TWO NEW VARIETIES OF ACER RUBRUM L.*

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That the species of Acer are very variable is well known and that the variability has long been recognized becomes evident on examination of Pax's admirable and exhaustive monograph of the Aceraceæ, Engler and Prantl Pflanzen Familien. I have, therefore, hesitated to present two additional varieties of Acer rubrum. However, these two trees are so unlike any others I have seen, so unlike herbarium specimens I have examined and do not conform to any descriptions given, that I feel justified in describing and naming them as new varieties. As Acer rubrum is dioecious the staminate trees cannot or have not been verified.

Acer rubrum L. **var. viride** n. var.

Leaves thin, distinctly green on both sides, glabrous, glaucous underneath with a few hairs on the veins, rather small, 5.5–7 cm. long, by 7–8 cm. broad across the apices of the lateral lobes, 3-lobed with two smaller lobes near the base, lobes acute, distinctly triangular, margin irregularly serrate, base subcordate. The unfolding leaves somewhat yellow but never red. Petioles 3–3.5 cm. long, slender, tinged with red. Twigs reddish gray, glabrous. Bud scales red, glabrous, with green pubescent margins. Flowers of carpellate tree with red calyx and corolla, red stamens, green carpels with red styles. Mature samaras distinctly green with no trace of red, glabrous, rather dull, 1.2–2 cm. broad, 2–2.5 cm. long; wings short, broad, strongly nerved, contiguous or slightly divergent, seed cavity large, 8 by 10 mm., full and plump. Fruiting pedicels green, stout, 2.5–4 cm. long. Staminate tree unknown.

The type tree is on Cranberry Island, Buckeye Lake, Licking County, Ohio. It is a young specimen, about 9.5 m. tall with smooth light gray bark. It is surrounded by other Red Maples.

Type specimen in herbarium of the Department of Botany, Ohio State University. Paratype in the national herbarium, Washington, D. C.

The most striking feature of the tree is its greenness. The leaves develop early from 1–2 weeks before those of surrounding trees and are green as soon as they unfold. The samaras are

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always green. The shape of the leaf resembles rather closely the more typical Red Maple leaf, but the Samaras in shape and color are quite unlike those of any other Red Maple.

Acer rubrum L. **var. rubro carpum** n. var.

Leaves large, 8–9 cm. long, 9–10 cm. broad across the apices of the lateral lobes, firm, green with red veins, glabrous above, glaucous underneath with cobwebby golden hairs on the veins; the three main lobes are broad, blunt, the terminal one oblong with distinctly parallel sides, each lobe is lobed again; margin sparingly dentate, teeth large; base of leaf subcordate with shallow sinus, almost truncate. Petioles red, stout, 6–7.5 cm. long. Unfolding leaves deep red, lower surface densely covered with reddish golden hairs. Bud scales deep red, margin lighter, covered with long interwoven golden hairs. One year old twigs red, glabrous, older ones reddish gray. Flowers of carpellate tree with brilliant rose calyx and corolla; stamens apparently fully developed, deep red, carpels with deep red ovularies and styles. Mature samaras glabrous, shining, deep purple red, with no trace of green; wings 2–2.5 cm. long, slender, straight, widely divergent, broadest at tip; seed cavity small and slender, 6–7 mm. by 4–5 mm. Fruiting pedicels 3–5 cm. long, very slender, deep red. Staminate tree unkown.

The stamens in the carpellate flowers contained apparently fully developed pollen, but it failed to germinate. Tree young, 8 m. tall, slender; bark smooth light gray. The leaves unfold later than those of the new variety *viride*, as can be seen by comparing the photos, both of which were taken May 11, 1918.

The deep red of the buds, young twigs, flowers, mature fruit and unfolding leaves make this tree conspicuous even among Red Maples. In general, proximity to the water on Cranberry Island causes a marked increase in anthocyan; but this tree stands quite near the center of the Island and is easily the reddest of all the trees.

The broad firm leaves resemble those of *A. drummondii*, but the samaras are entirely different.

Type tree Cranberry Island, Buckeye Lake, Ohio.

Type specimens in the herbarium of the Department of Botany, Ohio State University.

Paratype specimens in the national herbarium, Washington, D. C.

In order to show the characters which distinguish the above described varieties of Acer rubrum from the other species which most closely resemble them I append a key to the species of Engler and Prantle's section *Rubra* occurring in the United States.

KEY TO THE SECTION RUBRA OF THE GENUS ACER IN THE UNITED STATES.

Leaves simple, palmately lobed; flowers in lateral umbels opening before the leaves.

