

PHENOXY INDUCED FASCIATION

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In the December 1986 issue of *Blue Jay* Hruska discusses some unusual growth patterns in Black-eyed Susan (*Rudbeckia hirta*) and wonders if the cause is genetic or environmental. I would suggest that the clump of Black-eyed Susan which is illustrated has been hit by spray drift, most likely 2,4-D or MCPA.

Monstrous growths are usually either ascidate or cristate. An ascidate growth is one where the leaf or stem rolls up into a cylindrical form or terminates in a cup shape. Cristate growths are flattened, and result when the meristem or apex of the plant spreads out into a line instead of the usual pinpoint. Fasciation is illustrated in Fig. 1. The stem grows as a flat structure and often curves and twists in fantastic shapes.

Phenoxy herbicides such as 2,4-D or MCPA cause the target plants to grow themselves to death. The affected plants grow so fast that tissues and cells do not properly separate and develop as they

should. While it is possible for viruses or mycoplasmas to cause this effect numerous specimens analyzed in the past were always negative for microbes. On the other hand, some specimens were checked for 2,4-D and related phenoxy herbicides, and the presence of these chemicals was seen in trace quantities. The difficulty in finding the causal agent is that by the time most specimens are noted and collected the causal agent has disappeared through natural processes. A severe hit of phenoxy herbicide will kill a plant; a minor hit will not be noticed. In between there is a range of possibilities and the right concentration of spray drift can distort growth without actually killing the plant. This is particularly obvious in woody plants where normal growth suddenly alters to fasciated growth but returns to normal in the following season. A virus or mycoplasma would continue to affect the growth of subsequent years, but if only one year's growth is affected then the cause is most likely some chemical.

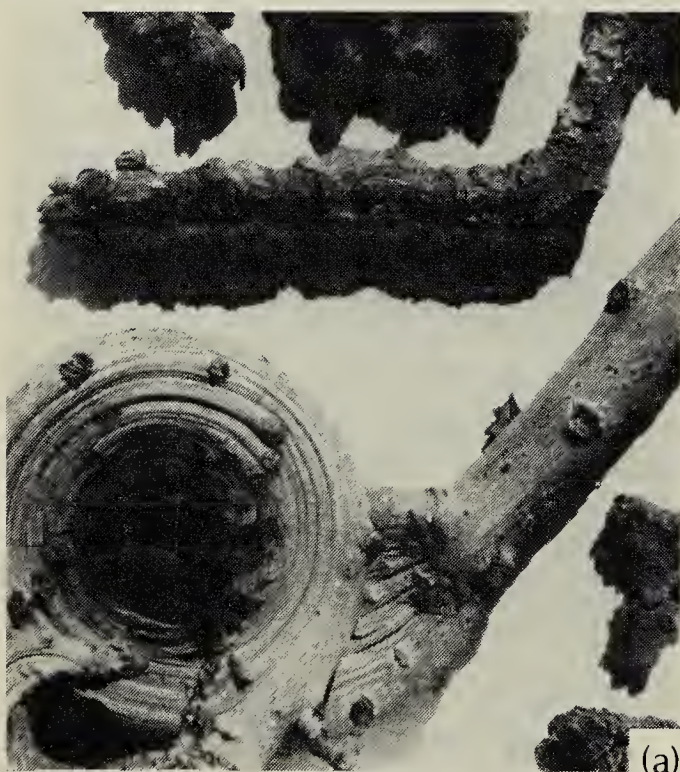


Figure 1. Fasciation on stems of (a) Green Ash and (b) lilac

THE STICKY GROUNDSEL AT THE PAS, MANITOBA

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In routine collecting along railway tracks over the past few years to monitor new plants arriving here the Sticky Groundsel (*Senecio viscosus* L.) was collected. It first appeared in the late 1970s in thousands along the railway track in gravel and cinders not far from the C.N.R. station.

It has decreased in numbers progressively over the past 9 years. Only four specimens were found in the gravel and cinders in 1986. It may prove to be a weed species that failed to survive its attempt at invading this area.

This plant occurs sparingly in Winnipeg along railway tracks near the Museum of Man and Nature and in the warehouse district of north end Winnipeg. Various Winnipeg records are preserved in the Krivda Herbarium at The Pas. This species makes its home in Eastern Europe — the Balkans, and was introduced into the warehouse district of Winnipeg many years ago. [*Flora Europaea*, Vol. 4, p. 204, gives its range "From the Netherlands and N.C. Russia southwards to C. Spain and Greece, but absent from most of the south-east; recently naturalized in parts of N. and W. Europe." — *Ed.*]

The appearance of Sticky Groundsel at The Pas was wholly unexpected. Its survival for almost 10 years was also a surprise. Our climate appears to be unsuited to it.

ADDENDUM: In 1987 hundreds of plants were again present. The long season enabled them to set seed. A collection of different growth stages was made. The Common Ragwort (*Senecio vulgaris*) grew with The Sticky Groundsel.

Possibly hybridization will occur. The Common Ragwort can be told from Sticky Groundsel by the hairy leaves of the latter. — W.K.

