THE ARTIFICIAL COLORING OF PLANTS.

A simple and well known chemical experiment, showing the action of sulphurous acid on vegetable coloring matter, consists in placing in that gas violets, which become almost instantly bleached. Sulphurous acid, by its deoxidizing properties, destroys the color of a large number of other flowers, such as roses, periwinkles, etc., and its effects may easily be noted by the little apparatus shown in Fig. 1. This consists of a capsule in which sulphur is ignited to generate the acid, covered by a conical metal chimney, at the orifice of which the flowers to be bleached are placed.

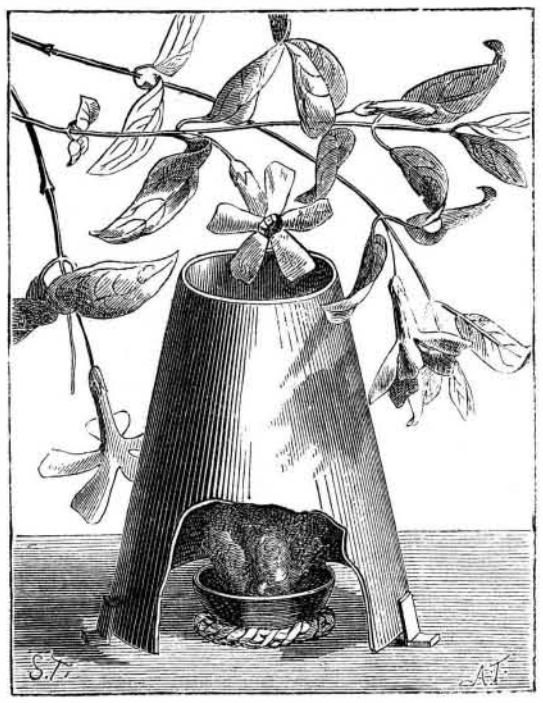


Fig. 1.—Discoloration ot flower petals by sulphurous acid.

Quite recently M. Filhol has exhibited, before the members of the French Scientific Association, new results, obtained through the action of a mixture of sulphuric ether and a few drops of ammonia upon flowers, from which it seems that a large number of the latter, normally of a violet or pink color, become, when immersed in the mixture, an intense green. The editor of *La Nature*, from which journal we extract the engravings herewith given, has continued the investigations of M. Filhol, and deduces an interesting series of experiments, the description of which we present below.

Into a wine glass, Fig. 2, pour a quantity of ordinary ether, and add about one tenth its volume of liquid ammonia. Into this the flowers are to be plunged. The purple and pink tinted

Fig. 2.—Turning blossoms green by ammoniacal ether.

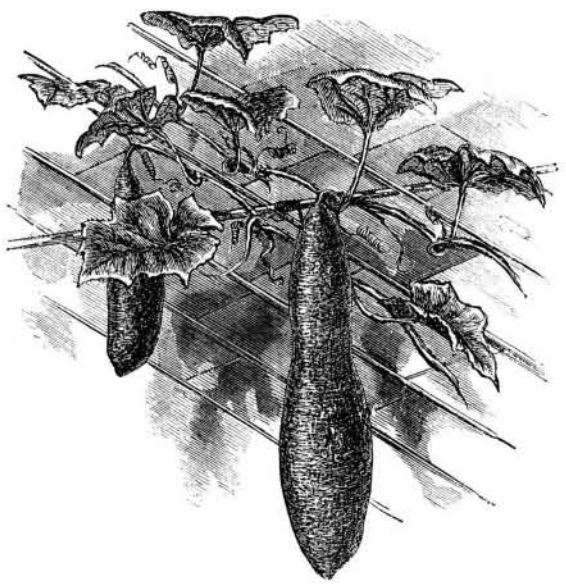
flowers, which become bright green, appearing as if dyed by a copper salt, are the red geranium, the violet periwinkle, lilacs, roses (red and pink), gillyflowers, thyme blossoms, blue bells, heliotropes, and myosotis Other flowers of different shaded colors acquire different tints. The upper petal of the violet sweet pea becomes a dark blue, while the lower petal turns to a light green. Sweet William changes to brown and light green. White flowers usually become yellow, this being the case with the white poppy, the snapdragon, which turns yellow and dark violet, the white rose, which changes to a straw tint, the white columbine, the chamomile, the syringa, the white daisy, and the white rocket, the honeysuckle, the bean, the white potato blossoms, the meadowsweet, and the white foxglove. In the pink sweet pea, the upper petal becomes blue, and the lower one a soft green. The pink geranium turns blue in a remarkable manner. The red snapdragon becomes of a fine metallic brown, the valerian of a grayish color, and the red wild poppy of a fine violet. Yellow flowers in the ammoniacal ether remain unaltered. Red turns green in a very curious way when put in the mixture. The action of the chemical is so rapid that the merest sprinkling of it on the leaf is sufficient to cover the latter instantly with green spots. In the same way flowers may be spotted with white, even while they are growing.

The most interesting changes of color are those which take place in flowers which are variegated. Thus particolored fuchsias become yellow, green, and blue. All flowers which have taken a new hue may be kept from changing back again for several hours by plunging them in pure water. Eventually, however, they regain their natural colors.

Another curious fact to be noted in the present connection is that the flowers of asters, which are naturally inodorous, acquire an agreeable perfume under the influence of the ammonia. The same flowers, when violet, become red when wet with nitric acid diluted with water.

MELON CUCUMBERS.

