THE GENUS AGASTACHE IN KENTUCKY (Clayton – 1830's ex Gronov. 1762)

Also known as Giant Hyssops or Hummingbird Mints has two native species in Kentucky: Agastache nepetoides (L.)-Kuntze (1891) Catnip/Yellow Giant Hyssop and Agastache scrophulariifolia (Willd.)-Kuntze (1891) Purple Giant Hyssop.

The genus Agastache is in the Lamiaceae (mint) family, subfamily nepetoideae, and the tribe mentheae. This genus was formally established in 1762 by a Dutch botanist Jan Frederik Gronovius (1690-1762) in his second edition of Flora Virginica (Linnaeus actively assisted Gronovius with this work). Flora Virginica was actually based on the notes and specimens sent to Gronovius by an English botanist John Clayton (1695-1773) while he was living in Virginia. Clayton had given the genus name to these perennial flowering herbs in the 1730's. The second edition was published in 1762 by Grovonius' son, Laurens (also a botanist), as the elder Grovonius had died in June of 1762. This second edition was published without Clayton's knowledge or permission. Agastache's author's citation is often followed by Clayton ex Grovonius (Gronov.). Linnaeus named a genus of wildflowers – Claytonia (Spring Beauty) in honor of Clayton's botanical contributions. Agastache (many spikes) comes from the Greek word Agan (many/very much) and Stakus/Stachys (ears /spikes of grain/wheat) which describes the plant's "many ears/spikes" of inflorescences.

Agastache plants are aromatic flowering perennials with 21 species in North America and 1 specie in Eastern Asia. The erect/branching mint family plants range from 0.5m tall to 3m tall with square stems and opposite, petioled, coarsely toothed leaves 1-15cm wide. Aromatic inflorescences of upright spikes 2.5-15cm long resemble candles in a candlelabrum. Numerous flowers per spike are 0.6cm long. Five petals/sepals (tepals) form a tubular two-lipped flower with 2 lobes on the upper lip and 3 lobes on the lower lip. Four stamens extend beyond the flower – 2 upper stamens curve downward and 2 lower stamens curve upward. Fruit is a brown round/oval dry nutlet 1.5-2mm long with minute hairs at the squared tipped end. Flowers, which do not open at the same time, can be white, yellow, orange, red, magenta, pink, mauve, blue purple, or lavender. Plants generally thrive in moist (not wet), sun or shade, rich soil, and limestone based anthropogenic (man-made/disturbed), forest edges, talus, and rocky habitats. They are hardy in zones 3-6. Agastaches are believed to be descended from robust aromatic Asian plants which are in the Genera Dracocephalum (typical dragonheads), Lallemantia (West Asian dragonheads), Shizonepeta (Japanese catnip), and Hyssops (True hyssops). The Agastaches probably/are believed to have originated as a North American/Trans-Beringian (Laurasion distribution) offshoot about 25 million years ago (late Oligocene geologic epoch of late Paleogenic period). Debate is on-going as to Agastache lineage.

The common name, Hummingbird Mint, is from the Agastache flowers' attraction to hummingbirds and the mint/anise aromas of their leaves. The common name, Giant Hyssop, is fairly ambiguous. Hyssop is both the classic name for genus Hyssopus and the plant Hyssopus officinalis (Hyssop) coined by Lineaus in 1753. Hyssop is a Eurasian (southern Europe/western Asian) aromatic mint with 4 stamens, square stems, and narrow/lanceolate opposite leaves. Hyssop can be used as an adjective to describe leaves that tend to be narrow/oblong/lanceolate – as Eupatorium hyssopifolium – commonly known Hyssop Leaf Eupatorium or Thoroughwort.

Interestingly, Hyssop or a "Hyssop-like" plant is mentioned in the Bible – 10 times in the New Testament and 2 times in the Old Testament. The Hebrews identified the plant as Ezov or Ezob while the Greek translation of this plant was Hyssop. Both the Hebrew and Greek name of this plant mentioned in the Bible probably share a common but unknown origin. Hyssopus officinalis (Hyssop)(L.) is not the Hyssop mentioned in the Bible as it is a southern European/western Asian species and was unknown in Palestine at these earlier biblical dates. Biblical scholars cite Origanum syriacum (Syrian Hyssop), a close relative to oregano and majoram, as most likely the Hyssop mentioned in the Bible. Other scholars believe that a mustard plant, caper (Capparis spinosa), or a mint family plant (Origanum maru), is the Biblical Hyssop. The issue is not resolved as to the actual identity of the "hissop" so important to Hebrew purification rites. Why Linnaeus chose Hyssopus (hyssop) for the genus name of these earlier mints now in the Agastache genus was probably based on several botanical/taxonomy factors of that time (plant structure, appearance, and sex organ(s) composition).

