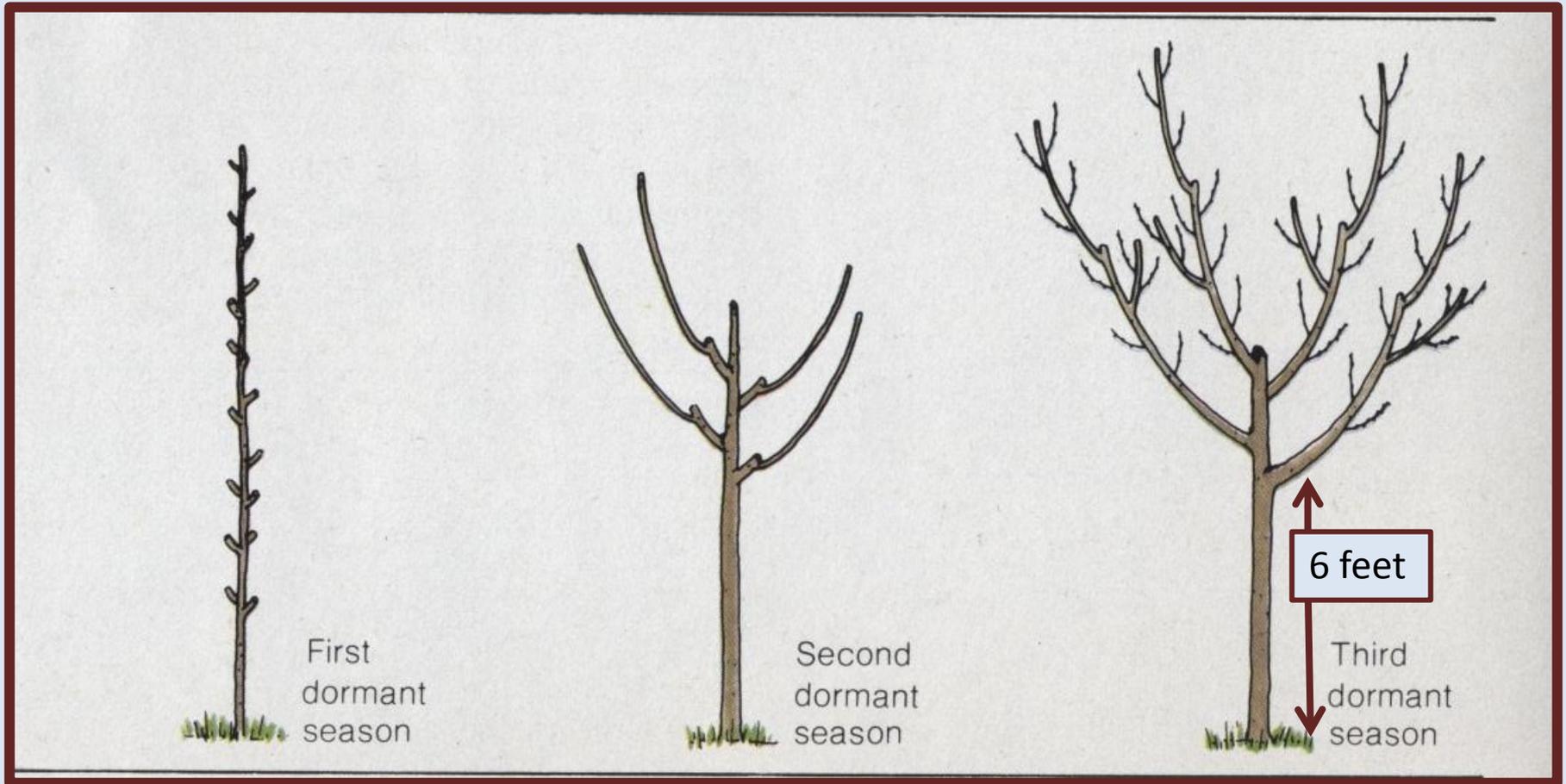
- **Will they flower at the same time?**
- **Will the trees pollinize each other?**



