Fig. 1.—The Primrose, a Favorite House Plant Which Poisons the Hand That Touches It.

ALL overground parts of the common nettle produce, by contact with the skin, a local inflammation, characterized by intense itching and small red pimples, which soon disappear. The bristles of the nettle (Fig. 4) terminate in points made brittle by silica which on penetrating the skin break off and permit the escape of a minute quantity of a quickly-acting poison of unknown composition.

A very different and insidious action is exerted by some species of *Primula*, notably the cup primrose (*P. obconica*, Fig. 1) and its many cultivated varieties. Here, also, the irritating substance is produced and applied by hairs, but these hairs are too soft to penetrate the skin. They terminate in globular glands, which exude a poisonous secretion that acts so slowly that several days may elapse before any symptoms of inflammation appear. The skin then becomes covered with blisters, and itches painfully, especially at night. A single contact with the plant sometimes produces an inflammation that lasts two or three weeks. The disease may be protracted indefinitely by repeated infection and may be carried by the hands to every part of the body. A university professor, who kept primrose growing in his bedroom, long suffered tortures without suspecting their cause. His face and hands itched so intolerably that he could not sleep, and used to sit up half the night bathing his hands in cold water and rubbing them until they bled. For a time he was compelled to give up his work, and was treated by many physicians and dermatologists in vain. Finally he read of the poisonous action of the primrose, banished his cherished plants from his bedroom, and his sufferings abated.

Long experience and direct experiments have convinced me that no one is entirely immune to primrose poison. I have known gardeners to be poisoned severely after they had cultivated thousands of primroses during many years without the slightest inconvenience. The Chinese primrose (*P. sinensis*) produces the same effect, but only on especially susceptible persons. Other species of *Primula* are equally poisonous, but they are of less importance because they are seldom cultivated except in botanical gardens.

The poisonous character of the bear's ear (*Cortusa Mattpalii*, Fig. 3), a beautiful plant of the primrose family, which grows in shady Alpine ravines, was recognized more than 300 years ago, but was subsequently forgotten. In 1609 the physician and botanist, Charles de l'Ecluse, better known as Clusius, wrote that the fresh leaves of the *Cortusa*, not crushed or broken, applied for an instant to a lady's cheeks, produce a "lovely blush" which is not followed by any permanent mark or other ill effect. These words may be interpreted to mean, either that crushed leaves produce no effect or that they injure the skin. In order to test the power of the leaves I applied a fresh and unbroken one to my left wrist for two hours. Its removal revealed the "lovely blush" described by Clusius, but this was only the beginning. On the following day, 33 hours after the leaf was applied, my wrist presented the appearance shown in Fig. 2. There was a thick red swelling, covering two square inches and surrounding two large and many small blisters. The eczema continued to spread for 17 days, and covered an area of 15 square inches on the fourteenth day. The symptoms were similar to those of primrose poisoning, but much more severe, including continuous

Fig. 2.—Inflammation Produced by a Leaf of *Cortusa*.

Plants Venomous to the Touch*

By Dr. A. Nestler

formation of blisters, intense itching, copious effusion of blood-serum and swelling of the whole forearm and hand.

At the same time I had gently rubbed a part of my right arm with a *Cortusa* leaf, without tearing the leaf. The inflammation, which made its first appearance two days afterward, was similar to that of the left wrist, but less extensive. Meanwhile I had been studying and touching the leaves and involuntarily carrying infection to the other parts. The lids of one eye and the tips of both ears were blistered and swollen, and many blisters appeared on the neck and the fingers.

From these experiments and from the words of Clusius, I conclude that the poison of the *Cortusa* is produced on the surface of the leaf, not in its interior. The leaves and stalk bear glandular hairs similar to those of the primrose, which produce a secretion that certainly irritates the skin, although it is unlike the corresponding primrose secretion in other respects. As the effects are not manifested immediately it is very probable that many botanists have suffered from them, without knowing their cause.

Many cases of poisoning of the skin by certain varieties of wood have been reported in recent years. An English writer, Smith, stated in 1906 that the so-called "Borneo rosewood," which is a favorite material for toys and ornamental objects because of its beautiful color and marking, causes inflammation of the hands, arms and eyes of wood-workers, and that the back of a man had been affected merely by carrying a bag of shavings of this wood. Similar poisonous properties have

Fig. 3.—The Bear's Ear or *Cortusa*, a More Virulent Alpine Cousin of the Primrose.

been ascribed to many other woods, particularly East Indian and West Indian satinwood.

Experiments made in England with these satinwoods and Borneo rosewood yielded negative results, but this fact does not prove the absence of poisonous properties, for the effects of such poisons differ greatly in different individuals. Some persons are very susceptible and others appear to be immune.

I have studied the effects of East Indian satinwood and two other woods, reputed to be poisonous to the skin, East Indian or Asiatic satinwood, also called silkwood, is produced by *Chloroxylon Swietenia*, a tree which grows in India and Ceylon. It is a pale yellow wood with a beautiful satiny luster and is so dense that it sinks in water. In English shipyards, where this wood is used for fine wainscoting, it has produced painful eruptions on the hands and faces of workmen. All experiments made on my own person, by application of fine sawdust and extracts of the wood, yielded negative results.

I can assert with confidence, however, that the other two varieties of wood that I have tested, possess poisonous properties. One of these varieties is a soft wood, used chiefly for veneers, and called "satin walnut" or sometimes (incorrectly) "East Indian satin-wood." It is the product of the American sweet gum tree (*Liquidambar styraciflua*). Some writers assert that this wood is poisonous to the skin, and others claim that it is perfectly harmless. Neither the wood nor its sawdust cause inflammation by several hours' contact with the skin, but an irritating substance can be extracted from the wood by means of pure ether. The evaporation of the ether leaves a residue which resembles stearin. When a bit of this substance as big as a millet seed is applied to the skin, it produces, after a few hours, severe inflammation and blisters, which persist several days. Hence it is still undecided whether or not mere contact with this wood can produce inflammation of the skin in exceptional cases.

The irritating properties of cocobolo wood, on the contrary, are not open to doubt. This is an orange-red wood, with conspicuous black stripes. It is heavier than water and is used for inlaying and the backs of brushes. It is probably the product of a species of *Cocobolo* indigenous to tropical America. A small quantity of the sawdust bound by court plaster to a sensitive and moistened part of the skin for a few hours produces severe inflammation and blistering, which make their appearance one or more days after the application. The intense itching at night which accompanies primrose and *Cortusa* poisoning is also produced by cocobolo. Workers in cocobolo must often suffer these annoyances, for small particles of the wood may adhere to a perspiring skin for hours.

The excessively irritating effect of the so-called poison ivy (*Rhus toxicodendron*), a species of sumach common in the United States, has long been known and frequently investigated. Its cause is a resinous substance which is present in all parts of the plant. Merely touching uninjured parts of the plant cannot in this case produce any toxic effect. Transmission of the poison through the air is out of the question, and mere proximity to the plant cannot therefore cause any ill effects. A remedy commonly recommended for poisoning from this plant consists of an alcoholic solution of lead acetate. As a matter of fact, washing after contact with the plant will sometimes prevent the trouble.

Fig. 4.—Bristle of Nettle Magnified 200 Times.

* Adapted from *Die Umschau*.