

Euonymus spp.

Euonymus

Introduction

The genus *Euonymus* contains approximately 200 species worldwide, distributed mainly in warm subtropical regions, with a few species extending into the frigid temperate regions of the northern hemisphere. In China, 111 species, ten varieties and four forms have been reported^[15].

Species of *Euonymus* in China (NEXT PAGE)

I. *Euonymus alatus*

Winged burning bush

Taxonomy

Family: Celastraceae

Genus: *Euonymus* L.

Description

Euonymus alatus is a deciduous shrub, 1-3 m tall, with two to four columns of corky wings along the twigs. Opposite leaves are ovate-elliptic or oblong elliptic, rarely obovate, 2-8 cm in length and 1-3 cm in width, with serrate margins. Petiole is inconspicuous or absent. Cyme inflorescence consists of one to three yellowish green flowers, occurring from May to June. Fruit is a purplish capsule 7-8 mm long with one to four splits, appearing from July to October. Seeds are brownish, elliptic and 5-6



mm in length^{[15][74]}.

Habitat

Euonymus alatus occurs on hillsides, in deciduous broadleaf mixed forests, and along ditches^[15].

Distribution

E. alatus is native to northeastern Asia and most of China except for the provinces of Guangdong, Hainan, Tibet, Xinjiang, and Yunnan ^{[15][164]}.

Economic Importance

The bright red leaf color of the *Euonymus alatus* in fall makes it a popular ornamental. The stems with corky wings are used in traditional Chinese medicine ^[15].

Brilliant autumn foliage of *Euonymus alatus*. (Photo by James H. Miller, UDSA-FS.)

Related Species

Euonymus alatus var. *pubescens* Maxim. has short hairs along the main vein on the lower leaf surface. *Euonymus alatus* var. *pubescens* grows on hillsides or dry forest edges, in Hebei, Heilongjiang, Inner Mongolia, Jilin, and Liaoning provinces^[15].

II. *Euonymus fortunei*

Wintercreeper

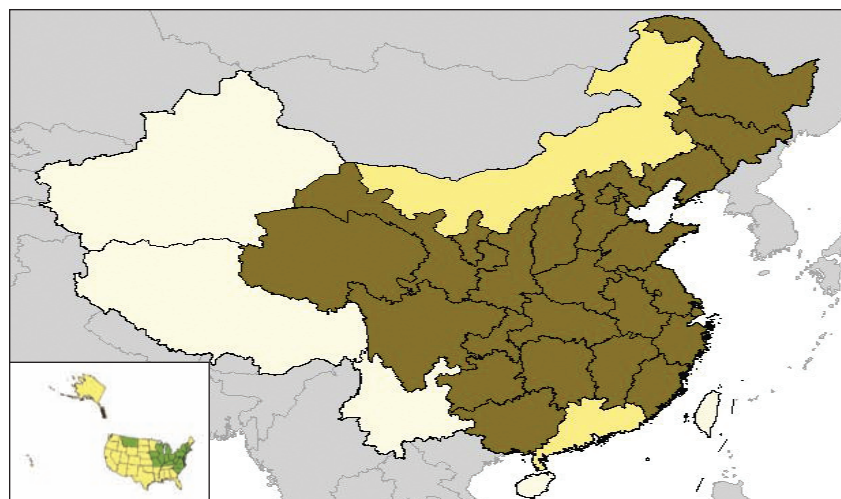
Taxonomy

Family: Celastraceae

Genus: *Euonymus* L.

Description

Euonymus fortunei is an evergreen shrub. The shape of its thin leathery leaves varies greatly from elliptic, oblong, linear-obovate to lanceolate; they are 3.5-8 cm long and 1.5-4 cm wide. The



Euonymus alatus in summer. (Photo by James H. Miller, USDA-FS.)