Know How They Grow



PRUNE THEM YOUNG



Remember that you will have to work UNDER the branches

SPECIES OF CHESTNUTS





Chestnuts

genus *Castanea*



❖ **American chestnuts and chinquapins
(three or one nut per bur)**

**Very small nuts, sweet flavor,
susceptible to several diseases**



American chestnut



Ozark chinquapin



One nut per bur

Allegheny chinquapin



❖ **European chestnuts and
“marrons”**

**Medium to large nuts, mild flavor,
susceptible to several diseases**





European chestnut

❖ Chinese chestnuts

**Medium sized nuts, mild flavor,
resistant to many diseases**





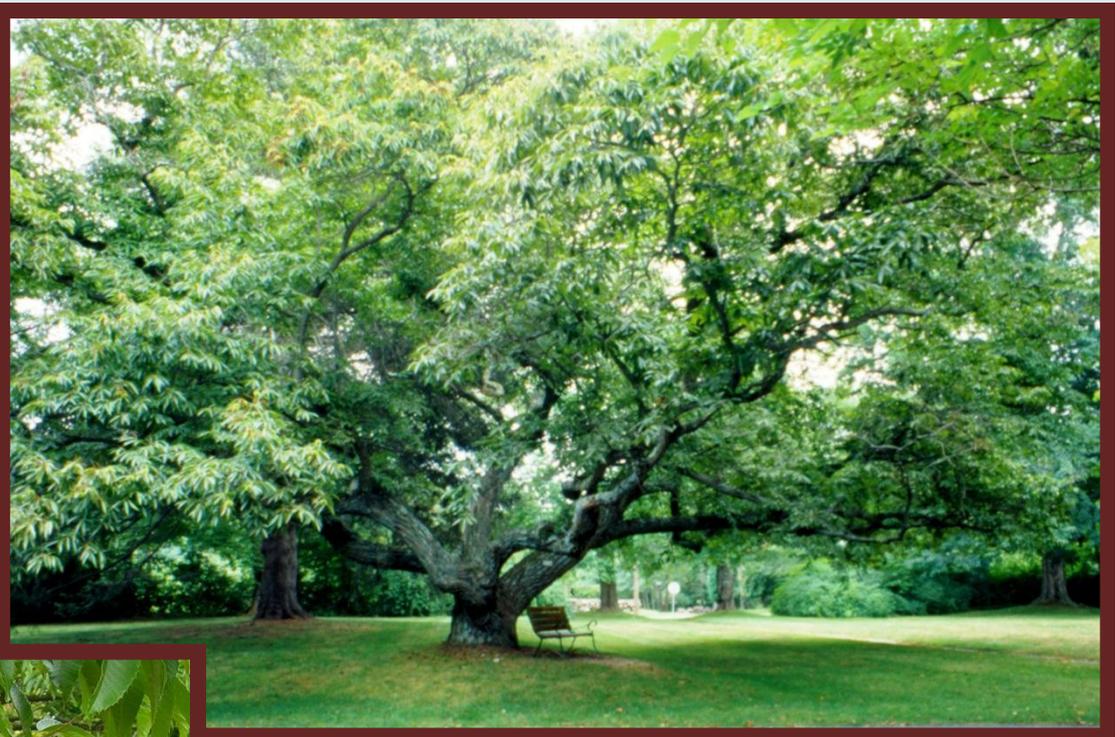
Chinese chestnut



❖ Japanese chestnuts

Very large nuts, pell (thick fibrous layer under the shell) hard to remove and bitter, resistant to most diseases





