

acted by groups of young ladies whose facial expressions and bodily movements represented the sentiments of the songs. It was a practical illustration of the Delsarte system. At the conclusion of the program the audience adjourned to the lower hall, and the "Mysteries" were solved by the members of the faculty. Then came goodnights, and all went home happy.

SCIENTIFIC

FLOWERS AND THEIR PEDIGREE.

One of the results of study is the enjoyment we are enabled to experience thereby. Surely one who has studied art can receive more pleasure from viewing a masterpiece, than one who has never given the subject of art any thought; and he who is a student of Nature can better enjoy a day in the woods, than he who has not been educated to discover Nature's charms. How many interesting things there are connected with the most commonplace plant at our feet! and how much pleasure we might receive, if we would but give it a thought!

Grant Allen has given us much useful information, and many beautiful thoughts in that unique little book, "Flowers and their Pedigrees."

The style employed is simple and well suited to the subject. Every point is made so plain that a person not conversant with the technicalities of botany, can read with unabated interest, for the author carries out his own idea, which he expresses in the words:— "It is better that ninety-nine wise men should be bored with a twice-told tale than that one innocent person should be left in mortal error for lack of a short and not wholly unnecessary elementary explanation."

In the introduction to the book, the author quaintly gives a suggestive picture of the wonderful world in which the beetle and his fellow insects live. The reader is asked to put himself in the place of the beetle, and imagine what mighty forests the grass and shrubbery would appear to be; and what terrible enemies he would have to encounter in his struggle for life. We are told that Jules Verne's wildest stories are very commonplace in comparison with the beetle's life battles.

The book consists of a series of eight essays on familiar specimens of plant life. In these essays

the author traces the origin of the plant, the reason for its existence in certain localities, and, as the title implies, its pedigree.

One can but note the many little bits of subtle reasoning which the author employs in tracing the connection between various plants which at first seem to be wholly unrelated.

We are told many interesting things about the color of flowers. For example that the primitive flower is always yellow, but that as the plant advances it becomes pink or white and many attain to the highest of all colors, that of blue. Many reasons are given for this difference of color: the chief one presented is that fertilizing insects are thus attracted; special hues attracting special insects.

In the struggle for carbonic gas in plant life, the leaves of the plant must have the form that is best suited for their purpose. We are led to observe that plants living among dense and matted vegetation, where the life-giving element is hard to obtain, have numerous, small, subdivided leaflets, thus rendering easy the difficult task.

The book is replete with reasons for even the most unimportant characteristic of the plant.

One of the most attractive and instructive of the series of essays is that which has for its subject the origin of wheat. In this chapter, we find that the wheat has descended from the typical lily. The order of evolution in the case of the wheat is that of continuous degradation in the botanical sense. As the author says, "there is no page in botanical history more full of genuine romance than this." The primitive ancestral lily was simply one triple set of ovaries and three triple sets of stamens.

Its first step in the upward direction was the acquisition of petals. Here the outer row of stamens was changed to petals. Although there was a loss of stamens, and a consequent loss of the fertilizing pollen, the gain to the bright-hued petals far outstripped this loss, in affording an attraction for the insects, which carry the pollen from flower to flower.

The first step *down* the scale toward the wheat was the decrease in the number of ovaries, and an increase in their size.

The change of the plant to adapt itself to wind fertilization is an important one. The rush takes on this form.

In the case of the rush an important advance is made toward the wheat. This plant, like the wheat, has the habit of storing albumen in its