

# ELEVENTH REPORT OF THE COMMITTEE ON PLANT DISTRIBUTION

The tenth report concluded the *Monocotyledoneae*. The present report begins with the *Dicotyledoneae* and includes the families through *Moraceae*, taken in the order of the eighth edition of Gray's Manual. Unlike any of the previous reports the plants included here are all trees and shrubs with the exception of *Saururus*.

The data for these reports have been compiled chiefly from the herbarium of the New England Botanical Club and the herbarium of the Arnold Arboretum and Gray Herbarium.

## PRELIMINARY LISTS OF NEW ENGLAND PLANTS — XXXVI

The sign + indicates that an herbarium specimen has been seen, the sign — that a reliable printed record has been found and the sign \* is used for those plants which are not native in our flora.

	Me.	N. H.	Vt.	Mass.	R. I.	Conn.
SAURURACEAE						
<i>Saururus cernuus</i> L.					+	+
SALICACEAE						
<i>Populus alba</i> L.	*	*	*	*	*	*
<i>Populus balsamifera</i> L.	+	+	+	+	+	+
<i>Populus balsamifera</i> var. <i>subcordata</i> Hylander	+		+			
<i>Populus canescens</i> (Ait.) Sm.						*
<i>Populus deltoides</i> Marsh.	+	+	+	+	+	+
<i>Populus deltoides</i> var. <i>missouriensis</i> (Henry) Rehd.						+
<i>Populus</i> × <i>gileadensis</i> Rouleau ( <i>balsamifera</i> × <i>deltoides</i> )	+	+	+	+	+	+
<i>Populus grandidentata</i> Michx.	+	+	+	+	+	+
<i>Populus heterophylla</i> L.						+
<i>Populus nigra</i> L. var. <i>italica</i> Muenchh.	*	*	*	*	*	*
<i>Populus tremuloides</i> Michx.	+	+	+	+	+	+
<i>Populus tremuloides</i> var. <i>magnifica</i> Viet.	+	+				
<i>Populus tremuloides</i> f. <i>pendula</i> Jaeger and Beisner	+					
<i>Populus tremuloides</i> f. <i>reniformis</i> Tidestr.	+					+
<i>Salix alba</i> L.	*	*	*	*		*
<i>Salix alba</i> var. <i>calva</i> G. F. W. Mey.	*	*	*	*		*
<i>Salix alba</i> var. <i>vitellina</i> (L.) Stokes	*	*	*	*	*	*
<i>Salix alba</i> × <i>fragilis</i>	*	*	*	*	*	*
<i>Salix amygdaloides</i> Anderss.			—	+		
<i>Salix arctophila</i> Cockerell	+					
<i>Salix argyrocarpa</i> Anderss.	+	+				

