

Clematis

Family: Ranunculaceae



Figure 105 *Clematis jackmanii*



Figure 106 *Clematis* species flower

Common Name

Clematis, virgin's bower, traveller's joy

Plant Description

Consisting of over 200 species, *Clematis* are common in temperate Asia, Europe, and North America. *Clematis* species are woody, deciduous or evergreen vines, that climb by means of their twisting leaf-stalk tendrils. The opposite leaves are simple, or compound, with entire or serrated margins. The flowers are produced either singly or in many flowered panicles, the petals are absent, and instead large showy sepals in colors ranging from white, greenish-white, purple, violet, red, or yellow are distinctive (Figures 105 and 106). The many stamens are prominent. The flowers are followed by masses of fluffy, silvery seed heads (Figure 107).

Toxic Principle and Mechanism of Action

Clematis species contain the irritant glycoside ranunculin that is converted to protoanemonin when the plant tissues are chewed and macerated.¹ Protoanemonin levels amongst the species vary, and appear to be low.² Protoanemonin is the vesicant, and it is polymerized to the non-toxic anemonin. The dried plant

contains mostly anemonin and is therefore not toxic.

Risk Assessment

Clematis are popular garden plants, but are not a significant problem to household pets as the bitter, irritant effects of the plants are a deterrent to most dogs and cats.

Clinical Signs

Excessive salivation, vomiting and diarrhea can be anticipated if *clematis* are eaten. Treatment in severe cases should include the use of oral activated charcoal (2-8 gm/kg body weight) as an adsorbent, cathartics and intravenous fluid therapy if the animal is severely dehydrated.

References

1. Hill R, Van Heyningen R: Ranunculin: the precursor of the vesicant substance I Buttercup. *Biochem J* 49: 332-335, 1951.
2. Bonora A, Dall'Olio G, Bruni A: Separation and quantification of protoanemonins in Ranunculaceae by normal and reversed phase HPLC. *Planta Med* 51: 364-36, 1985.



Figure 107 *Clematis* seed head

Clivia

Family: Liliaceae

Common Name

Kaffir lily

Plant Description

A genus of 4 species of perennial lilies native to southern Africa that are popular garden plants in tropical and sub-tropical areas, and as houseplants in temperate areas. Developing from thick rhizomatous roots, the dark green, long, strap-like leaves are attractive in themselves. The showy flowers are produced terminally on a slightly flattened stems in pale yellow or bright orange-red (Figures 108 and 109). Showy red berry-like fruits are conspicuous.

Toxic Principle and Mechanism of Action

Several phenanthridine alkaloids including lycorine, clivonine, clivatine, miniatine, and hippastrine have been identified in the leaves, stems, and bulbs of *Clivia* species.¹² The phenanthridine alkaloids are present in many of the Liliaceae, most notably in the *Narcissus* group.



Figure 108 *Clivia miniata*



Figure 109 *Clivia miniata alba*