Japanese chestnut



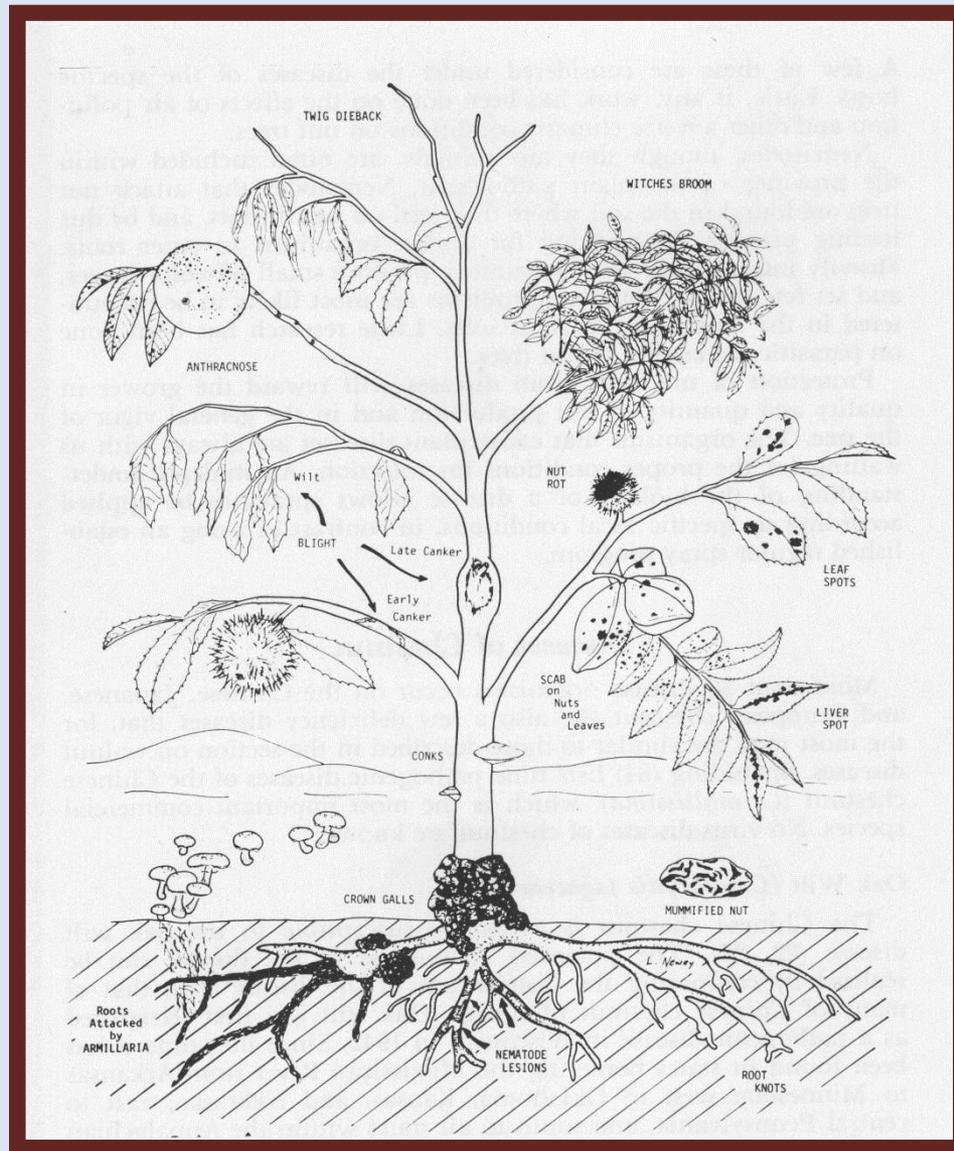
- **Many excellent hybrids available**
- **Best grown as grafted cultivars of know quality**
- **Inter-cropping is possible**



