

geographic segregation. 36 series of the European plant (typical *L. alpina*), including 130 plants, and 64 series, including 175 plants, of var. *americana* give the following results.

Var. TYPICA

Radical leaves 1-3.5 cm. long, 2-5 mm. broad; cauline leaves 2-4 pairs, the larger leaves 1-3 cm. long and 2-5 mm. broad; calyx during anthesis 3-5 mm. long; petals (including claw) 6-8 (rarely -9) mm. long, 3-3.5 (-4) mm. broad.

Var. AMERICANA

Radical leaves thicker and firmer, 1.5-6.5 cm. long, 2-8 mm. broad; cauline leaves 3-7 pairs, the larger leaves 1.5-5.5 cm. long and 2.5-10 mm. broad; calyx during anthesis 5-7 mm. long; petals (including claw) 8.5-14.5 mm. long, 3-6 mm. broad.

The stature is variable but the following comparison is illuminating. Of var. *typica* 38% of the plants are less than 1 dm. high, of var. *americana* only 13%. Of var. *typica* 39% are from 1-1.5 dm. high, of var. *americana* 29%. Of var. *typica* only 14% are from 1.5-2 dm. high, of var. *americana* 29%. Of var. *typica* only 7% of the plants are 2-3 dm. high, of var. *americana* 27%, while no plants seen by me of var. *typica* are more than 3 dm. high, but 2% of var. *americana* are 3-4 dm. high.

Similarly, all but a few of the plants of var. *typica* have the stem (dried) at most 2 mm. in diameter at the first cauline node; but most plants of var. *americana* have the stems 2-4 mm. in diameter.

SILENE CAROLINIANA Walt., var. **pensylvanica** (Michx.), comb. nov. *S. pensylvanica* Michx. Fl. Bor.-Am. i. 272 (1803). *S. caroliniana*, subsp. *pensylvanica* (Michx.) Clausen in RHODORA, xli. 580 (1939).

S. CAROLINIANA Walt., var. **Wherryi** (Small) comb. nov. *S. Wherryi* Small in Torreya, xxvi. 66 (1926). *S. caroliniana*, subsp. *Wherryi* (Small) Clausen, l. c. 582 (1939).

WHAT IS *ACTAEA ALBA*? (PLATE 604). Two clearly defined species of *Actaea* occur in the northeastern states and southern Canada. They are distinguished as follows.

1. *A. ALBA* Bigel. in Eaton, Man. ed. 2: 123 (1818) and Fl. Bost. ed. 2: 211 (1824); Hook. Fl. Bor.-Am. i. 27 (1829); Torr. & Gray, Fl. N. Am. i. 35 (1838); and Gray, Britton, Robinson & Fernald and most subsequent authors; not *A. alba* Mill. Diet. ed. 8, no. 2 (1768) nor *A. spicata*, β . *alba* L. Sp. Pl. 504 (1753) nor, nomenclaturally at least, the following, resting upon the latter names: *A. americana* Pursh, α . *alba* Pursh, Fl. Am. Sept. ii. 366



Photo. W. H. Hodge.

ACTAEA PACHYPODA: FIG. 1. fruiting raceme (dried), $\times 1$, from Nova Scotia.
A. RUBRA, forma NEGLECTA: FIG. 2. fruiting raceme (dried), $\times 1$, from Vermont.



Photo. W. H. Hodge.

RORIPPA ISLANDICA, var. *MICROCARPA*: FIG. 1, ISOTYPE of *Nasturtium palustre*, var. *microcarpum*, $\times 1$, from Amur (2 plants); FIG. 2, fruiting raceme of isotype of *R. islandica*, var. *Fernaldiana*, $\times 1$, from Maine.

Var. *HISPIDA*: FIG. 3, siliques, $\times 5$, from Idaho, of Nelson & Macbride, no. 1318, distributed as *R. terrestris globosa* Nelson and cited by Butters & Abbe as *R. islandica*, var. *glabrata*; FIG. 4, siliques, $\times 5$, from New York; FIG. 5, silique, $\times 5$, from New Mexico, of Heller & Heller, no. 3743, cited by Butters & Abbe as *R. islandica*, var. *glabrata*; FIG. 6, tetracarpellate silique, $\times 5$, from Saguenay Co., Quebec; FIG. 7, silique, $\times 5$, from Lake St. John, Quebec; FIG. 8, young tri- or tetracarpellate silique, $\times 5$, from Rhode Island.

