## CHAPTER ONE - THE BIG PICTURE

## 1. Alchemy & Science

lchemists have their tests, but they are dissimilar to the attempts of modern scientists to find intellectually exclusive and 'absolute' comprehension of the great mysteries in our Universe. Alchemists are endowed with a sense of liberation because they are exclusive of the pressure to empirically prove their results as scientific fact. To be an alchemist you have to open your mind and go beyond the contemporary intellectual consensus to find answers. The realizations provided by this way of thinking, enlighten the alchemist who is enamored with the natural laws. Alchemical properties are recognized when a 'result or 'reaction' occurs that baffles modern scientists. Science can't explain exactly how the symbiotic microbes in bees' digestive systems function to create honey, so it can be defined as an alchemical reaction. As another example, consider how our bodies create calcium for bones and muscles when our diets are low in calcium. If we ingest the herb horsetail, which is high in silica, along with a food high in carbon, our bodies can alchemically transform these two substances. Their atomic weights combine to total the weight of calcium. This can be defined as an alchemical law and is known as Biological Transmutation (Staelin, 2006). In other words, alchemy doesn't put a great deal of importance on exactly the how to make honey, or calcium, but instead emphasizes the usefulness of the function of natural laws that create them.

The laws of alchemy, as used in the laboratory, can be applied to modern technology. When Isaac Newton applied the alchemical theory, 'As above, so below, as below, so above', to a falling object, his investigations led him to realized that the same laws that govern an apple's descent from a tree, could also be applied to understanding the cosmos (Hatch, 1998). Isaac Newton was an alchemist, who also became a scientist (Hauck D.). A recent example, availing natural alchemical laws to science, is when bacteria are cultured to process garbage and oil spills. Wineries are another good illustration of Science helping to improve on the natural laws that govern their employment of microbial yeasts. Premium cultures secured from their fermentation vats are reused to seed the proceeding batch, and have on occasion been passed down through family lines for centuries. Often these hybrid microbes are unique when compared to those found in nature due to the alchemical efforts of the wine makers. Decidedly, it is the level of artistry attained by those who create wines that prove them to be fine products, but today, science provides great tools and instruments that aid in identifying, protecting and promoting, these beneficial yeast communities. Perfection of the arts of fermentation and distillation is a very desirable talent in the realm of the alchemist.