There are two native species of Agastache in Kentucky: A. nepetoides (L.) 1753-Kuntze (1891), Yellow Giant Hyssop and A. scrophulariifolia Willd. (1801)-Kuntze (1891), Purple Giant Hyssop. Agastache nepetoides is an infrequent FACU (Facultative Upland) plant found occasionally in wetlands (1-33%) and dry to mesic open woods and woodland borders across Kentucky. Greenish-yellow flowers are present (see photos). Agastache scrophulariifolia is a rare historical (not observed since 1980) plant in the Appalachian plateaus and interior low plateaus. Flower colorations range from white to blue/purple (see photes). Both these mint family plants have square stems, opposite leaves, and are aromatic. Both bloom July through October and stalks can remain standing through the winter. Flower colors are yellow for A. nepetoides and mainly blue/purple flowers for A. scrophulariifolia. Flower colorization can readily distinguish these two species. Other subjective differences can/may also assist in the identities:

A. nepetoides - Yellow Giant Hyssop	**A. scrophulariifolia - Purple Giant Hyssop**
2-5 feet tall	3-6+ feet tall
square stems – may be slightly winged	no winged stems
smooth stem	minute hairs on stem
weakly aromatic	strongly aromatic
calyx – 1-1.5 mm with ovate lobes	calyx – 2-2.5 mm – with lanceolate lobes

Agasstache nepetoides has other common names: catmint, catnep, catnip for its aromatic scent similar to catnip (Nepeta cataria). Yellow Giant Hyssop may also be referred to as calmint/calamint for its medical usages in tea or as a conserve (undried vegetables mixed with sugar and blended to form a soft mass) for a "calming" effect in treating "hysterical" complaints, seizures, stomachaches, and colic.

The species name nepetoides (L.) Yellow Giant Hyssop is Latin based meaning resembling Nepeta (catmint). The origin of nepetoides may be from several sources. Nepeta is Latin for catnip/catmint and was used by Linnaeus in 1738 as the genus name for catnip – "nepeta floribus interrupte spicatis pedunculatis" (nepeta with flowers in a stalked interrupted spike).

An Italian city named Nepi, Nepet, or Nepete that was well-known for having a "catnip" plant with a less aromatic/enticing scent could also be the source of nepeta. Finally Nepa is Latin for a water scorpion whose sting was treated by the Yellow Giant Hyssop may also play a as the species name.

Agastache scrophulariifloria's (Purple Giant Hyssop) other common names are Lavender Hyssop, Anise Hyssop, Prairie Hyssop, Horsemint, and one unusual moniker – Figwort/Pilewort. Figwort is from Old English words Fig meaning piles (hemorrhoids) and an Old English word wort meaning plant usually possessing medicinal usages – thus Figwort/Pilewort is a plant to treat hemorrhoids. (Several other plants may also go by Pilewort: fireweed (Erechtite hieraciifolia) and lesser celadine (Ranunculus ficaria). Purple Giant Hyssop specie's name scrophulariifolia is from two Latin words – scrofula (meaning swelling of the lymph nodes in the neck due to tuberculosis) and folia (meaning leaves). This plant was used to treat scrofula associated with tuberculosis. Scrophularia is a genus in the family Scrophulariaceae (Figwort family with 200 species) and both are also derived from the Latin word scrofula. Interestingly both these Agastaches, Yellow and Purple Giant Hyssops, have the previous binomial genus name of hysspus – Hyssopus nepetoides (L.) (1753) and Hyssopus scrophulariifolia Willd. (1801). – (Carl Ludwig Willdenow (1765-1812), a German botanist/taxonomist – a founder of Photogeography: Study of Geographic Distributions of plants).