1. Petals absent; ovulary tomentose; samaras 5 cm. long or longer..... *A. saccharinum.*
1. Petals present; ovulary glabrous; samaras from 2–7.5 cm. long.....2
2. Samaras 4 cm. or more long; leaves large, firm, white tomentose beneath. ..... *A. drummondii.*
2. Samaras less than 4 cm. long; leaves pale or white glaucous underneath, sometimes pubescent on the veins.....3.
3. Leaves prevailingly 3-lobed, tips of lateral lobes curve forward; blade more or less pubescent underneath..... *A. carolinianum.*
3. Leaves prevailingly though not conspicuously 5-lobed, glabrous or glaucous beneath.....4.
4. Mature samaras shining, deep purple red, slender wings widely divergent more than 90°; leaves firm, veins and petioles dark red..... ..... *A. rubrum var rubro carpum.*
4. Mature samaras green or yellow sometimes tinged but never wholly red; leaves variable.....5.
5. Leaves and samaras green through all stages of development; samara short and broad, wings straight, broad, contiguous or nearly so; seed cavity broad and bulging..... *A. rubrum var viride.*
5. Leaves and samaras more or less red; wings of samara always diverging, sometimes in curved, seed cavity slender.....6.
6. Samaras very small 2 cm. long strongly nerved..... *A. stenocarpum.*
6. Samaras more than 2 cm. long, not strongly nerved..... *A. rubrum.*

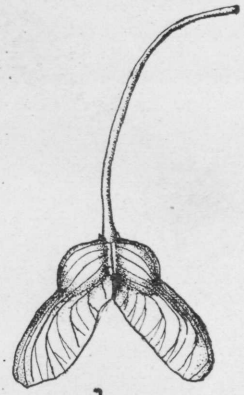
EXPLANATION OF PLATES.

PLATE XII. *Acer rubrum* L. var. *viride* n. var.

Fig. 1. Mature samara. (Nat. size), collected May 18, 1917.
Fig. 2. Young leaf. (Nat. size), showing size and condition of leaves at the time when the fruit is mature. May 18, 1917.
Fig. 3. Mature leaf. (Nat. size), collected August 9, 1917.
Fig. 4. Photograph of the tree. May 11, 1918.

PLATE XIII. *Acer rubrum* L. var. *rubrocarpum* n. var.

Fig. 1. Mature leaf. (Nat. size), collected August 9, 1917.
Fig. 2. Mature samara. (Nat. size), collected May 18, 1917.
Fig. 3. Young leaf, (Nat. size), showing size and very tomatose under surface of leaf at the time when the fruit is mature.
Fig. 4. Photograph of the tree, May 11, 1918.



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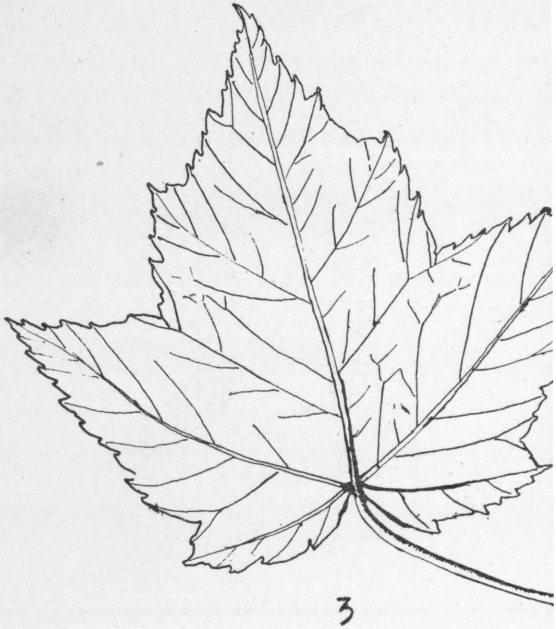

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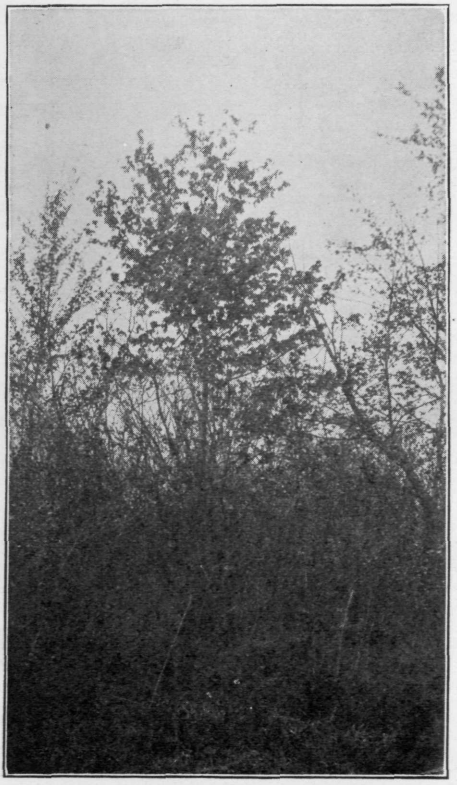