	Me.	N. H.	Vt.	Mass.	R. I.	Conn.
<i>Salix babylonica</i> L.			*	*		*
<i>Salix Bebbiana</i> Sarg.	+	+	+	+	+	+
<i>Salix Bebbiana</i> var. <i>capreifolia</i> Fern.						+
<i>Salix Bebbiana</i> × <i>discolor</i>				+		
<i>Salix Bebbiana</i> × <i>gracilis</i>				+		
<i>Salix Bebbiana</i> × <i>rigida</i>				+		
<i>Salix candida</i> Flügge	+		+	+		+
<i>Salix candida</i> f. <i>denudata</i> (Anderss.) Rouleau			+	+		+
<i>Salix candida</i> × <i>Bebbiana</i>				+		
<i>Salix candida</i> × <i>gracilis</i>				+		
<i>Salix candida</i> × <i>rigida</i>				+		
<i>Salix Caprea</i> L.						*
<i>Salix cinerea</i> L.				*		
<i>Salix cinerea</i> × <i>rigida</i>				+		
<i>Salix coactilis</i> Fern.	+					
<i>Salix cordata</i> Michx.	—			—		
<i>Salix cordata</i> var. <i>abrusa</i> Fern.	+					
<i>Salix discolor</i> Muhl.	+	+	+	+	+	+
<i>Salix discolor</i> var. <i>latifolia</i> Anderss.	+	+		+	+	+
<i>Salix discolor</i> var. <i>Overi</i> C. R. Ball	+					
<i>Salix discolor</i> × <i>humilis</i>	+	+	+	+	+	
<i>Salix fragilis</i> L.	*	*	*	*	*	*
<i>Salix glaucophylloides</i> Fern.	+					
<i>Salix glaucophylloides</i> f. <i>lasioclada</i> Fern.	+					
<i>Salix gracilis</i> Anderss.	+	+	+	+		+
<i>Salix gracilis</i> var. <i>textoris</i> Fern.	+	+	+	+	+	+
<i>Salix gracilis</i> × <i>humilis</i> var. <i>microphylla</i>				+		
<i>Salix gracilis</i> × <i>sericea</i>				+		
<i>Salix</i> × <i>Grayi</i> Schneid. ( <i>argyrocarpa</i> × <i>planifolia</i> )		+				
<i>Salix herbacea</i> L.	+	+	—			
<i>Salix humilis</i> Marsh.	+	+	+	+	+	+
<i>Salix humilis</i> var. <i>hyporhysa</i> Fern.						+
<i>Salix humilis</i> var. <i>keweenawensis</i> Farw.	+	+	+			
<i>Salix humilis</i> var. <i>microphylla</i> (Anderss.) Fern.	+	+		+	+	+
<i>Salix humilis</i> f. <i>curtifolia</i> Fern.				+		
<i>Salix humilis</i> f. <i>festiva</i> Fern.				+		
<i>Salix humilis</i> f. <i>tortifolia</i> Fern.				+		
<i>Salix humilis</i> × <i>gracilis</i>				+		
<i>Salix humilis</i> × <i>sericea</i>				+		+
<i>Salix humilis</i> × <i>humilis</i> var. <i>microphylla</i>				+		
<i>Salix incana</i> Schrank	*					
<i>Salix interior</i> Rowlee	+	+	+	+		
<i>Salix interior</i> var. <i>exterior</i> Fern.	+					
<i>Salix interior</i> f. <i>Wheeleri</i> (Rowlee) Rouleau						+
<i>Salix</i> × <i>Jesupi</i> Fern. ( <i>alba</i> × <i>lucida</i> )						+
<i>Salix lucida</i> Muhl.	+	+	+	+	+	+
<i>Salix lucida</i> var. <i>angustifolia</i> Anderss.	+	+	+			
<i>Salix lucida</i> var. <i>intonsa</i> Fern.	+	+	—	+		
<i>Salix</i> × <i>myricoides</i> (Muhl.) Carey ( <i>rigida</i> × <i>sericea</i> )	+	+	+	+	+	+
<i>Salix nigra</i> Marsh.	+	+	+	+	+	+
<i>Salix</i> × <i>Peasei</i> Fern.		+				



