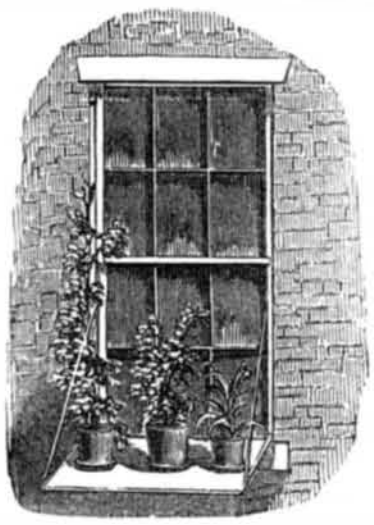
Science and Art.

Window Sill Flowers.

MESSRS. EDITORS—On page 289 of the present volume of the SCIENTIFIC AMERICAN, appears a very sensible and public spirited article on "Window Sill Flowers." I would like to add a few suggestions.

It has always seemed to me an excellent custom, that of keeping flowers in windows. I have rarely been without a few, and have always felt amply repaid for the little trouble of watering them once in a day or two. This spring, wishing to enlarge my "window garden," I procured a board of the length of the sill, and about two feet broad—perhaps two



feet and a half—one of the long edges of which rests on the window sill, while the front edge is supported by wire rods, which are connected with the sides of the window frame by means of a nail and hook, so that the whole can be removed in less than one minute, if there is occasion (fig. 1). A kind of projecting window sill is thus formed, easily accommodating a dozen pots of flowers. A box of earth might be substituted, with the only objection that it would be heavier, and not nearly so portable.

A light cast iron frame, with shelves in semi-circular form, much like the common flower stands, might be made at very moderate cost. It could be easily adapted to a window. Each shelf could have a trough for receiving the dripping water. Vines would

look pretty on each side of the window; and nearly every kind of flower could be arranged with various displays of taste. Does any one think that such an ornament would not please the eye as well as do the most skillful and expensive carvings? Is there any objection to the country odor they would bring with them into our impure atmosphere? They would make our atmosphere more healthy, besides sweetening it.

Perhaps in another age it will not seem so absurd as it will now, to make the suggestion that money would not be misspent by city authorities in distributing, under proper regulations, frames of this kind to those who would give promise of carrying out the plan. The city might, at least, encourage the design, by bearing some portion of the expense. Very large sums are often expended for public parks; a small portion of this might well be afforded, to encourage the cultivation of flowers. I do not know what would be the probable cost of such a frame as I have proposed. I am about to have one made of wire.

I should mention that pots containing flowers need to be sheltered from the too great heat of the mid-day sun, else the roots will be injured. This sheltering can easily be accomplished by laying a piece of stiff paper over the pots—leaving an opening for the flower stalks—and letting the paper project two or three inches. I hope some others may be led to try this plan. R. B.

New Haven, Conn., June, 1857.

Anatomical Cause of Short-sightedness.

MESSRS. EDITORS—The eyes of short-sighted persons do not only differ in shape from healthy or far-sighted eyes, but also in their peculiar mode of refracting the light. In the place where the optic nerve enters the eye, and forms the retina by spreading itself over the back of the eye balk, a small, transparent blister is seen, apparently filled with a watery fluid. This blister (which lies directly upon the optic nerve) likewise occasions a greater convexity of the eye, which, from its increased refractibility, requires more light, and this short-sighted persons need, in order to see distinctly.

This, then, is the cause of short-sightedness, at least in the greater number of cases. However, from the manifest relation of natural events to each other, other causes can produce similar effects; for instance, a man's lameness may arise as well from having one leg shorter than the other as from an inflammation, whereas in the first case, the cause is to be found in the bones, in the second it is in the skin, muscles, or ligaments. But shortness of one leg is most frequently the cause, therefore we are accustomed to say that limping arises from a difference in the length of the legs. It is just so with this blister in the eye producing a disease, called, from its similarity to another which comes on the cornea, "staphyloma" (*posticum*). The staphyloma is not the sole cause of short-sightedness, but is so in nine cases out of ten.

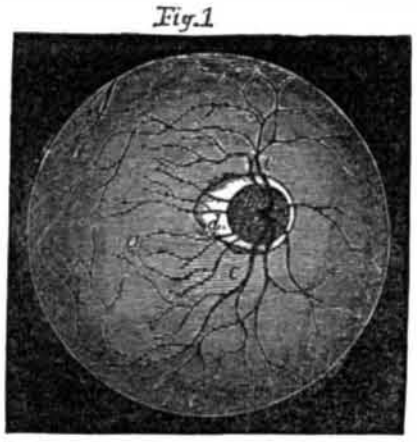
Dr. Jaeger observed that among nearly 4,000 patients whom he had yearly in his private practice, about 60 or 80 had the staphyloma, which makes a proportion of 2 to 100. The same proportion was found to exist in 1,170 eyes anatomically examined after death. The length of the axis of the eye, which amounts in a healthy state, to 23-26 millimetres, (a millimetre is 0·3937 of an English inch,) was found to be increased to 28 or 32, but nevertheless, the coatings of the eye had only expanded, and nowhere separated. But the disease had lessened the quantity of the black pigment which, as a protection against too much light, lines the internal coating of the eye, just as the interior cavity of the camera obscura, the telescope, microscope, and other optical instruments, is covered with a faint black color.

