ARNOLD ARBORETUM
HARVARD UNIVERSITY

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HAMAMELIS VERNALIS SARG. THE OZARK WITCH-HAZEL. WITH 1934, the Ozark witch-hazel may be said to have reached its majority as a cultivated shrub; it was just 21 years ago this winter that it flowered for the first time at the Arnold Arboretum. As early as 1845 the Saint Louis botanist, Dr. George Engelmann, had found it growing along the upper reaches of the Meramec River but not until 1911 did Professor Sargent call it to public attention by recognizing it as a distinct species. Young plants were brought on from Missouri and in January 1913 they blossomed for the first time. This year, as every year, their tawny blossoms have made a good showing on bright sunny days during the winter and on one bush or another there was almost continuous bloom from Christmas until Easter.

Hamamelis vernalis has a curious method of accomodating itself to this unusual blooming season. Each flower has four strap-shaped petals which in color and texture remind one of tiny shavings from the outer rind of an orange. In the bud each little petal is rolled in toward the center. When the bud opens the petals roll out, something like opening fern fronds. In the witch-hazel this process is reversible and if the weather turns cold (as it usually does) the little petals roll back again. It is a surprising experience to visit the same bushes on successive days during the winter. One day will be warm and sunny and there will be quite an array of bloom. If the next day is cold and cloudy only in the very center of the buds can one catch sight of the bright little petals which were displayed so attractively the day before. When another warm spell arrives, back roll the petals and the bushes are in flower again.

In its native home in the Ozark mountains, *Hamamelis vernalis* is a glorious sight when in full bloom. Unlike our New England witch-hazel it forms dense thickets, confining itself very largely to gravelly banks

and beds of creeks and small rivers. Seen close at hand, the flowers are clear and bright and though small are borne in great abundance. On any one bush the color is much the same but from bush to bush there is great variation in the color of the flowers. The underlying tone is pale yellow varying from lemon in the petals to a dull greenish gold in the sepals. This is overlaid in varying amounts by a clear dark red; "dragon's blood red" is the technical name for the exact color. Occasionally there are bushes of a clear green gold throughout, with no trace of red; at the other extreme are those bushes whose petals and sepals are completely suffused with red, leaving only the very tips of the petals to display the underlying yellow. Between these two extremes are many intermediates, the commonest form being one in which the green gold sepals bear a red line down the center and the petals are flushed with red at the base. Though almost brilliant when seen close at hand in the bright sunlight, these varying reds and golds fade into one another at a little distance producing a tawny blend which is similar to the rich tones of a turkish rug. The general effect of the bushes is made even more sombre by the dead leaves of the previous year. In the Ozark witch-hazel they persist well into the winter, much as do oak leaves. Thus a river thicket of witch-hazels is already rusty brown before the flowers appear.

The fragrance of the flowers is as surprising as the date of their appearance. While often compared to that of grapes, it is even closer to the odor of a Vanda orchid. It has not only the rich, heavy fragrance of the ripening grapes, but in addition an overtone which is almost spicy, a sort of nutmeg odor. Only on the warmest February days can it be detected out-of-doors in New England, but in the Ozarks where the weather is somewhat warmer, it is often given off in great abundance. To find this rich tropical perfume on a winter's day is a surprising experience. Though the temperature is above freezing and the sun is bright, the wind is raw and cold and the woods are bare. Across the muddy wheat field, a quarter of a mile or more away, a tawny line in the landscape shows where the Ozark witch-hazels are growing along the creek. Yet so heavy is the perfume and in such abundance is it produced that the whole field is flooded with its tropical fragrance.

While *Hamamelis vernalis* seems to be the most dependable species for winter blossom in New England gardens, all members of this interesting genus have a tendency towards winter-flowering. Our common eastern witch-hazel, *Hamamelis virginiana*, flowers late in the autumn just as the leaves are falling and bushes will occasionally be found in bloom as late as December. The Japanese witch-hazel,

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Hamamelis japonica, flowers at the Arnold Arboretum in the very early spring. The most conspicuous species of all is *Hamamelis mollis*, the Chinese witch-hazel. It is a lovely sight when in full flower for the petals are very large and the yellow is clear and bright. Unfortunately, with us it has proved to be a somewhat fickle prima donna. None of the bushes at the Arnold Arboretum flowers regularly every year and some of them have never given a really fine show of blossoms.

Though its flowers are much smaller, the Ozark witch-hazel blossoms regularly in the Arnold Arboretum; each bush is well covered with flowers every year. So reliably does it bloom that in France it has been used as a potted shrub for flowering indoors, grafted on stock of *Hamamelis virginiana*. Such grafting can also be resorted to if one wishes a specimen with a single stem, since *H. virginiana* does not sucker from the root as vigorously as does *H. vernalis*. For the ordinary shrub garden this latter habit is really an asset since it produces a dense head of flowering branches and if one stem dies there are others to replace it. In such plantings *Hamamelis vernalis* is most effective if several different bushes are used. The variation in flowering date will insure a longer flowering season and the mingled reds and yellows will produce a richer effect in the landscape.

Hamamelis vernalis does not seem to exhibit any marked soil preferences. In Missouri it is usually found in coarse river gravel on the banks of small streams, or like alders forming thickets in the stream bed itself. At the Arnold Arboretum it is doing well in several situations all of which are well drained. Surprisingly enough it takes kindly to city conditions and has flowered regularly in shady and smoky city gardens. Heavy shade is scarcely to be recommended, however, since the natural habitat of the species is in full sun or partial shade.

Though its general landscape effect seldom exceeds a rich tawny smudge of color, *Hamamelis vernalis* has many qualities which merit a greater recognition. It has clean, attractive foliage and its curious flowers are fragrant and decorative when brought indoors. Certainly any shrub which blossomed faithfully out-of-doors through the entire winter of 1933-34 is worth knowing, if for no other reason.

EDGAR ANDERSON

EXPLANATION OF THE PLATES

Page 3. **Hamamelis vernalis** Sarg.
(From drawings by C. E. Faxon for Sargent's "Trees and Shrubs.")

Insert. Flowering branches of **H. vernalis.**
(Photographed in the Arnold Arboretum, March 1934.)