	Me.	N. H.	Vt.	Mass.	R. I.	Conn.
<i>Salix pedicellaris</i> Pursh	+		+			
<i>Salix pedicellaris</i> var. <i>hypoglauca</i> Fern.	+	+	+	+		+
<i>Salix pedicellaris</i> var. <i>tenuescens</i> Fern.	+	+		+		
<i>Salix pellita</i> Anderss.	+	+	+			
<i>Salix pellita</i> f. <i>psila</i> Schneid.	+					
<i>Salix pentandra</i> L.	*	*	*	*	*	*
<i>Salix planifolia</i> Pursh	+	+	+			
<i>Salix purpurea</i> L.	*	*	*	*	*	*
<i>Salix pyrifolia</i> Anderss.	+	+	+			
<i>Salix pyrifolia</i> × <i>discolor</i>	+					
<i>Salix rigida</i> Muhl.	+	+	+	+	+	+
<i>Salix rigida</i> var. <i>angustata</i> (Pursh) Fern.	+	+	+	+		+
<i>Salix rigida</i> f. <i>mollis</i> (Palmer and Steyererm.) Fern.			+	+	+	+
<i>Salix rigida</i> × <i>discolor</i>	+			+		
<i>Salix rigida</i> × <i>gracilis</i>	+			+		
<i>Salix rigida</i> × <i>lucida</i>				+		
<i>Salix rigida</i> × <i>pedicellaris</i>				+		
<i>Salix rigida</i> × <i>subsericea</i>				+		
<i>Salix</i> × <i>rubens</i> Schrank ( <i>alba</i> × <i>fragilis</i> )	*	*	*	*	*	*
<i>Salix sericea</i> Marsh.	+	+	+	+	+	+
<i>Salix serissima</i> (Bailey) Fern.			+	+		+
<i>Salix</i> × <i>subsericea</i> (Anderss.) Schneid. ( <i>gracilis</i> var. <i>textoris</i> × <i>sericea</i> )	+		+	+		+
<i>Salix</i> × <i>Smithiana</i> Willd. ( <i>viminialis</i> × <i>caprea</i> )	*			*		
<i>Salix Uva-ursi</i> Pursh	+	+	+			
<i>Salix Uva-ursi</i> f. <i>lasiophylla</i> Fern.		+				
<i>Salix viminalis</i> L.	*		*	*		
MYRICACEAE						
<i>Comptonia peregrina</i> (L.) Coult.	+	+	+	+	+	+
<i>Myrica</i> Gale L.	+	+	+	+	+	+
<i>Myrica</i> Gale var. <i>subglabra</i> (Chev.) Fern.	+	+	+	+	+	+
<i>Myrica pensylvanica</i> Loisel.	+	+		+	+	+
JUGLANDACEAE						
<i>Carya cordiformis</i> (Wang.) K. Koch		+	+	+	+	+
<i>Carya glabra</i> (Mill.) Sweet		+	+	+	+	+
<i>Carya ovalis</i> (Wang.) Sarg.	+	+	+	+	+	+
<i>Carya ovalis</i> var. <i>hirsuta</i> (Ashe) Sarg.				+	+	
<i>Carya ovalis</i> var. <i>obcordata</i> (Muhl. and Willd.) Sarg.				+		
<i>Carya ovalis</i> var. <i>obovalis</i> Sarg.				+		
<i>Carya ovata</i> (Mill.) K. Koch	+	+	+	+	+	+
<i>Carya ovata</i> var. <i>Nuttallii</i> Sarg.		+				
<i>Carya ovata</i> var. <i>pubescens</i> Sarg.		+				
<i>Carya tomentosa</i> Nutt.		+	—	+	+	+
<i>Juglans cinerea</i> L.	+	+	+	+	+	+
<i>Juglans nigra</i> L.			—	+	+	+
CORYLACEAE						
<i>Alnus crispa</i> (Ait.) Pursh	+	+	+			
<i>Alnus crispa</i> var. <i>mollis</i> Fern.	+	+	+	+	+	
<i>Alnus glutinosa</i> (L.) Gaert.				*		
<i>Alnus rugosa</i> (DuRoi) Spreng.	+	+	+	+	+	+
<i>Alnus rugosa</i> f. <i>Emersoniana</i> Fern.	+	+	+	+	+	+
<i>Alnus rugosa</i> var. <i>americana</i> (Regel) Fern.	+	+	+	+		

