



SNOW-FLAKES AND HOW TO SEE THEM.

Armed with a piece of dark fur, black cloth, or the crown of a black hat, previously cooled below the freezing point, and a strong magnifier, an observer will have plenty of opportunity of examining things of beauty, there is a snow shower at the time, and the temperature is below the freezing point.

We say snow shower because there is a difference between a snow shower and a snow storm. In the snow shower the air is filled with light, fleecy flakes, which descend gently and noiselessly through it, and either melt away and disappear as fast as they alight, or else, when the temperature is below the point of freezing, slowly accumulate upon every surface where they can gain a lodgement, until the fields are everywhere covered with a downy fleece of spotless purity, and every salient point—the tops of the fences and posts, the branches of the trees, and the interminable lines of telegraph wire—are adorned with a white and dazzling trimming. In such a fall of snow as this the delicate process of crystallization is not disturbed by any agitations in the air. The feathery needles from each little nucleus extend themselves in every direction as far as they will, and combining by gentle contacts with others floating near them, form large and fleecy flakes, involving the nicest complications of structure, and filling the air with a kind of beauty in which the expression of softness and gracefulness is combined with that of mathematical symmetry and precision.

In a snow storm the force of the wind and the intensity of the cold usually change all this. The progress of the crystallization, which to be perfect must take under the condense, is at once hastened by the commotion in the air. Across the broad expanse of open plains, along mountain-sides, through groves of trees, and over the smooth surface of frozen lakes and rivers, millions of misshapen and broken crystals are driven by the wind, piled up in heaps, or accumulated in confused masses under the lee of every obstruction, having been subjected on the way to such violence of agitation and collision that the characteristic beauty and symmetry of the material is entirely destroyed.

While the snow is falling gently, then, let us sit at an open window and catch the feathery flakes on our piece of black cloth, and examine them through the microscope. It will be observed that there is a marked peculiarity common to them all. They consist of a star of six rays, or a plate of six angles. There is a well-known property of ice in respect to its law of crystallization, which throws some light on this. Water in

freezing assumes the form of hexagonal (with six sides and angles) grains. These in turn combine in the light falling snow in similar shapes and angles, the six-rayed stars being three elongated hexagonal prisms, crossed at the centre. Rarely this arrangement is doubled, making twelve points in the circles, and this is sometimes again increased. It should be remembered also that the snow stars range only from one-thirtieth to an inch in diameter, and are made up of almost infinitesimal crystallized particles.

It will not require much perseverance to catch enough to make a good selection of beautiful forms, which will be usually similar in character during the same shower, owing to the fact that all have been subject to the same crystallizing influences; but, sometimes, a change from one style of flake to another takes place before the storm is ended and during the period of transition both varieties fall together from the air, while each different snow fall seems to have its own special conformation.

Drawings of the different forms of flakes may easily be made with a pen, and a curious collection will soon accumulate. The most striking of the methods adopted for the inspection of ice crystals is one discovered by Professor Tyndall, and consists of melting the ice from within. This is done by means of a lens, by which the sun's rays are brought to a focus within the mass of ice, so as to liquify a portion of it in the interior without disturbing that at the surface.

While considering the beauties of the snow flakes, it is impossible to neglect their uses when combined. "Snow like wool," says the Psalmist, and is it not strange that this snow

which covers the more northern countries in winter time is used as wool—which it resembles in whiteness, "fleeceiness" and softness—to keep warm and protect the roots of the trees, bushes and plants from being killed by the biting frost. It is a strange fact that snow, which, of itself, is cold, is one of the best protections from cold. Thus in the Arctic regions the Esquimaux lives in a snow hut in winter, and when a liab begins to freeze it is rubbed with snow to bring the heat back to it again. It is stated by naturalists that the

secret of this warmth is that there is a saline spirit, which is hot, in the snow, and thus keeps all it covers warm; it is the same saline spirit that makes the snow cause thirst when eaten, instead of quenching it. Another use of snow is the medicinal one, it being stated that a salt extracted from it has been found to be a remedy against both putrid and pestilential fevers. Snow being both beautiful and useful, it is

no wonder that it should be a favorite subject for poets. We will give but one selection, which is by an anonymous writer:

WHITER THAN SNOW.

Gently falling from their cloud-home,  
Singly to our earth they come—  
The feathery snow-flakes—  
Softly resting—whether cresting  
Lofty pines or lowly brakes.

Little stars—without the glory,  
Shining through, of Heaven's own  
light,  
But all its purity—  
Singly falling—quick uniting,  
Drifting to obscurity!

Losing all their star-like semblance,  
As each mingles into each—  
Most tenderly they spread,  
Coverings down, soft and  
fleecy,  
Over every flower-bed.

So they fall—and I sit watching,  
Till my eyes grow dim with tears—  
Fast coming from a thought,  
Which the gently falling snow-flakes,  
On their noiseless way, have brought

It is of that blessed promise,  
Giv'n to every loving heart,  
That comfort in our woe!  
"Though your sins be red like  
scarlet,  
I will make them white as snow."

Oh, the tender, touching, "Come, now,"  
Spoken by the Lord Himself,  
Spoken as low and soft  
As the falling of a snow-  
flake—  
(And he speaketh it full oft.)

But the world's gay music drowns it,  
Though no cadence half so sweet,  
Or melting, can be heard—  
And the heedless heart forgets it—  
Loves it not—the Father's word.

For my heart, so often straying,  
From the Lord, who, loving,  
calls—  
Oh, bitter tears, still flow—  
Till within the fount of healing  
Christ shall wash it white as snow.

The silvery snow! the silvery snow!  
Like a glory it falls on the field below;  
And the trees with their diamond branches  
appear  
Like the fairy growth of some magical sphere;  
While soft as music, and wild and white,  
It glitters and floats in the pale moonlight,  
And spangles the river and fount as they  
flow;  
Oh, who has not loved the bright, beau-  
tiful snow!