Growing plants is never

EASY





diseases

Chestnut Diseases

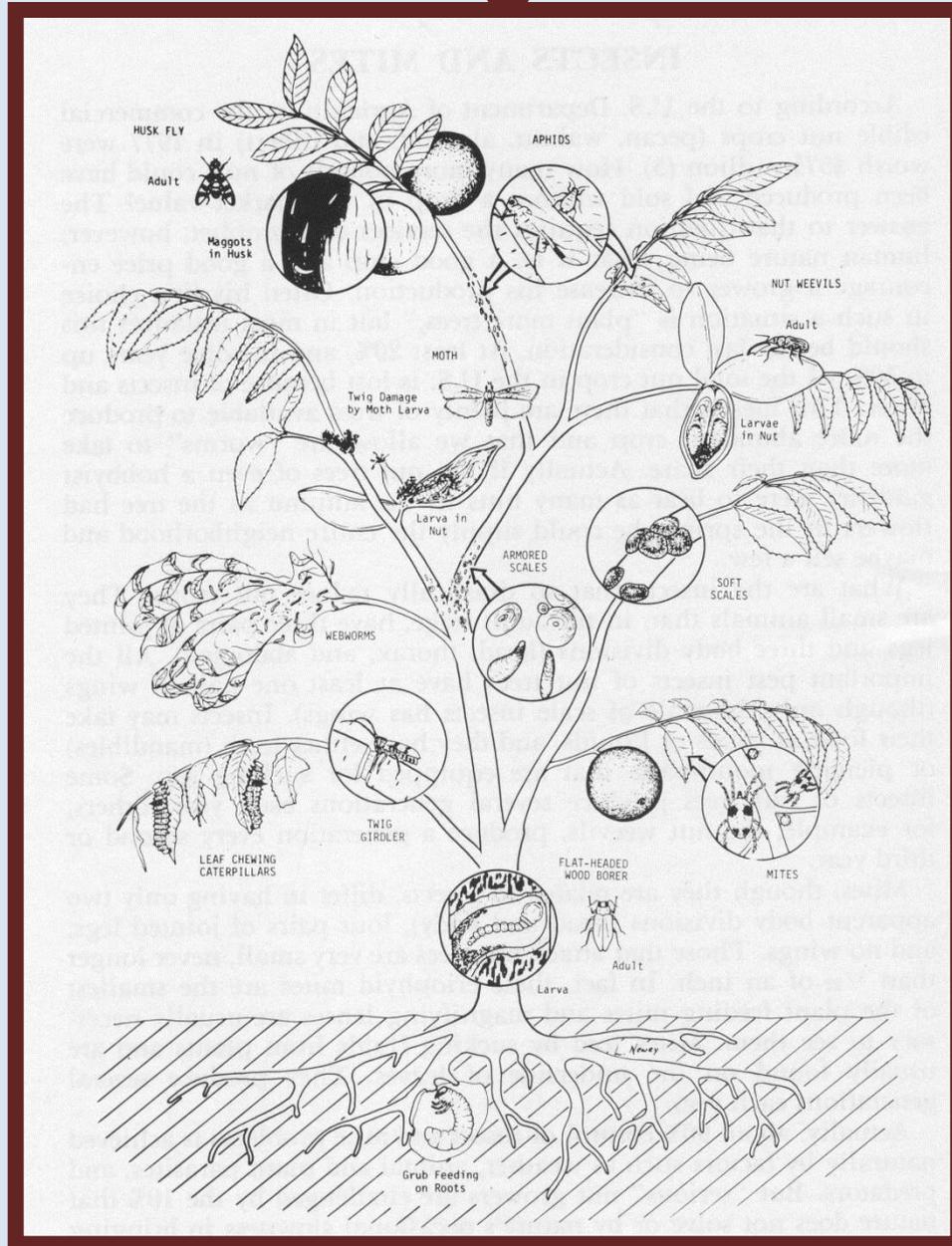
Chestnut Blight Disease



Phytophthora Root Rot, Ink Disease



bugs



CHESTNUT WEEVILS

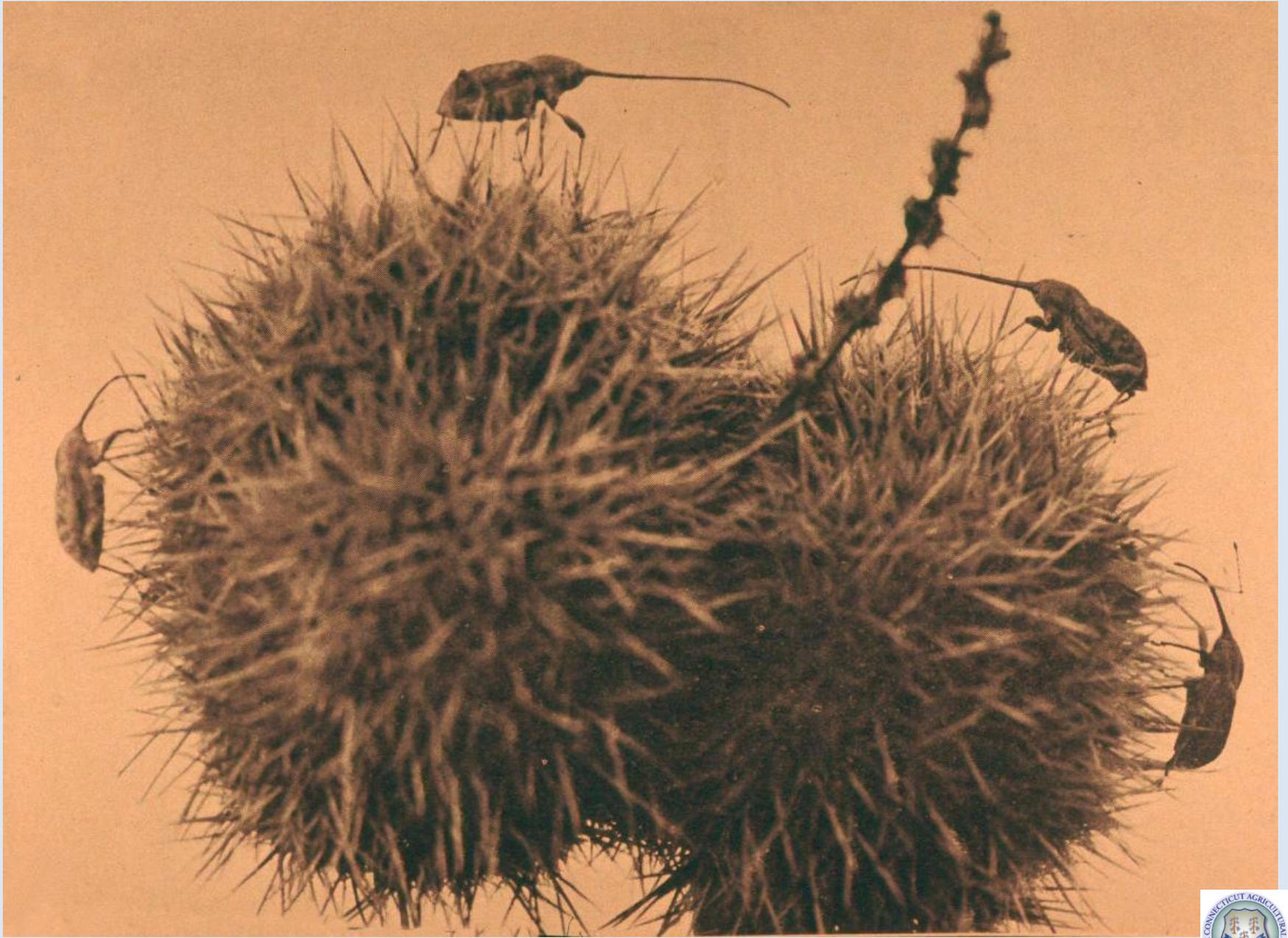