	Mé.	N. H.	Vt.	Mass.	R. I.	Conn.
<i>Alnus rugosa</i> var. <i>americana</i> f. <i>hypomalaca</i> Fern.	+	+	+	+		
<i>Alnus rugosa</i> var. <i>americana</i> f. <i>tomophylla</i> Fern.	+					
<i>Alnus serrulata</i> (Ait.) Willd.	+	+	+	+	+	+
<i>Alnus serrulata</i> f. <i>noveboracensis</i> (Britt.) Fern.				+	+	
<i>Alnus serrulata</i> var. <i>subelliptica</i> Fern.		+	+	+	+	+
<i>Alnus serrulata</i> var. <i>subelliptica</i> f. <i>emarginata</i> Fern.						+
<i>Alnus serrulata</i> var. <i>subelliptica</i> f. <i>mollescens</i> Fern.				+		+
<i>Betula alba</i> L.				*		
<i>Betula borealis</i> Spach			+			
<i>Betula</i> × <i>caerulea</i> Blanch. ( <i>populifolia</i> × <i>caerulea-grandis</i> )			+	+		
<i>Betula caerulea-grandis</i> Blanch.	+	+	+			
<i>Betula glandulosa</i> Michx.	+	+				
<i>Betula lenta</i> L.	+	+	+	+	+	+
<i>Betula lenta</i> f. <i>laciniata</i> Rehd.		+				
<i>Betula lutea</i> Michx. f.	+	+	+	+	+	+
<i>Betula lutea</i> var. <i>macrolepis</i> Fern.	+	+	+	+	+	+
<i>Betula minor</i> (Tuckerm.) Fern.	+	+	-			
<i>Betula nigra</i> L.		+		+		+
<i>Betula papyrifera</i> Marsh.	+	+	+	+	+	+
<i>Betula papyrifera</i> var. <i>commutata</i> (Regel) Fern.	+	+		+		
<i>Betula papyrifera</i> var. <i>cordifolia</i> (Regel) Fern.	+	+	+	+	+	+
<i>Betula papyrifera</i> var. <i>macrostachya</i> Fern.	+					
<i>Betula papyrifera</i> var. <i>pensilis</i> Fern.	+					
<i>Betula papyrifera</i> × <i>populifolia</i>				+		
<i>Betula pendula</i> Roth		*		*		
<i>Betula populifolia</i> Marsh.	+	+	+	+	+	+
<i>Betula populifolia</i> f. <i>incisifolia</i> Fern.				+		
<i>Betula pumila</i> L.	+			+		+
<i>Carpinus caroliniana</i> Walt. var. <i>virginiana</i> (Marsh.) Fern.	+	+	+	+	+	+
<i>Corylus americana</i> Walt.	+	+	+	+	+	+
<i>Corylus americana</i> f. <i>missouriensis</i> (A. DC.) Fern.		+	+	+	+	+
<i>Corylus cornuta</i> Marsh.	+	+	+	+	+	+
<i>Corylus heterophylla</i> Fisch.						*
<i>Ostrya virginiana</i> (Mill.) K. Koch	+	+	+	+	+	+
<i>Ostrya virginiana</i> var. <i>lasia</i> Fern.				+		
FAGACEAE						
<i>Castanea dentata</i> (Marsh.) Borkh.	+	+	+	+	+	+
<i>Castanea pumila</i> (L.) Mill.				+		
<i>Fagus grandifolia</i> Ehrh.	+	+	+	+	+	+
<i>Fagus grandifolia</i> f. <i>pubescens</i> Fern. and Rehd.				+		
<i>Fagus grandifolia</i> var. <i>caroliniana</i> (Loud.) Fern. and Rehd.				+		
<i>Fagus sylvatica</i> L.				*		
<i>Fagus sylvatica</i> var. <i>atropurpurea</i> West.				*		
<i>Quercus alba</i> L.	+	+	+	+	+	+
<i>Quercus alba</i> f. <i>latiloba</i> (Sarg.) Palmer and Steyererm.	+	+	+	+	+	+