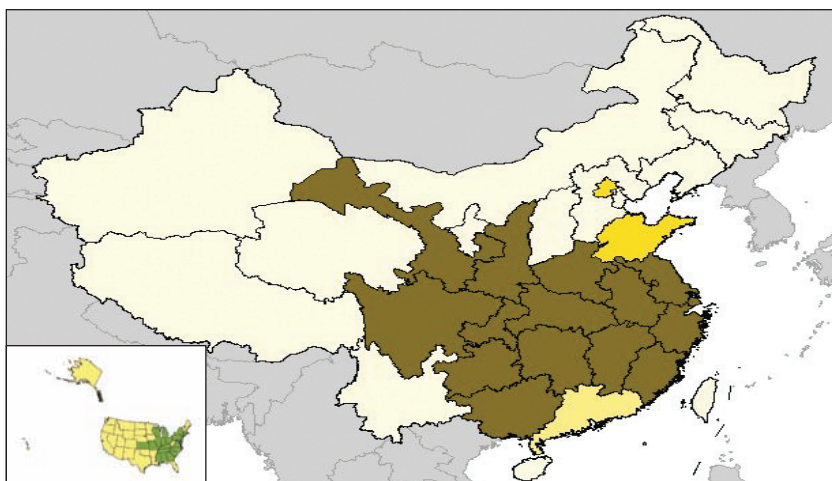
whitish green flowers bloom in June and occur in a cymose inflorescence. The fruit of *Euonymus fortunei* is a pinkish, subglobular capsule 6-12 mm in diameter. The seed is brown, oblong, and ripens in October^[2].

Habitat

Euonymus fortunei occurs on hillsides, in forests, forest margins, and thickets along riverbanks^[15].

Distribution

Euonymus fortunei occurs in Anhui, Fujian^[36], Gansu^[70], Guangxi^[51], Guizhou^[97], Henan^[25], Hubei, Hunan, Jiangxi, Jiangsu, Shaanxi, Sichuan, Yunnan, and Zhejiang provinces^[15].



Economic Importance

Stems and leaves are medicinally useful^[74].

Natural Enemies of *Euonymus*

Ten species of fungi and 28 arthropods have been recorded in association with the genus *Euonymus*.