Curculio sayi

SMALL

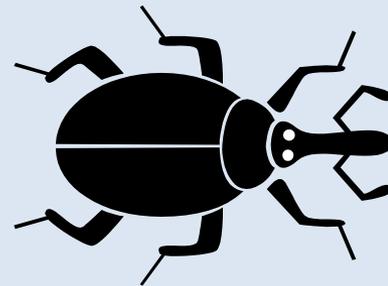
Curculio caryatrypes

LARGE





EMPLOY POULTRY





Joe Cavaliere's Chicken-Mobile



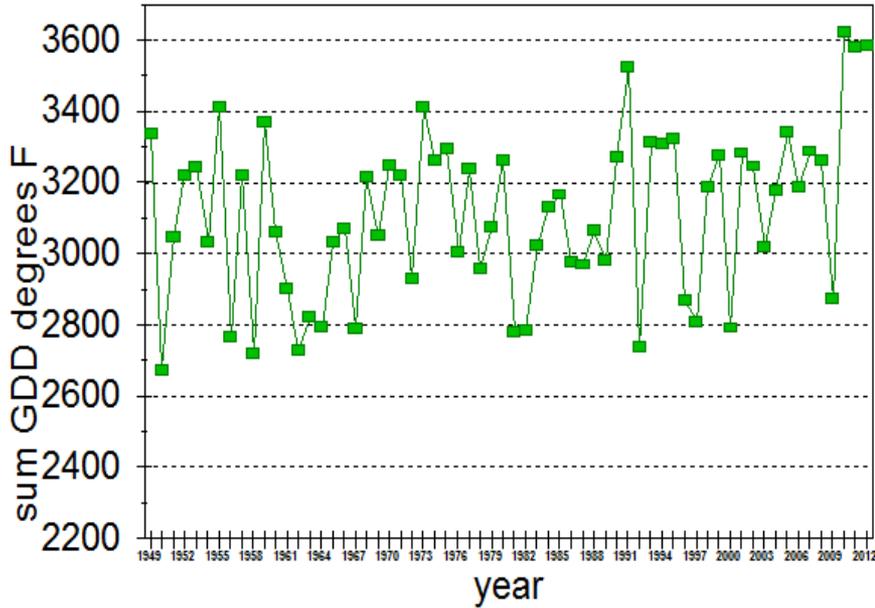
Asian Chestnut Gall Wasp



WEATHER