	Me.	N. H.	Vt.	Mass.	R. I.	Conn.
<i>Quercus alba</i> f. <i>repanda</i> (Michx.) Trel.	+			+		
<i>Quercus</i> × <i>Bebbiana</i> Schneid. ( <i>alba</i> × <i>macrocarpa</i> )			+			
<i>Quercus bicolor</i> Willd.	+	+	+	+	+	+
<i>Quercus coccinea</i> Muenchh.	+	+	+	+	+	+
<i>Quercus</i> × <i>Faxoni</i> Trel. ( <i>alba</i> × <i>prinoides</i> )				+		
<i>Quercus</i> × <i>Fernowi</i> Trel. ( <i>alba</i> × <i>stellata</i> )				+		
<i>Quercus ilicifolia</i> Wang.	+	+	+	+	+	+
<i>Quercus imbricaria</i> Michx.				*		
<i>Quercus</i> × <i>Leana</i> Nutt. ( <i>imbricaria</i> × <i>velutina</i> )			+			
<i>Quercus macrocarpa</i> Michx.	+		+	+		+
<i>Quercus macrocarpa</i> f. <i>olivaeformis</i> (Michx. f.) Trel.			+	+		
<i>Quercus Muehlenbergii</i> Engelm.			+	+		+
<i>Quercus Muehlenbergii</i> f. <i>Alexanderi</i> (Britt.) Trel.						+
<i>Quercus palustris</i> Muenchh.			—	+	+	+
<i>Quercus</i> × <i>Porteri</i> Trel. ( <i>rubra</i> × <i>velutina</i> )				+		
<i>Quercus prinoides</i> Willd.		+	+	+	+	+
<i>Quercus prinoides</i> var. <i>rufescens</i> Rehd.				+		
<i>Quercus Prinus</i> L.	+	+	+	+	+	+
<i>Quercus</i> × <i>Rehderi</i> Trel. ( <i>ilicifolia</i> × <i>velutina</i> )				+	+	
<i>Quercus</i> × <i>Robbinsii</i> Trel. ( <i>coccinea</i> × <i>ilicifolia</i> )				+	+	
<i>Quercus Robur</i> L.	*	*		*	*	
<i>Quercus rubra</i> L.	+	+	+	+	+	+
<i>Quercus rubra</i> var. <i>borealis</i> (Michx. f.) Farw.	+	+	+	+		
<i>Quercus</i> × <i>Saulii</i> Schneid. ( <i>alba</i> × <i>Prinus</i> )			—	+	+	
<i>Quercus stellata</i> Wang.				+	+	+
<i>Quercus stellata</i> var. <i>Margaretta</i> (Ashe) Sarg.				+		
<i>Quercus</i> × <i>stelloides</i> E. J. Palmer ( <i>stellata</i> × <i>prinoides</i> )				+	+	
<i>Quercus velutina</i> Lam.	+	+	+	+	+	+
<i>Quercus velutina</i> f. <i>dilaniata</i> Trel.	+	+	+	+	+	+
<i>Quercus velutina</i> f. <i>macrophylla</i> (Dippel) Trel.	+	+	+	+	+	
<i>Quercus velutina</i> f. <i>pagodaeformis</i> Trel.				+	+	
ULMACEAE						
<i>Celtis occidentalis</i> L.				+		+
<i>Celtis occidentalis</i> var. <i>canina</i> (Raf.) Sarg.			+			
<i>Celtis occidentalis</i> var. <i>pumila</i> (Pursh) Gray		+	+	+	+	+
<i>Ulmus americana</i> L.	+	+	+	+	+	+
<i>Ulmus americana</i> f. <i>alba</i> (Ait.) Fern.	+	+	+	+	+	+
<i>Ulmus americana</i> f. <i>intercedens</i> Fern.	+	+		+		+
<i>Ulmus americana</i> f. <i>laevior</i> Fern.	+	+	+	+	+	+
<i>Ulmus americana</i> f. <i>pendula</i> (Ait.) Fern.	+	+	+	+	+	+
<i>Ulmus glabra</i> Huds.				*	*	*
<i>Ulmus procera</i> Salisb.	*		*	*		
<i>Ulmus rubra</i> Muhl.	+	+	+	+	+	+
<i>Ulmus Thomasi</i> Sarg.			+	+		
MORACEAE						
<i>Broussonatia papyrifera</i> (L.) Vent.					*	*
<i>Ficus Carica</i> L.				*		
<i>Maclura pomifera</i> (Raf.) Schneid.				*		*
<i>Morus alba</i> L.	*	*	*	*	*	*
<i>Morus rubra</i> L.			+	+	+	+