R. BARBAREAEFOLIA: FIG. 9, raceme, $\times 1$, of authentic specimen from Amur.

(1814) and *A. brachypetala* DC., α . *alba* DC. Syst. i. 385 (1817). *A. pachypoda* Ell. Sk. ii. 15 (1821); Mackenzie in Torrey, xxviii. 53 (1928). *A. brachypoda* Rydb. Fl. Pr. Pl. 345 (1932), ascribed to Elliott and obviously an error for *A. pachypoda* Ell. —Pedicels in fruit becoming relatively thick, red or reddish; petals slender, mostly truncate; stigma during anthesis broadly sessile; fruits white, capped by the broad sessile purple stigma (whence the colloquial name DOLL'S EYES); seeds (3-) 5-10, 4-5 mm. long. PLATE 604, FIG. 1.

A form of *A. "alba,"* as above defined, has dark-red fruits. This is

A. ALBA, forma *RUBROCARPA* Killip in House, N. Y. State Mus. Bull. 243-244: 40 (1923).

It seems to be an extreme with darker fruits than in *A. brachypetala* DC., δ *microcarpa* DC. Syst. i. 385 (1817), described from near Boston with "baccis parvis albis subrubellis, pediculis incrassatis."

2. *A. RUBRA* (Ait.) Willd. Enum. 561 (1809) and most subsequent authors. *A. spicata*, γ . *rubra* Ait. Hort. Kew. ii. 221 (1789) and many later authors. *A. americana* Pursh and β . *rubra* Pursh, Fl. Am. Sept. ii. 366, 367 (1814). *A. brachypetala* DC., β . *rubra* DC. Syst. i. 385 (1817). *A. longipes* Spach, Hist. Veg. vii. 388 (1839). —Pedicels filiform; petals rhombic-spatulate, tapering to tip; stigma during anthesis slightly elevated above summit of ovary, in fruit contracted and relatively inconspicuous; fruit cherry-red; seeds 10-16, 3-4 mm. long.

The form with white fruits is

A. RUBRA, forma *NEGLECTA* (Gillman) Robinson in *RHODORA*, x. 66 (1908). *A. neglecta* Gillman in Lloyd, Drugs and Medicines, 235 (1884-5). *A. eburnea* Rydb. Mem. N. Y. Bot. Gard. i. 153 (1900). *A. alba* sensu Mackenzie in Torrey, xxviii. 53 (1928) and sensu Rydb. Fl. Pr. Pl. 345 (1932); not Miller nor Bigelow. PLATE 604, FIG. 2.

That species nos. 1 and 2 are wholly distinct everyone agrees. No. 1, our *Actaea "alba"* (PLATE 604, FIG. 1), is essentially southern, reaching Georgia, Louisiana and Oklahoma at the south and merely entering the southernmost borders of Canada; no. 2, our *A. rubra*, is northern, extending from Labrador to interior Alaska, becoming rare so far south as southern New England, northern New Jersey, southern New York, and westward into the Rocky Mountains. Until Mackenzie positively asserted that the Cornut

plate (which started the name *A. alba* as used unequivocally for a century and three-fourths) was based upon the white-fruited form (forma *neglecta*) of *A. rubra* (PLATE 604, FIG. 2), everything was clear. Now, however, since Mackenzie's assertion (his pp. 52 and 53) that Cornut "very accurately figured" "our baneberry with slender pedicels," our *A. rubra*, forma *neglecta*, and that the latter "should be known by that name [*A. alba*], and . . . the ordinary red-fruited plant should be known as a form," the clarity of the past has suddenly been clouded. Rydberg promptly accepted Mackenzie's unqualified verdict; but, had he taken pains to look up the "very accurate" plate of Cornut, he would have found the fruiting raceme very far from convincing for any form of *A. rubra*, for the latter has the divergent filiform fruiting pedicels (FIG. 2) 1–2.5 cm. long. It is at least diverting that Mackenzie, apparently alarmed at the changes he was proposing, seems not to have been so uncompromisingly literal as in some of his other interpretations, when he proposed and chose a second alternative. Dismissing the plant with thick pedicels (PL. 604, FIG. 1) to which the name *A. alba* had previously been most applied and asserting without qualification that the Cornut plate (our p. 265, FIG. 1) is a "very accurate figure" of the white-fruited plant with slender divergent pedicels, *A. rubra* forma *neglecta* PL. 604, FIG. 2), he forthwith said:

