Clinical Importance/
Cutaneous Manifestations

*Agave americana*, the century plant, is best known for its tequilalike liquor extract called mescal. However, occupational or casual exposure to this “American aloe” can produce an immediate erythematous eruption, severe pruritus, and, in extreme cases, serious systemic reactions. After contact with causative plant parts, affected individuals often describe burning sensations of rapid onset that later evolve into prominent signs of erythema and edema. The clinical manifestations of *A americana*-induced dermatitis can vary greatly. Typically, patients demonstrate generalized pruritic vesiculopapular eruptions arranged in linear configurations.

Most naturally occurring skin reactions to *A americana* appear within several hours. However, experimentally induced responses via open patch tests can erupt within minutes of exposure. Follicularly accentuated contact urticaria, pruritic palpable purpura, and localized leukocytoclastic vasculitis occasionally have been reported (Figure 1). Severe cases of *A americana* dermatitis can be associated with systemic symptoms including fever, leukocytosis, headache, diarrhea, and myalgia. Other, more rare, associations include: contact conjunctivitis, gastrointestinal obstruction from phytobezoars, scalp dermatitis from hair-loss remedies containing Agave, and self-inflicted dermatitis in malingering soldiers.

Economically, the plant parts of *A americana* are used in the manufacturing of dish detergents, special twine called *sisal hemp*, and mescal. In addition, *A americana* extracts are often included in folk remedies for their diuretic and laxative properties, as treatments for rheumatism, as birth control steroid precursors, in toothache elixirs, for the extermination...
of termites, and in an ancient anxiolytic Aztec liquor called pulque.

**Family/Distribution of Plant**
The Agavaceae family is a large, long-living flora, containing 20 genera. The Agave genus consists of over 600 species. Native to hot and semi-arid regions, these Yucca-like plants can be found along the Mediterranean coasts, throughout Mexico, and in many areas of the southwestern United States. Agave species also are found in more northern climates; however, these species usually are much smaller.

**Nomenclature**
Agave is Greek for noble, reflecting the plant’s tall secondary growth-stage bloom, called the inflorescence. This stalk can grow as high as 40 feet. A americana is known by more than one alias, namely Maguey, American aloe, and Century plant. Maguey is a local Mexican term that describes the plant’s likeness to palm. Additionally, the nickname Century Plant emerged from the mistaken belief that the tall rosette of pale yellow flowers blossomed only after 100 years. In truth, depending on its environment, the plant’s single bloom can appear anytime between 5 and 100 years.

**Identifying Features/Plant Facts**
A americana is adorned with thick succulent gray-green leaves that curl upward and emanate from a low basal rosette (Figure 2). The prickly leaf margins are lined with curved spines resembling...
fishhooks, some more than an inch in length (Figure 3). After storing an ample supply of nutrients in their rhizomes, Agave species sprout tall stalks with distal yellow-green flowers and die shortly thereafter.

Dermatitis-Inducing Plant Parts
The sap appears to be the most irritating part of *A. americana*. However, skin-aggravating factors also may be present in the leaves, stem, flowers, roots, and bulbs.

Allergens/Irritants
Calcium oxalate is highly concentrated in the sap of *A. americana*. In addition, sharply pointed, bundled crystals of calcium oxalate, called raphides, can embed in human skin. The resultant contact dermatitis is akin to that caused by other calcium oxalate–containing plants, such as daffodils, pineapples, and *Dieffenbachia* species. Patch tests of *A. americana* sap indicate a direct toxic process rather than delayed hypersensitivity. In severe instances, oxalic acid functions as a systemic poison that causes acidosis, vascular damage, and renal tubule obstruction. The rapidity of skin and systemic symptom onset supports the role for a potent, quick-penetrating chemical in the pathogenesis of Agave reactions. Characterization of this theorized agent remains the subject of further study.

REFERENCES

Figure 3. Leaf margin of *Agave americana* demonstrating curved spines resembling fishhooks.