One tree that might have been included in the above list is *Quercus falcata* Michx. var. *pagodaefolia* Ell. as Mr. Eugene P. Bicknell in his "Ferns and Flowering Plants of Nantucket" records a single individual growing on Nantucket. He also refers to a similar tree growing at Fairhaven, Massachusetts. It seems doubtful if this variety is really a part of our New England flora. *Castanea pumila* is included as occurring in Massachusetts, based on a single specimen from Stony Brook Reservation. That this is a native to Massachusetts is questionable.

*Saururus cernuus*, the only herbaceous species in this list, is a southern species occurring in the Naugatuck and Thames Valleys of Connecticut and at Little Compton, Rhode Island.

Certain trees are included which very evidently have been planted. *Ficus Carica* is in the list but it could hardly be considered as part of the flora. Other trees like *Populus alba*, *Salix alba*, *S. fragilis* and their hybrids are so firmly established that it is hard to realize that they are not native. *Populus nigra* var. *italica* is an interesting example of a widely distributed tree that depends entirely on propagation from cuttings. In the highway developments in recent years *Salix pentandra* has been extensively planted.

Many hybrids have been found and probably more exist that have not been identified as such. The hybrids have been omitted from the following distributional categories as have also varieties and forms which seem to have no geographical significance. Geographically the species here considered fall into groups which have already been used and defined in previous reports but in the present list there are no specimens to represent marine or estuarine habitats.

I. GENERALLY DISTRIBUTED.—*Populus grandidentata*, *P. tremuloides*, *Salix Bebbiana*, *S. discolor*, *S. humilis*, *S. lucida*, *S. rigida*, *S. sericea*, *Myrica Gale*, *Betula lutea*, *B. papyrifera*, *B. papyrifera* var. *cordifolia*, *Ostrya virginiana*, *Corylus cornuta*, *Fagus grandifolia*.

Wide ranging species are usually northern. Exceptions are *Ostrya virginiana* and *Fagus grandifolia* which represent species coming into New England from the Appalachian area in the southwest.

*Myrica Gale* (typical) is wide spread but the var. *subglabra*



is rare, occurring only in Connecticut, Rhode Island and northern Maine. While the Canoe Birches, (*Betula papyrifera* and the *var. cordifolia*), are very generally distributed, the *var. commutata* is represented by too few specimens to point to a definite range and the *var. pensilis* has been reported only from Dacey Dam and Pembroke in Maine.

II. RATHER GENERAL EXCEPT CAPE COD AND WASHINGTON COUNTY, MAINE.—*Salix rigida*, *var. angustata*, *Betula lutea var. macrolepis*, *Ulmus americana*.

The distribution of *Salix rigida var. angustata* seems to be much more restricted than the species. This may be more apparent than real as this variety has not been recognized until recently. *Betula lutea var. macrolepis* seems to be absent also from Aroostook County. Herbarium material of *Ulmus americana* may not be indicative of its actual range. Many collectors have failed to include it from an area in the belief that it might have escaped from cultivation.

III. NORTHERN, WITH NUMEROUS STATIONS SOUTH OF 43°.—*Populus balsamifera*, *Salix pedicellaris* and *S. pedicellaris var. hypoglauca*, *S. gracilis* and *S. gracilis var. textoris*, *Alnus rugosa*, and its varieties.

