

On Witches'-Broom of *Pyrus japonica*.

BY

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With Plates IV. and V.

The peculiar hypertrophy of branches known as "witches'-broom" is not of uncommon occurrence on various members of the Rosaceæ, although the deformation is by no means peculiar to this family, but is to be observed frequently on various other broad-leaved trees and on Coniferae. As a general rule the buds of the "witches'-broom" unfold in spring in advance of the buds of the normal twigs, but, as Dr. W. G. Smith* points out, the "witches'-broom" of *Alnus* is exceptional—its buds opening after those of the normal twigs.

The figures accompanying this note show a fine "witches'-broom" on a bush of *Pyrus japonica* growing in the Royal Botanic Garden, Edinburgh. Plate IV., fig. *b*, is from a photograph taken in October, 1902, and it shows the "broom" with the leaves still on it, while the rest of the bush is practically leafless. Plate IV., fig. *a*, is from a photograph taken a month later, and shows the "broom" as well as the bush in an almost leafless condition. Unfortunately, gales during the winter broke off the largest part of the "broom," leaving only a small portion still attached, and this is shown in Plate V., fig. *c*, from a photograph taken in February, 1903.

At the date of this photograph the plant had a very good covering of young green leaves and flowers, but the "broom" showed not only no signs of leaves, but no bud-activity whatever,

*W. G. Smith, Untersuchungen d. Anat. u. Morph. der durch Exoasceen verursachten Deformationen. Inaug. Diss., Munich, 1894, p. 16.

although its tissues were still alive. Plate V., fig. *d*, illustrates this—the “broom” is visible in the lower right-hand corner.

The branches of the “broom” of this *Pyrus* are much thicker and more succulent than the normal ones of the plant; they are also of a light yellow-brown colour and covered with a dense felty pubescence contrasting markedly with the thinner dark blackish-brown glabrous normal shoots.

Another interesting abnormality in the “broom” is the entire absence of spines, which are everywhere well developed on the normal shoots of the plant.

As yet no fructifications of a fungus have been detected, but microscopic examination shows abundant mycelium in the tissues.

The “broom” will be kept under observation, and the subsequent history of its vegetative activity, together with any microscopic details which may be of interest, will be recorded in a subsequent paper.

Since the above was written Dr. Solereder has published in the “Naturwissenschaftliche Zeitschrift” for January, 1905, a list of species of trees upon which witches'-broom has been observed. To his list *Pyrus japonica* is an addition, as are also the following species, about which I shall say something in a subsequent note:—*Æsculus Hippocastanum*, *Myrsine africana*, *Quercus Cerris*, *Ribes alpinum*, *Ulmus montana*.

Explanation of the Figures in Plates IV. and V.

FIG. *a*.—Witches'-broom of *Pyrus japonica*. Both abnormal and normal twigs are leafless. From a photograph taken in November 1902.

FIG. *b*.—Witches'-broom of *Pyrus japonica*. The abnormal twigs are still producing young leaves. The normal shoots are almost leafless. From a photograph taken in October 1902.

FIG. *c*.—Witches'-broom of *Pyrus japonica*. The abnormal twigs show no signs of bud-activity. The normal shoots bear numerous young leaves and flower-buds. From a photograph taken in February 1903.

FIG. *d*.—Witches'-broom of *Pyrus japonica*. More of the normal twigs are shown with young leaves and flowers. The abnormal twigs at the lower right corner are leafless. From a photograph taken in February 1903.

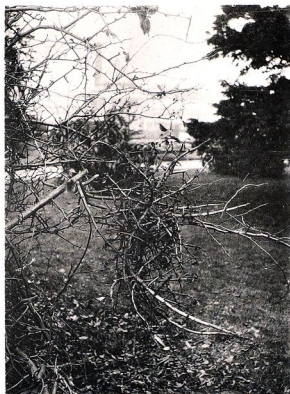


Fig. a.



Fig. b.

Witches'-Broom on *Pyrus japonica*.

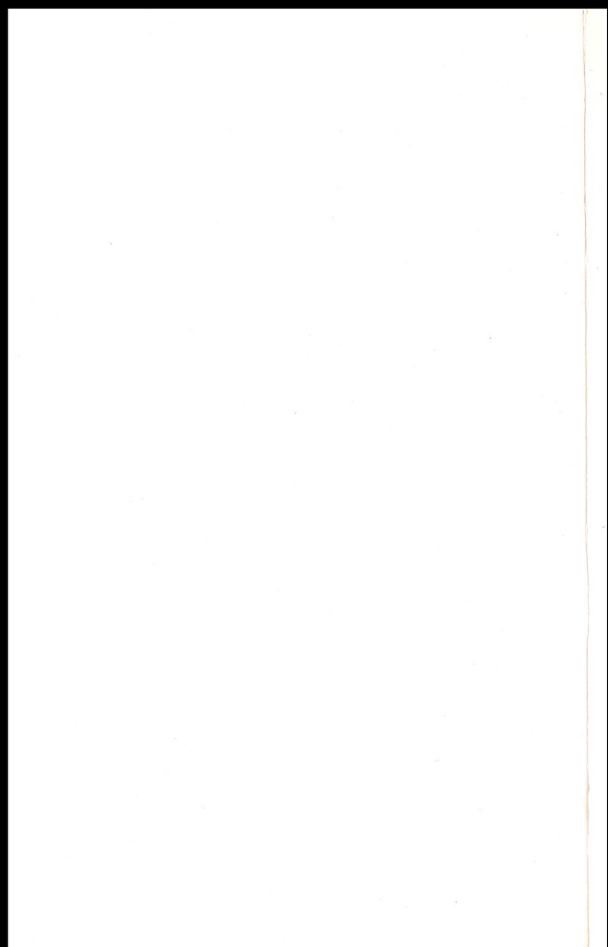




Fig. c.

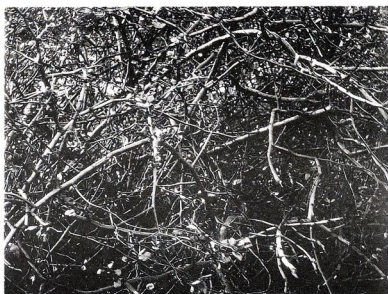


Fig. d.

Witches'-Broom on *Pyrus japonica*.

