

## Variations in *Anemone nemorosa*.

BY

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With three Figures in the Text.

FOR several years past the writer has been engaged in the study of Hertfordshire woodlands in which the Wood Anemone is a conspicuous and abundant member of the ground flora. An exceptional opportunity has therefore been afforded of studying the variation to which this species is subject, two striking forms having been encountered.

The type form of the species shows great variation in the degree of hairiness and width of the involucre segments, a statement that is also true of the foliage of the non-flowering shoots. As has been shown by Yule ('Variation in the Number of Sepals of *Anemone nemorosa*,' *Biometrika*, 1902) the number of perianth-segments is by no means constant, ranging from five to ten. In general, however, the most prevalent condition is a perianth of six members in two alternating whorls. Two extreme shapes of perianth-segments can be recognized, both of which agree in the fact that they taper towards the apex and attain their maximum width *below* the middle. In the one form the perianth-members are narrow, more or less lanceolate, and taper very pronouncedly both towards the base and apex, so that the adjacent members, except at the base, scarcely overlap. This flower-type is usually found associated with narrow-leaf and involucre segments. At the other extreme the perianth-segments are broader, ovate in form, and with a rounded base. The flower of this latter type is, as a whole, consequently much more cup-like in appearance, due to the greater overlap of adjacent perianth-members. With this type is usually associated an involucre in which the segments are much broader.

In both types the crenulations of the perianth-margin may be obscure or very pronounced. The indentation of the margin may indeed be regarded as an undeveloped form of lobing, and such a view is in harmony with the occasional record of specimens in which the perianth-segments assume a definitely laciniate form (cf. Pryor's 'Flora of Hertfordshire',



p. 2, London, 1887). One specimen of *Anemone nemorosa* which the writer transferred to his garden produced for several years flowers in which one or more members of the outer whorl of the perianth were green and lobed in a manner similar to that of the involucral leaves (Fig. 1). In colour the flowers exhibit all gradations from white to purple, but the deep-coloured forms appear to be definitely associated with certain localities (var. *purpurea*, D.C., Fl. Fr., ed. 3, vol. iv, p. 635, 1815). Var. *caerulea*, D.C. (loc. cit.), with pale blue flowers has not been met with.

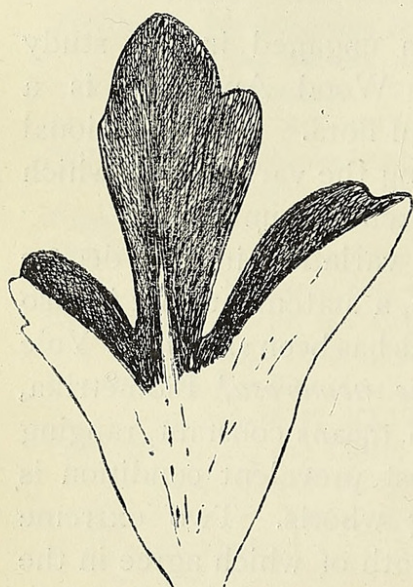


FIG. 1. Perianth segment of abnormal flower. The green parts are shown shaded.



FIG. 2. *Anemone nemorosa*, var. *robusta*.  $\times \frac{2}{3}$ .

Two varieties have been encountered in Hertfordshire which from their constant and distinctive characters appear to merit detailed description. For the first of these we propose the name of var. *robusta* (Fig. 2), in virtue of its most salient feature, namely the large size of its parts. Up to the present this has been encountered in one locality only, namely Stocking's Wood, near Harpenden, where it grows in association with the normal type. The characters of this variety are tabulated below, side by side with the corresponding ones of the largest specimens obtainable from the same locality of the normal type, which we can distinguish as var. *genuina*.



	<i>A. nemorosa</i> , var. <i>genuina</i> .	<i>A. nemorosa</i> , var. <i>robusta</i> .
<i>Vegetative organs</i> —		
Colour . . . . .	Green.	Pale green.
Average diameter of rhizome . . . .	4 mm.	5.5 mm.
Average spread of involucre . . . .	100 mm.	125 mm.
Width of sheathing-base of involucral leaves . . . . .	3-3.5 mm.	5-7 mm.
Diameter of inflorescence axis . . . .	2 mm.	3.5 mm.
Leaves . . . . .	Under surface dull.	Under surface glossy.
Hairs . . . . .	Sparse to numerous.	Numerous.
<i>Reproductive organs</i> —		
Diameter of flower . . . . .	To 40 mm.	40 mm.
Length of petals . . . . .	19-20 mm.	18-19 mm.
Maximum width of petals . . . . .	8-11 mm.	11-12 mm.
Form of petals . . . . .	Tapering towards apex. Rounded or tapering towards base.	Rounded at apex. Rounded at base.
Margin of petals . . . . .	Broadest below middle. Slightly crenate.	Broadest above middle. Slightly crenate.
Average length of anthers . . . . .	1 mm.	1.5 mm.
Carpels . . . . .	Pubescent.	Densely pubescent.