*Salix pedicellaris* is more northern and much more local than its *var. hypoglauca*. Although *Salix gracilis* and its *var. textoris* (formerly known as *S. petiolaris*) have approximately the same range, the variety is much more frequent.

IV. NORTHERN, NOT MUCH SOUTH OF 43°.—*Populus tremuloides var. magnifica*, *Salix coactilis*, *S. lucida var. angustifolia* and *var. intonsa*, *S. pellita*, *S. pyrifolia*, *Alnus crispa var. mollis*, *Betula caerulea-grandis*, *Quercus rubra var. borealis*.

*Salix coactilis* occurs only in Maine where it is local, chiefly in the Penobscot River Valley. The varieties *angustifolia* and *intonsa* of *Salix lucida* are much more northern and restricted in their distribution than the typical form which is widely distributed in New England.

V. ALPINE.—*Salix arctophila*, *S. argyrocarpa*, *S. herbacea*, *S. planifolia*, *S. Uva-ursi*, *Alnus crispa*, *Betula borealis*, *B. glandulosa*, *B. minor*.

The exact distribution can be better understood from the following table:



Mt. Katahdin	Mt. Katahdin and White Mts.	Mt. Katahdin, White Mts. and Vermont	Mt. Katahdin and northern Vermont
<i>Salix arctophila</i>	<i>S. argyrocarpa</i>	<i>S. planifolia</i>	<i>Betula borealis</i>
	<i>S. herbacea</i>	<i>S. Uva-ursi</i>	
	<i>Betula glandulosa</i>	<i>Alnus crispa</i>	
	<i>B. minor</i>		

VI. CAPE COD, GENERAL IN MAINE SOUTH OF  $45^{\circ}$ , BUT NOT NORTHERN MAINE.—*Salix nigra*, *Myrica pensylvanica*, *Comptonia peregrina*, *Alnus serrulata*, *Betula populifolia*, *Carpinus caroliniana* var. *virginiana*, *Corylus americana*, *Castanea dentata*, *Quercus alba*, *Q. bicolor*, *Q. ilicifolia*, *Q. rubra*, *Q. velutina*.

*Myrica pensylvanica* is confined to southeastern New England and the Maine coast. *Quercus velutina* is largely in southern New England but extends into southern New Hampshire and southwestern Maine. Of more general distribution are *Salix nigra*, *Comptonia peregrina*, *Betula populifolia*, and *Quercus rubra*. Other species extend east only to the Penobscot Bay and River: *Alnus serrulata* (only 2 stations beyond the Kennebec), *Carpinus caroliniana* var. *virginiana*, *Corylus americana*, *Castanea dentata*, *Quercus alba*, *Q. bicolor* and *Q. ilicifolia* (with only one station on Mt. Desert).

VII. NEITHER CAPE COD NOR NORTHERN MAINE AND NOT IN WASHINGTON COUNTY, MAINE.—*Ulmus rubra*, *Betula lenta*, *Juglans cinerea*, *Carya ovata*.

*Ulmus rubra* is general in New Hampshire, Vermont, Massachusetts (except Cape Cod) and Connecticut but rare in Maine and Rhode Island. *Betula lenta* has some stations in Vermont, southern New Hampshire and southeastern Maine. *Carya ovata* and *Juglans cinerea* do not extend beyond the Kennebec River.

VIII. CHIEFLY THE THREE SOUTHERN STATES.—*Quercus prinoides*, *Q. coccinea*, *Carya ovalis*, *C. glabra*, *Alnus serrulata* var. *subelliptica*.

*Quercus prinoides* has a few stations in southern Vermont and southern New Hampshire while *Q. coccinea* with the same distribution extends to York and Cumberland Counties, Maine. *Carya ovalis* is represented by 2 Maine stations, 3 New Hampshire and one Vermont but is too poorly known for any discussion. *Carya glabra* extends into southwestern Vermont and southern New Hampshire. *Alnus serrulata* var. *subelliptica* is more southern than the typical form but has one station in New Hampshire and one in Vermont.