Species of *Euonymus* in China

Scientific Name	Scientific Name	Scientific Name
<i>E. acanthocarpus</i> Franch.	<i>E. actinocarpus</i> Loes.	<i>E. aculeatus</i> Hemsl
<i>E. aculeolus</i> C. Y. Cheng ex J. S. Ma	<i>E. alatus</i> (Thunb.) Sieb	<i>E. amygdalifolius</i> Franch.
<i>E. angustatus</i> Sprague	<i>E. austro-tibetanus</i> Y. R. Li	<i>E. bockii</i> Loes.
<i>E. carnosus</i> Hemsl.	<i>E. centidens</i> Lévl.	<i>E. chengii</i> J. S. Ma
<i>E. chenmoui</i> Cheng	<i>E. chloranthoides</i> Yang	<i>E. chuii</i> Hand.-Mazz.
<i>E. cinereus</i> Laws	<i>E. clivicolus</i> W. W. Smith	<i>E. contractus</i> Sprague
<i>E. corntus</i> Hemsl.	<i>E. crenatus</i> C. H. Wang	<i>E. dielsianus</i> Loes.
<i>E. distichus</i> Lévl.	<i>E. dolichopus</i> Merr. ex J. S. Ma	<i>E. echinatus</i> Wall. ex Roxb
<i>E. ellipticus</i> (C. H. Wang) C. Y. Cheng	<i>E. euscaphis</i> Hand.-Mazz.	<i>E. fertilis</i> (Loes.) C. Y. Cheng ex C. Y. Cheng
<i>E. ficoides</i> C. Y. Cheng ex J. S. Ma	<i>E. fimbriatus</i> Wall. ex Roxb.	<i>E. fortunei</i> (Turcz.) Hand.-Mazz.
<i>E. frigidus</i> Wall. ex Roxb.	<i>E. gibber</i> Hance	<i>E. giraldii</i> Loes.
<i>E. gracillimus</i> Hemsl.	<i>E. grandiflorus</i> Wall.	<i>E. hainanensis</i> Chun et How
<i>E. hamiltonianus</i> Wall. ex Roxb.	<i>E. hederaceus</i> Champ. ex Benth.	<i>E. hemsleyanus</i> Loes.
<i>E. hui</i> J. S. Ma	<i>E. hukuangensis</i> C. Y. Cheng ex J. S. Ma	<i>E. hystrix</i> W. W. Smith
<i>E. japonicus</i> Thunb.	<i>E. jinfoshanensis</i> Z. M. Gu	<i>E. jinggangshanensis</i> M. X. Nie
<i>E. jinyangensis</i> C. Y. Chang	<i>E. Kengmaensis</i> C. Y. Cheng ex J. S. Ma	<i>E. kiautschovicus</i> Loes.
<i>E. kwangtungensis</i> C. Y. Chen	<i>E. lawsonii</i> C. B. Clarke ex Prain	<i>E. laxicymosus</i> C. Y. Cheng ex J. S. Ma
<i>E. laxiflorus</i> Champ. ex Benth	<i>E. leclerei</i> Lévl.	<i>E. lichiangensis</i> W. W. Smith
<i>E. linearifolius</i> Franch.	<i>E. maackii</i> Rupr.	<i>E. macropterus</i> Rupr.
<i>E. maximowiczianus</i> (Prokh.) Varosh	<i>E. mengtseanus</i> (Loes.) Sprague	<i>E. microcarpus</i> (Oliv.) Sprague
<i>E. mitratus</i> Pierre	<i>E. morrisonensis</i> Kanehira et Sasaki	<i>E. myrianthus</i> Hemsl.
<i>E. nanoides</i> Loes.	<i>E. nanus</i> Bieb	<i>E. nitidus</i> Benth.
<i>E. oblongifolius</i> Loes. et Rehd.	<i>E. omeiensis</i> Fang	<i>E. oxyphyllus</i> Miq.
<i>E. pallidifolius</i> Hayata	<i>E. parasimilis</i> C. Y. Cheng ex J. S. Ma	<i>E. paravagans</i> Z. M. Gu
<i>E. pashanensis</i> S. Z. Qu et Y. H. He	<i>E. pendulus</i> Wall. ex Roxb.	<i>E. perbellus</i> C. Y. Chang
<i>E. percoriaceus</i> C. Y. Wu ex J. S. Ma	<i>E. phellomanus</i> Loes.	<i>E. porphyreus</i> Loes.
<i>E. potingensis</i> Chun et How ex J. S. Ma	<i>E. przwalskii</i> Maxim	<i>E. pseudo-sootepensis</i> Y. R. Li et S. G. Wu
<i>E. rehderianus</i> Loes.	<i>E. rostratus</i> W. W. Smith	<i>E. sanguineus</i> Loes.
<i>E. saxicolus</i> Loes. et Rehd.	<i>E. scandens</i> Graham	<i>E. schensianus</i> Maxim.
<i>E. semenovii</i> Regel	<i>E. spraguei</i> Hayata	<i>E. subsessilis</i> Sprague
<i>E. subtrinervis</i> Rehd.	<i>E. szechuanensis</i> C. H. Wang	<i>E. tashiroi</i> Maxim.
<i>E. tengyuehensts</i> W. W. Smith	<i>E. theaculus</i> C. Y. Cheng	<i>E. theifolius</i> Wall.
<i>E. tibeticus</i> W. W. Smith	<i>E. tingens</i> Wall.	<i>E. tonkinensis</i> Loes.
<i>E. trichocarpus</i> Hayata	<i>E. vagans</i> Wall. ex Roxb.	<i>E. vasanoides</i> C. Y. Cheng ex J. S. Ma
<i>E. venosus</i> Hemsi	<i>E. verrucosoides</i> Loes.	<i>E. verrucosus</i> Scop.
<i>E. viburnoides</i> Prain	<i>E. wensiensis</i> J. W. Ren et D. S. Yao	<i>E. wilsonii</i> Sprague
<i>E. wui</i> J. S. Ma	<i>E. xylocarpus</i> C. Y. Cheng et Z. M. Gu	<i>E. yunnanensis</i> Franch.