"On the other hand, one can follow nature [as if the abundant white fruits are not natural!] and say that the red-fruited plant is undoubtedly the specific type, and that the first name applied to it (*Actaea rubra*) should be adopted, although published after *Actaea alba*. In this case one would treat the plant of Linnaeus [*A. spicata*, β . *alba* L., based on the Cornut plate] and of Miller [*A. alba* Mill. (1768)] as a form of *Actaea rubra* [*A. rubra* (Ait.) Willd. (1809)]." And he concluded: "My own preference is for the second course here indicated"!

Rydberg, although accepting the name *Actaea alba* for the plant with white fruits on slender pedicels, did not follow Mackenzie's preference to treat it as a form of the later-published *A. rubra*. He maintained them both as species, one with the white fruit "9–12 mm. long" and with seeds "about 4 mm. long," the other with red fruit "10–12 mm. long" and seeds

"about 3 mm. long." Measurement of many seeds of each series shows them all the way from 3 to 4 mm. in length.

The whole difficulty arose from misunderstanding from the first of Cornut's plate, Cornut, Can. Pl. t. 77 (our p. 265, FIG. 1), which, as emphasized, Mackenzie considered as a "very accurate" figure of *Actaea rubra*, forma *neglecta* (PL. 604, FIG. 2). In publishing *A. spicata*, β . *alba* in 1753 Linnaeus rested the variety, without new description, wholly on the plate of Cornut (our p. 265, FIG. 1) and upon the figure in Morison's *Historia*, ii. fol. 1, t. 2, fig. 7 (our p. 265, FIG. 2), which was obviously copied directly from Cornut. In publishing *A. alba* in 1768 Miller gave the briefest of diagnoses and cited Morison (therefore by inference Cornut). Linnaeus had no material and Mackenzie states that there is nothing preserved to stand for Miller's plant. We, therefore, get back, automatically, to the Cornut plant (our p. 265, FIG. 1) as the only clear basis for *A. alba*; and that that is *not* a clear basis for any American species is apparent. The first definite differentiation of our two species was by Jacob Bigelow, first in Eaton's *Manual* (1818), later and very completely in *Florula Bostoniensis*, ed. 2 (1824). That *A. alba* sensu Bigelow and later authors was also *A. pachypoda* Ell. everyone has recognized; but the interpretation by Mackenzie and, following him, by Rydberg, that *A. alba*, as typified by the Cornut plate, is the slender-pedicelled *A. rubra*, forma *neglecta* (PL. 604, FIG. 2) is unique.

Cornut's *Canadensium Plantarum Historia* (1635) had an unfortunately misleading title, for, as repeatedly pointed out, it contains many plants which, at that date, had surely never seen Canada. Some, as indicated in the text, were admittedly not Canadian (*Bugula odorata lusitanica*, *Cyclamen orientale*, *Arundo indica*, etc.); others were wrongly supposed to be Canadian. To the latter group belongs, I think, the illustration of *Aconitum baccis niveis* [et *rubris*] which was the basis of *Actaea spicata*, β . *alba* L. and the only identifiable basis of *Actaea alba* Mill. Mackenzie (l. c. 53) had no doubt of the identity of Cornut's fruiting raceme with the American *A. rubra*, forma *neglecta*, saying: "Both the illustration by Cornut and the illustration by Morison represent a plant with slender pedicels and having an ovoid raceme and ovoid or ellipsoid berries. The



Fernald, Merritt Lyndon. 1940. "What is Actaea alba?" *Rhodora* 42, 260–265.

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