IX. CHIEFLY THE THREE SOUTHERN STATES BUT NOT IN WESTERN MASSACHUSETTS.—*Saururus cernuus*, *Salix humilis* var. *microphylla*, *Carya tomentosa*, *Quercus stellata*.

*Saururus cernuus* comes in from the south and west and is confined to Connecticut with the exception of one station in Rhode Island. *Salix humilis* var. *microphylla* (*S. tristis*) reaches southern New Hampshire and has one station in Maine on Mt. Desert. *Carya tomentosa* has one New Hampshire station but none in Maine. *Quercus stellata* is limited to extreme southern Connecticut, Rhode Island, Cape Cod and the Islands.

X. CHIEFLY THE THREE SOUTHERN STATES BUT NOT ON CAPE COD.—*Carya cordifolia*, *Quercus Prinus*, *Celtis occidentalis* and its vars. *canina* and *pumila*.

*Carya cordiformis* extends up into western Vermont. *Quercus Prinus* occurs in western and southern Vermont, southern New Hampshire and southeastern Maine. *Celtis occidentalis* occurs in western Vermont and the var. *pumila* in the Connecticut Valley in Vermont and New Hampshire.

XI. CHIEFLY THE THREE SOUTHERN STATES BUT NEITHER CAPE COD NOR WESTERN MASSACHUSETTS.—*Quercus palustris*.

XII. COASTAL PLAIN.—*Salix humilis* var. *hyporhysa*, *Ostrya virginiana* var. *lasia*, *Quercus prinoides* var. *rufescens*, *Quercus stellata* var. *Margaretta*.

The typical form of *Quercus stellata* although it also occurs on the trap ridges of the New Haven, Connecticut, area is usually considered to be a coastal plain species.

XIII. CALCICOLOUS, CHIEFLY WEST OF THE CONNECTICUT RIVER IN THE SOUTH BUT IN THE EAST MOSTLY NORTH OF 45°.—*Salix candida*, *S. glaucophylloides*, *Betula pumila*, *Quercus macrocarpa*.

*Salix candida* has one station in Essex County, Massachusetts. *S. glaucophylloides* is found only in northern Maine. *Betula pumila* grows in the limestone areas of western Connecticut and western Massachusetts and in northern Maine with one station at Orono in central Maine. *Quercus macrocarpa* occurs in western New England and central Maine.

XIV. RIVER VALLEYS, CHIEFLY OF WESTERN NEW ENGLAND.—*Salix serissima*, *Quercus Muehlenbergii*, *Ulmus Thomasi*.

XV. MISCELLANEOUS.—*Populus deltoides*, *P. heterophylla*, *Salix amygdaloides* *S. interior*, *S. interior* var. *exterior*, *Juglans nigra*, *Betula nigra*, *Morus rubra*.

In some cases native species have been so widely planted beyond their normal range that the plotting of their natural distribution is difficult. *Populus deltoides*, the Cottonwood, is a western species which reaches western New England as a native plant but has been extensively planted farther east. *Juglans nigra* is another western species which occurs as a native in western New England but is planted in the east. *Morus rubra* is native in western Connecticut, western Massachusetts and southwestern Vermont but is also planted in southern New England.

*Populus heterophylla*, another western species, is only represented in southwestern Connecticut. *Salix amygdaloides* is confined to western Vermont and western Massachusetts. *Salix interior* seems to be confined to the Connecticut River Valley and the Lake Champlain region, while the *var. exterior* occurs only in the Aroostock River Valley in Maine. *Betula nigra* is restricted to the Merrimac and Ipswich Rivers and their tributaries except for one station in southwestern Connecticut.—R. C. BEAN, C. H. KNOWLTON, and A. F. HILL.

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