Fungi

Phylum	Family	Species	H. R.	Ref.
Anamorphic	<i>Acantharia</i>	<i>Fusicladium euonymi-japonici</i> Hori	mo	23
Anamorphic	Ascomycetes	<i>Coleophoma cylindrospora</i> (Desm.) Höhn.	oo	23 [†]
		<i>Sphaeropsis euonymi</i> Gabotto	mo	23
Anamorphic	<i>Broomella</i>	<i>Pestalotia planimi</i> Vize	mo	23
Anamorphic	<i>Erysiphe</i>	<i>Oidium euonymi-japonici</i> (Arcang.) Sacc.	mo	23
Anamorphic	<i>Guignardia</i>	<i>Phyllosticta bolleana</i> Sacc.	oo	23
Anamorphic	<i>Leptosphaeria</i>	<i>Phoma subnervisequa</i> Desm.	mo	23
		<i>Cercospora euonymi</i> Erikss.	oo	23
		<i>Pseudocercospora destructiva</i> (Ravenel) Y.L. Guo & X.J. Liu	oo	110
Anamorphic	<i>Pyrenopeziza</i>	<i>Cylindrosporium frigidum</i> (Sacc.) Vassiljevsky	mo	23

[†]Recorded as *Macrophoma cylindrospora* (Desm.) Berl. et Vogl.

[‡]Recorded as *Cercospora destructiva* Rav.

Arthropods

Order	Family	Species	H.P.R.	Ref.	
Coleoptera	Cerambycidae	<i>Acalolepta sublusca</i> (Thomson)	po	124	
Homoptera	Aphididae	<i>Aphis clerodendri</i> Matsumura	po	100	
		<i>Ceroplastes japonicus</i> Green	po	151	
	Coccidae	<i>Ceroplastes rubens</i> Maskell	po	151	
		<i>Chloropulvinaria aurantii</i> (Cockerell)	p	85	
			po	151	
		<i>Chloropulvinaria floccifera</i> (Westwood)	p	65	
			p	85	
			po	151	
	Diaspididae	<i>Aonidiella aurantii</i> (Maskell)	p	85	
		<i>Chrysomphalus dictyospermi</i> (Morgan)	p	85	
		<i>Lepidosaphes corni</i> (Takahashi)	p	85 ¹	
		<i>Lepidosaphes gloverii</i> (Packard)	p	65	
			p	140	
		<i>Parlatoria camelliae</i> Comstock	p	85	
		<i>Unaspis euonymi</i> (Comstock)	p	131	
	Margarodidae	<i>Icerya purchasi</i> Maskell	p	140	
Lepidoptera	Geometridae	<i>Abraxas suspecta</i> Warren	p	65	
			p	138 ¹¹	
			p	158	
		<i>Amraica superans</i> (Butler)	p	65	
		<i>Buzura recursaria superans</i> Butler	p	85	
			po	138	
		<i>Buzura thibetaria</i> Oberthür	p	158	
		<i>Abraxas suspecta</i> Warren	p	85	
		<i>Phthonosema invenustaria</i> Leech	p	85	
			p	138	
		<i>Xandrames dholaria sericea</i> Butler	m	158	
		Tortricidae	<i>Homona magnanima</i> Diakonoff	p	65
				p	158
	Yponomeutidae	<i>Yponomeuta anatolicus</i> Stringer	oo	114	
		<i>Yponomeuta bipunctellus</i> Matsumura	m	114	
		<i>Yponomeuta griseatus</i> Moriuti	mo	114	
		<i>Yponomeuta kanaiellus</i> Matsumura	mo	114	
		<i>Yponomeuta pedallus</i> (Linnaeus)	p	114	
		<i>Yponomeuta polystigmellus</i> Felder et Felder	p	85	
		m	114		
		<i>Yponomeuta tokyonellus</i> Matsumura	m	114	

* For *Euonymus alatus* only, *Euonymus fortunei* is not included.

¹Recorded as *Insulaspis corni* (Takahashi)

¹¹Recorded as *Calospilos suspecta* Warren