Vignette two

Mendel's Investigation in Heredity

In 1856, Mendel began investigations into heredity using pea plants. When Mendel began his work, scientists were thinking about heredity, but precisely how characteristics were transferred from parents to offspring remained a complete mystery. Mendel continued his work with pea plants through 1863.

At the time three things were known about heredity:

1. New 'species' can appear in the form of hybrids
2. Great difficulty exists in explaining why these hybrids gave rise to new hybrids, and
3. Whatever the mechanism of heredity, it involved both the male and the female.

There are over 7,500 varieties of apples. Apples come in different colors like red, green, and yellow and distinctive tastes such as sweet, sour, and tart. Color and flavor are characteristics or features that make apples unique. Different types of apples are a result of farmers cultivating different apple trees. For example, an apple tree with green, sweet apples could be bred with an apple tree with red, sour apples. The result could produce seeds that grow into a tree with green, sour apples. This new tree is a hybrid because the apples would have a mixture of different characteristics or inherited traits from each parent tree.

Creating hybrid apples is a difficult process that can take a long time. Mendel needed to use a simpler example that would allow him to grow many plants and investigate different generations without having to wait years for the new trees to grow large enough to produce fruit. Mendel investigated hybrid pea plants and wrote a paper on plant hybrids. His work on pea plants did not end with just learning about hybrid plants. His work also investigated how to expand the understanding of what was known about genetics during his time.