In 1891 Otto Kuntze, ((1843-1907) a German botanist, placed the genus Hyssopus, whose plants are called Giant Hyssops or Hummingbird mints, into the genus Agastache (Clayton ex Gronovius) probably based on Agastache leaves being more of "catnip" leaf shape, structure, and aromatic scent. Controversy still exists and with DNA sampling/testing expect more taxonomic changes.

Both the Purple and Yellow Giant Hyssops have medicinal, horticultural, culinary, and other usages that are interchangeable among the species. China has used Giant Hyssops for several centuries. With some 30+ known compounds, the Purple and Yellow Giant Hyssops have demonstrated anti-viral, anti-polio, anti-cancer, antiseptic, anti-inflammatory, antifungal, antioxidant bioactivity. Usage in AIDS and hypertension have shown promise. Ongoing research continues. Use of oils of mints in general must be used judiciously and safely – even in low doses (2-3 drops) can cause seizures and other serious complications especially in younger children. One should always consult their doctor before trying any mint oil preparation. Use during pregnancy is not advised. Native Americans used Giant Hyssops leaves and flowers in teas to treat colds, ague, fever, colic, cough, worms, rheumatism, and as an expectorant and a carmiative (anti-flatulence). They used leaves/flowers in poultices for bruises, rashes, itching, stings, swelling, and as an astringent. Native Americans used conserves for migraines, seizures, and as a "calming" agent. The Meskwaki used a Giant Hyssop infusion as a diuretic and the Iroquois/Cherokee used it for poison ivy rash and itching. Agastache scrophulariifolia specifically was used for hemorrhoids.

Culinary usages include Giant Hyssops leaves/flowers in soothing, calming, aromatic teas, as potherbs in salads, and a seasoning agent in soups/stews and other meal preparations. Seeds were made into meal. Giant Hyssop honey was viewed as a special delicious treat.

Horticultural and manufacturing usages of Giant Hyssops revolve around their economic importance. Agastache nepetoides and A. scrophulariifolia plants, seeds, rootstocks, and their cultivars are sold by

nurseries and trade companies as ornamentals for landscaping, and as proven attractors for bees, butterflies, and hummingbirds so valuable for garden/crop pollination. The many pollinators are rewarded with the Hyssops rich nectar and pollen. Giant Hyssops are a favorite with beekeepers. Giant Hyssops combine/mix in nicely as companion plants to black-eyed susans (Rudbeckia), blazing stars (Liatris), and sunflowers (Heliathus). These tall beautiful native wildflowers provide valuable resources and aesthetic appeal to man and fauna.

Folklore practices concerning Giant Hyssops has dried plants hung in the home as having powers to drive out evil and negativity. Floriography has Agastache plants with symbolic meanings of cleanliness, holiness, healing powers, protection from evil, spiritual cleaning, and body-spirit protection.

Propagation of Giant Yellow and Purple Hyssops can be by seeds (after cold stratification), rhizomes, rootstocks, and spring cuttings. They can also self-pollinate which may explain their heterozygosity. Hyssops transplant readily in early stages. Seed dispersal is achieved by seed/nutlet eating birds as goldfinches, wrens, and sparrows. Wind may also disperse seeds by utilizing the hyssop seed's hairs as airfoils or as "feathers". Both Agastache nepetoides and scrophulariifolia are resistant to moderate drought and heat; tolerant of most soils except persistently wet habitats; and need full sun in warm climates (zones 3-6). Plants need limited competition especially from non-natives. Giant Hyssops are deer resistant and are not affected by the alleopathic capability of walnut trees. Agastaches are threatened by habitat loss, theft, extreme drought/heat, flooding, and natural succession. Giant Hyssops normally last 3-4 years.

Agastache nepetoides (Giant Yellow Hyssop) and A. scrophulariifolia (Giant Purple Hyssop) are two native Kentucky species that need our protection. These towering, robust, beautiful plants are not only aesthetic but useful to man and fauna. Look for Giant Hyssops in summer and fall. Marvel at their beauty and protect their habitats. One author caught up in Hyssops virtues/horticultural usages stated "A towering specimen in the shade garden, not for meek and mild. Do Not plant near mid/low height plants. Do plant near that jackass neighbor"!! I'll end this paper on this whimsical thought provoking statement.

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AGASTACHE nepetoides – Yellow Giant Hyssop

AGASTACHE scrophulariifolia

Purple Giant Hyssop