If now the interior of an eye diseased with the staphyloma be examined by means of an eye-reflector, we find on the bottom of the eye, above and beside the optic nerve, the blister already mentioned appearing as a light-colored transparent object, from which it cannot be exactly decided whether it is turned towards the interior of the eye (and towards the lens) with its end pointed or concave. Jaeger thinks it has a pointed form, similar to a cone. This abnormal body generally corresponds in size to the degree of short-sightedness, and covers with its broad end only the exterior half of the optic nerve, (which is seen far back in the eye,) while its pointed end, either horizontal or frequently oblique, is directed towards the so called yellow spot (*maculea lutea*) in the retina. The accompanying diagrams will better explain this subject.

When the staphyloma is yet slight, (fig. 1) so that the eye is not rendered much more convex, and very little short-sightedness is produced, it presents the following appearance on an examination with the eye-reflector.

The *back ground* of the eye, *a*, appears—partly from the light thrown upon it by the examination instruments, partly from the numerous little red blood-vessels invisible to the naked eye—of a splendid orange hue; this color is so shaded that the greater part of the middle is yellow, becoming darker towards the margin. The optic nerve, *b*, appears round, and of a faint rose color as it enters the eye. From the center of this nerve extend the blood-vessels, *c c*, which nourish the retina, some of a dark blood-red color,

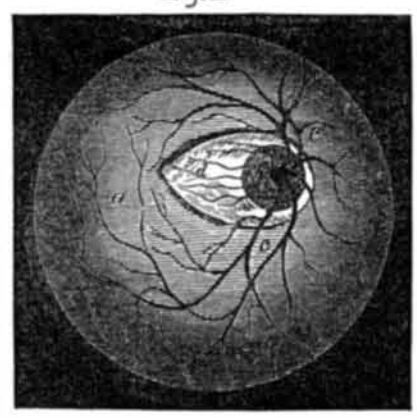
Fig. 1



others of a deep orange. Upon the optic nerve lies the blister-like substance which forms the perceptible seat of the disease, and which, as mentioned above, has received the name "staphyloma posticum," *d*. The same appears of a light brilliant color, and covers the optic nerve. On the external margin there are frequently deposits of pigment, which clearly indicate its limits. In worse cases, this strange substance generally increases in breadth.

In aggravated cases, (fig. 2,) it increases more in its length than in its breadth, and hangs over the optic nerve like a pyramid inclined to one side. At the same time the blood-vessels of the eye are more largely developed, and take a perceptibly winding

Fig. 2



course. The aspect is wonderfully beautiful to the observer. The patient himself cannot see it, nor would he enjoy it much if he could.

Space does not permit us to pursue further the examinations of this disease. But the reader will, perhaps, inquire whether the knowledge of these facts may not be applied to some practical use for the cure of short-sightedness? It is even so. We not only find many of the remedies useless, even partly injurious, which have been hitherto applied to this disease, but now for the first time we can introduce a "dieter for short-sightedness," a description of which we will reserve for one of the following numbers. N. GLEWITZ.

Stratford, Conn., June, 1857.

Treatment of Asthma.

The following is given in the Boston *Medical and Surgical Journal*, by Dr. Stilwell, as an efficacious remedy for the above disease. He says:—

"I have administered the hydrate of potassa in this disease with most decided temporary and permanent relief. Employed in 5-grain doses three times a day, the effect is immediate and marked. Of the *rationale* of its effects I am ignorant; but the administration of it is soon followed by a slight expectoration of the viscid mucus, attended with an amelioration of all the most urgent symptoms. In hay asthma, rose fever, and cases analogous to true spasmodic asthma—caused by certain perfumes, vapors, &c.—this remedy produces the same relief. That hydrate of potassa possesses a specific influence upon the air passages I think is undoubted, and I am prepared to learn that it will be found one of our most efficacious remedies in 'pseudo-membranous' croup, to disengage the false membrane after the inflammatory action has been reduced."

Fever Poisons.

In a work recently published by an English physician on the transmission of fevers, after referring to the value of thorough ventilation, light and cleanliness to disinfect clothes and apartments to disperse infectious fever poison, he says:—

"It is important to know regarding infection, that when not destroyed or dispersed in the sick-room, it attaches itself and adheres with great tenacity to all articles of furniture—chairs, tables, drawers, &c., nestling in their innumerable pores; and unless these articles be scrubbed with a solution of chloride of lime, or exposed to a strong heat, or a free current of air for several hours, it may again become evolved, *more virulently than at first*, after the lapse of weeks. But it chiefly adheres to cotton and woolen materials. The patient's body-clothes and blankets become saturated with it, like a sponge with water; and in airing these materials a mere passing breeze is not always sufficient to carry it away."

The average consumption of soap in Great Britain is about seven pounds for each person annually. Upon this calculation it is reckoned that 9000 tuns are used in London every year, to produce which it requires about 5500 tuns of fat and 650 tuns of soda.