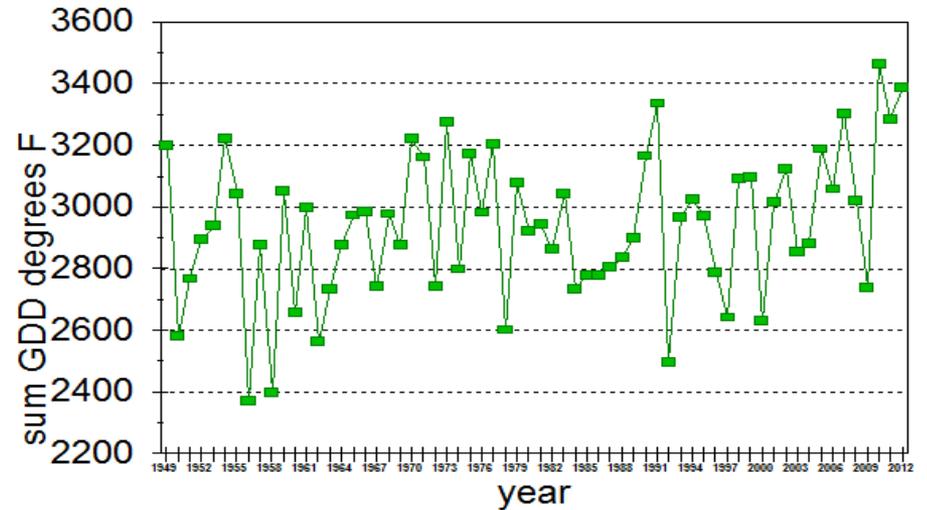


Sikorsky Growing Degree Days

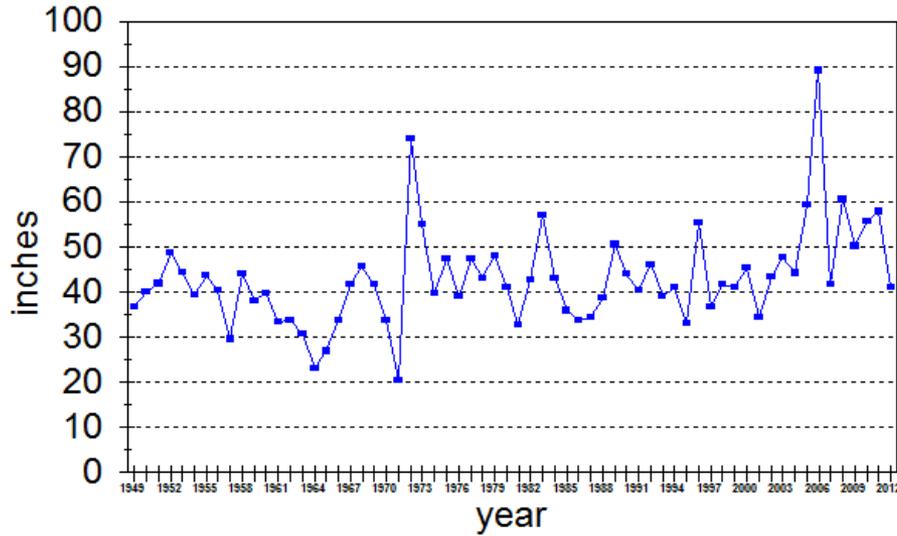


Data compilation by Francis Ferrandino,
Plant Pathology and Ecology, CAES

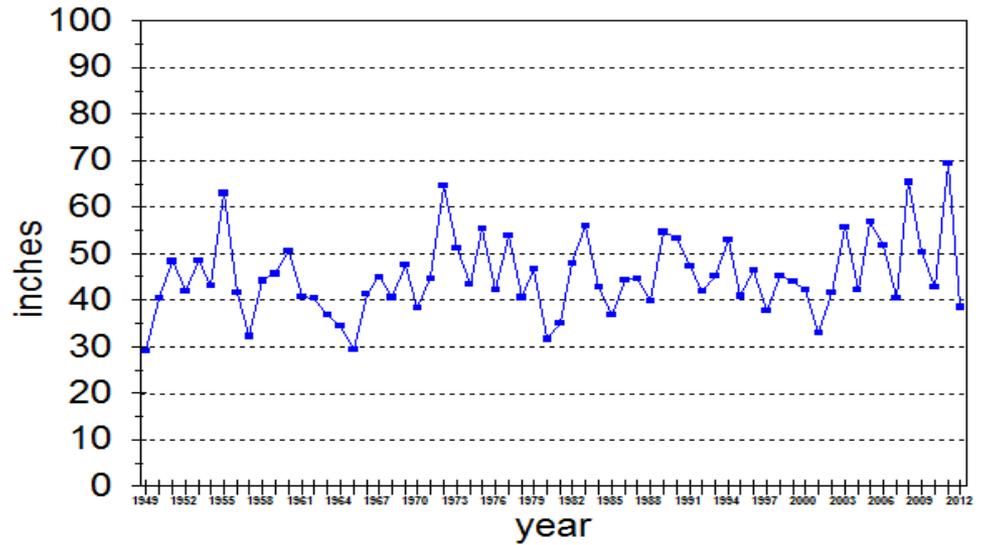
Windsor Locks Growing Degree Days