It will be seen from this comparison that, quite apart from the more robust character of the vegetative organs (in which respect this variety agrees with *y grandiflora* of Rouy et Foucaud, 'Fl. de France,' p. 44, 1893), the flowers are distinguished from those of the common form by the fact

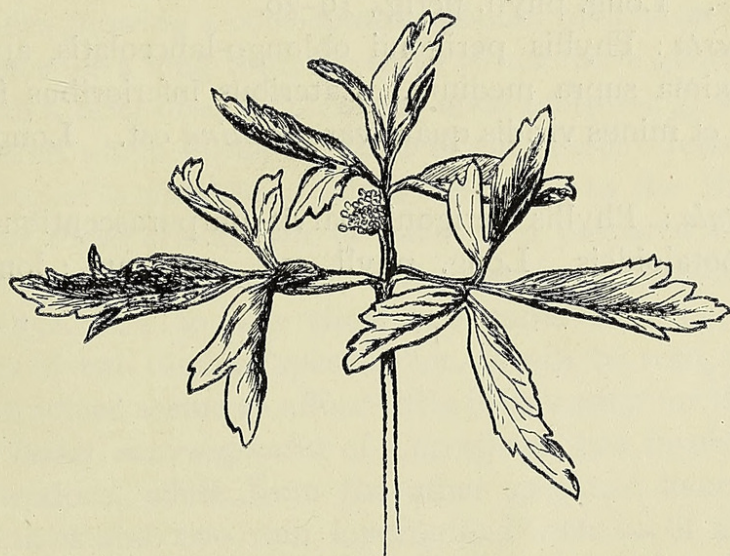


FIG. 3. *Anemone nemorosa*, var. *apetalata*.  $\times \frac{2}{3}$ .

that the perianth-segments are broadest above the middle and are rounded towards the apex. Rouy et Foucaud (loc. cit.) do not state the form of the perianth-segments in var. *grandiflora*, but the large size of the flowers of this variety, up to 7 cm., would appear to indicate that our variety is distinct.

A second type, which appears to be worthy of varietal rank, usually bears inconspicuous flowers and may be termed var. *apetalata* (Fig. 3). This bears much the same relation to the normal form as *Ranunculus auricomus*, var. *depauperata*, to *Ranunculus auricomus* itself. It is interesting



to note that in the case of both these species the imperfect-flowered variety is usually associated with the more deeply shaded situations. However, the fact that the apetalous character is maintained after the wood in which this variety grows has been coppiced indicates that the characters of its floral organs are not a mere effect of inadequate illumination. The perianth-segments are usually small, six in number, and arranged in two alternating whorls. Most commonly all six are small purplish-green structures of which the outer are the larger (3 to 4 mm. long) and the inner slightly smaller (2 to 3 mm. long). Rarely one to three of the outer segments may be white and petaloid, but the maximum size which these have been observed to attain is 8 mm. in length by 5 mm. in width. In only one instance has a flower of this variety been found in which the inner whorl exhibited petaloidy, and in that case one member only was involved. This variety has been observed in several of the Oak-Hornbeam woods of Hertfordshire, and I have in my possession specimens given me by Mr. W. C. Worsdell which grew at Carnforth, Westmorland.

A short diagnosis of the varieties mentioned is appended:

Var. *genuina*: Phyllis perigonii elliptico-lanceolatis aut ovatis, apicibus acutis, latitudine maxima infra medium. Lateribus inferioribus foliorum non nitentibus. Long. phyll. perig., 19–20.

Var. *robusta*: Phyllis perigonii oblongo-lanceolatis, apicibus obtusis, latitudine maxima supra medium. Lateribus inferioribus foliorum nitentibus. Maior et minus viridis quam var. *genuina* est. Long. phyll. perig., 18–19 mm.

Var. *apetala*: Phyllis perigonii parvis purpurascens, vel 1–3 externis albis, petaloideis. Long. phyll. ext., 3–4 mm.; long. phyll. int., 2–3 mm.



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