Considerable interest has recently been manifested in the fruiting of a cross effected between *cucumis melo* and the Telegraph cucumber, a well known variety of *c. sativus*. This presumed cross or hybrid was lately seen at Kew, London, fruiting in a house, and the followingare our notes on them, made at the time, together with the accompanying reduced representation of the plant: Stems slender, scabrous; leaves and flowers like those of the cucumber in size, as well as in other respects; fruit from 6 to 10 inches in length, and from 2 to 3 inches in diameter, of a dull brown russet color, or profusely dotted with whitish lines; but we observed no spines. In fact the growth and flower resemble those of a cucumber, and the fruit that of a melon. The female parent is the *concombre de Sikkim*, of Naudin, described in the *Annales des Sciences Naturelles* as a variety of *c. sativus*, so that, if the pollen from the Telegraph cucumber has taken effect (which now seems doubtful), the cross is simply one between two extreme forms of the common cucumber, and not a cross between the cucumber and melon, as the Kew label would lead one to believe. Cucumbers and melons are extremely variable in size, color, habit, and flavor; we have seen, indeed, a figure of a cucumber of the ordinary form and a globular fruit, half cucumber and half melon, growing on the same branch. This was supposed to have been brought about by a cucumber flower having become accidentally fer-



tilized with pollen from some Little Heath melons which were growing in the same house. In Darwin's "Animals and Plants under Domestication," we read that there is a race of melons of which the fruit is so like that of the cucumber, both externally and internally, that it is scarcely possible to distinguish the one from the other except by the leaves.

Major Trevor Clarke, by whom the seeds of the supposed hybrid under notice were sent to Kew, says: "This curious plant was sent to me from India as a cucumber. The remarkable scabrous coating of the ripe fruit attracted my attention, and induced me to send it to Kew, where it was at first thought to be a melon. It is now, however, thought to be a true cucumber. From the appearance of the figure the Kew plant hardly looks as if the cross with the Telegraph cucumber had taken effect. I have now growing here two plants from the (supposed) crossed and uncrossed seed. They have set fruit, but were late plants, and are not yet in a condition to be described. Many years ago I raised a cross between a melon and the Snake cucumber (*cucumis flexuosis*); but the latter, I believe, ranks among the melons. A cross, real or supposed, between a cucumber and a melon, was shown at South Kensington, some years ago. A neighbor of mine has a plant from the big pumpkin crossed by a cucumber. It was fertile, and is now growing for the second generation."

Analysis of the Human Breath.

An account published in *Nature* of some experiments, made with a view to determine the organic matter of the human breath in health and disease, presents some facts of a peculiarly interesting nature. The breath of eleven healthy persons and of seventeen affected by disorders was examined, the persons being of different sexes and ages, and the time of day at which the breath was condensed varying. The vapor of the breath was condensed in a large glass flask surrounded by ice and salt, at a temperature of several degrees below zero, the fluid thus collected being then analyzed for free ammonia, urea, and kindred substances, also for organic ammonia. Among the various results of this examination may be mentioned the fact that, in both health and disease, the free ammonia varied considerably; the variation, however, could not be connected with the time of day, the fasting, or the full condition. Urea was sought for in fifteen instances—three healthy persons and twelve cases of disease—but it was only found in two cases of kidney disease and in one case of diphtheria; and a faint indication of its presence occurred in a female suffering from catarrh. The quantity of ammonia arising from the destruction of organic matter also varied, possibly from the oxidation of albuminous particles by the process of respiration; but in healthy persons there was a remarkably uniformity in the total quantity of ammonia obtained by the process.

THE SKIMMIAS.

Skimmia japonica was for a long time the only variety known to Europe and America. Now, however, we have five recognized species, namely *skimmia japonica, ablata, Veitchii, laureola*, and *fragrans*, of the first and last of which

Skimmia Japonica.

we furnish illustrations. *S. japonica* is valuable on account of its brilliant red fruit, about the size of a pea, which, growing in profusion, remains on the bush all the year round, thus giving it a very ornamental appearance, especially in winter, and perhaps not less so in the following spring when, through this strange tenacity of adhesion, it is not unusual for the plant to be seen, as in our illustration, laden with both fruit and flowers at the same time.

Skimmia fragrans, which bears a sweet smelling white flower tinged with yellow, possesses this peculiarity—that though its buds appear before winter sets in, the flowers do not open till the following April. With the exception of *laureola*, which is indigenous to Nepaul, India, all the varieties of skimmia come from Japan; they are well worthy of extended cultivation, being very hardy and adapting themselves readily, when young, to almost any soil or climate. They may easily increased by means of cuttings struck under glass, or in some cases from seed. Siebold and Zuccarini

Skimmia Fragrans.

state, says *La Revue Horticole*, that the Japanese and Chinese class *s. japonica* among poisonous fruits.

L. W. Pond.

The mystery attending the disappearance of Mr. L. W. Pond has been to all appearances cleared up in a manner which few could have suspected. When we penned the few lines which we intended as a brief tribute to a character regarding which no blame had ever reached us, we believed that we did but scanty justice to their unfortunate subject. It is excessively sad for us now to learn that we, in common with his other friends, have been grievously mistaken in our estimate, and that in lieu of the model of integrity we find the forger and defaulter. A careful examination of the missing man's papers has brought to light forged evidences of indebtedness, reaching as high as $100,000. The plan adopted was to take an old note, already paid and bearing on its back several indorsements, erase the figures and date with a chemical preparation, fill in new date, etc., and obtain cash for it. The microscope, which showed the effects of the chemical on the paper, and a solution of nut galls which restored the erased ink to its original blackness, were the means of detection. The loss falls on those who have cashed the notes.