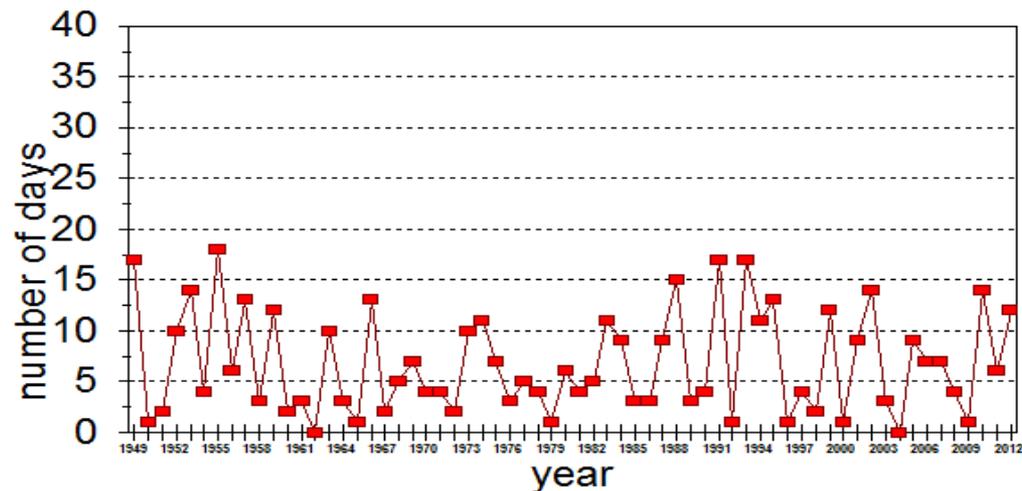
Sikorsky Precipitation



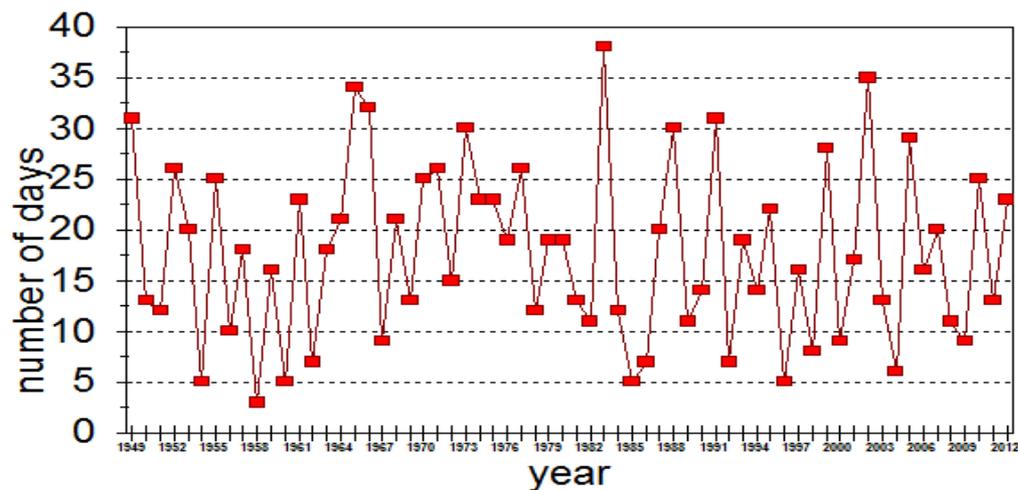
Windsor Locks Precipitation



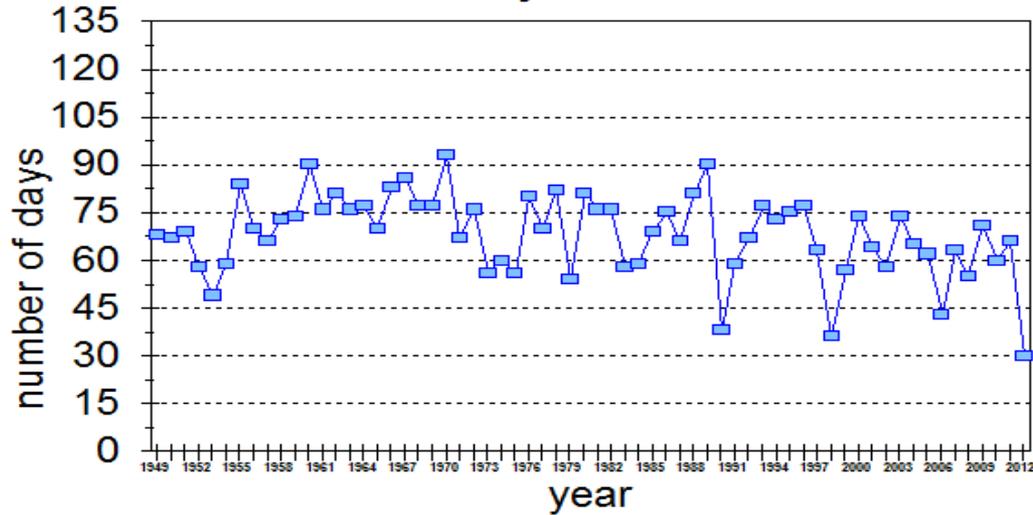
Sikorsky, Bridgeport number of days 90F or higher