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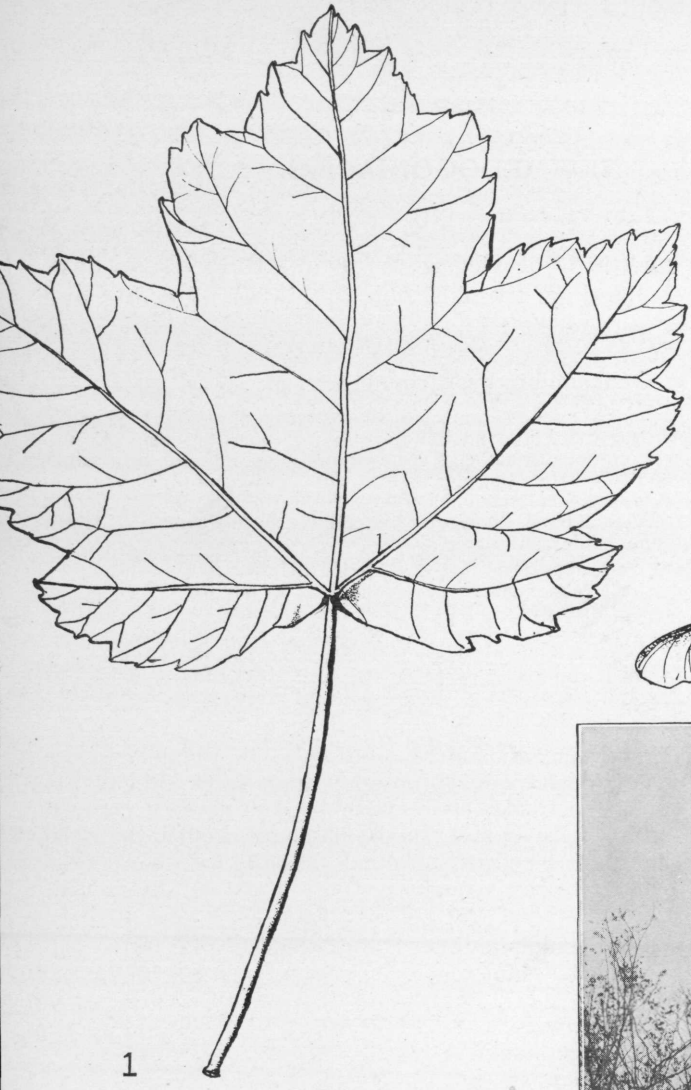

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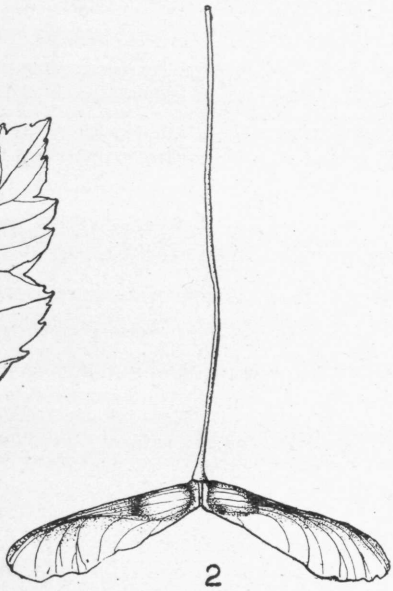

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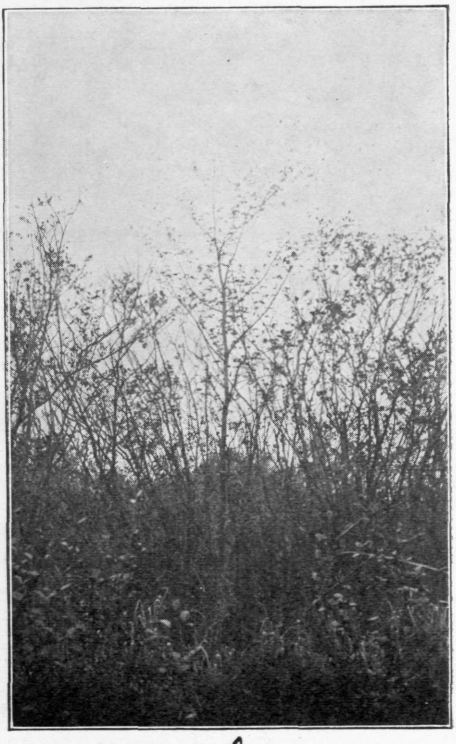

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