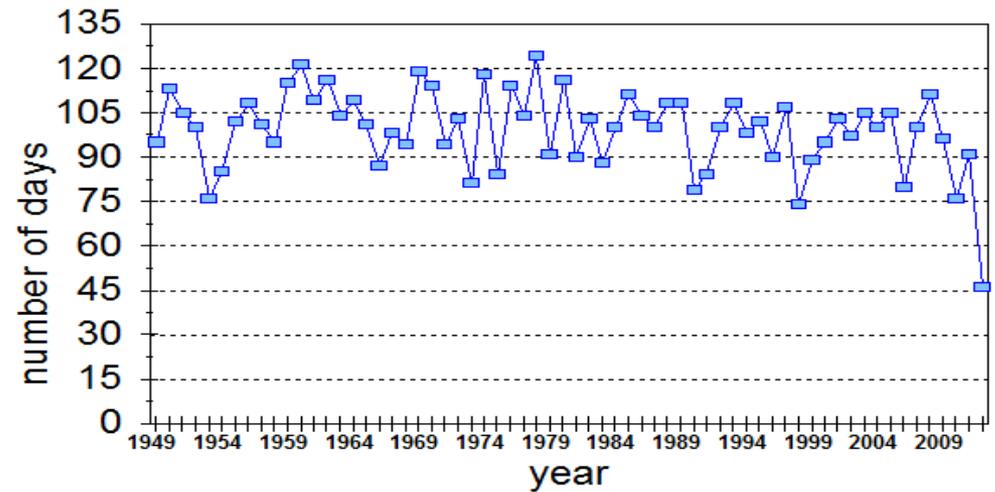
Windsor Locks, Bradley Airport number of days 90F or higher



Sikorsky number of days 28F or lower



Windsor Locks number of days 28F or lower



HARVESTING NUTS

- **Burs of most cultivars open to release nuts when ripe**





Hand harvesting

Photo: A. Gibb



Nut Wizard



Bag-a-Nut



Machine harvesting

Photo: A. Gibb



Facma harvester



MARKETING

- **Nuts are highly perishable, and must be kept refrigerated and not allowed to dry out**



- **Farm stand**
- **Local food co-op**
- **Local market**
- **Regional market**



Nutrients in Chestnuts

% of Dry Weight					
Cultivars crossed	Fiber	Protein	Fat	Carbs	nut wt gms
NH R2T18 X 'Lockwood'	8.27	10.19	0.83	86.5	18.7 +/- .6
NH R2T18 X 'S8'	8.46	6.92	1.8	88.7	15.4 +/- .6
NH R2T18 X 'Little Giant'*	8.78	8.51	1.33	87.8	14.8 +/- .9
NH R2T18 X 'Hope'*	3.03	3.23	0.61	30.1	14.8 +/- .8
NH R2T18 X NH R1T2	3.23	3.33	0.51	30.8	15.4 +/- .9
American	3.63	4.45	6.85	39.2	2.9
Japanese	3.63	3.23	0.04	38.9	13.9
*'Little Giant' and 'Hope' are sibs.					



Fatty Acids

Senter et al., 1994	total lipids	Palmitic	Stearic	Oleic	Linoleic	Linolenic
Chinese	21.7	2.2	trace	9.1	7.7	.8 +/- .5
European	29.5	4.3	0.4	8.8	12.6	1.6
Allegheny chinquapin	40.1	5.3	tr	16.8	12.2	1.8 +/- 1.1
American	95	10.5	.8 +/- .6	57.3	19.1	1.6 +/- .9



Cooking with Nuts

www.NorthernNutGrowers.org

The Centennial Cookbook

