

Desert Plants

A quarterly journal devoted to broadening knowledge of plants indigenous or adaptable to arid and sub-arid regions, to studying the growth thereof and to encouraging an appreciation of these as valued components of the landscape.

Frank S. Crosswhite, editor

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Editorial

Misconceptions Concerning Science. The journal *Desert Plants* is a scientific publication. This does not mean that it is only for professionals. Science is a discipline of mind-training and learning of as much value to the individual member of the public as to the professional. Science does not teach, yet we learn from it. Science provides *de novo* learning by the individual, whereas education (i.e. teaching) merely repeats supposed truths which are vouched for by the professor (i.e. the teacher who professes to know). Semantics? No.

Some have said that science is merely observation and conclusion. Actually, science is the discipline whereby we try to avoid faulty observations and incorrect conclusions. Unfortunately, we have several generations of teachers who were taught to be in awe of science rather than to apply it to their daily lives. Human beings devoid of any appreciation of scientific discipline make innumerable faulty observations and incorrect conclusions on a daily basis. One of us (C.D.C.) served on an Arizona Department of Education committee dealing with the future of science in Arizona public schools. The committee concluded that one of the biggest problems in Arizona and undoubtedly the nation is that we have not emphasized to students that they should be learning daily *de novo* by applying scientific discipline to their daily lives. No Montessori Method; that's for sure.

America is falling behind in science. Fewer students are choosing science as a profession. Excuses are given that science is too complicated, too difficult, too separate and apart, not compatible with their lifestyle.

So often we hurt what we love by being overly protective. We often hear of killing a plant through kindness by giving it too much water. We can teach a child not to work by always giving money whenever asked for. In America educators are now concluding that whole generations of students have been hurt by our emphasis on *teaching* science as "deus ex machina" rather than our doing what we should have — fostering students to learn *de novo* from science as a discipline involving observation and conclusion applicable to daily lives. Scientific discipline involves giving attention to detail in observation and using caution and logic in arriving at conclusions. Science does not guarantee a correct conclusion. It merely reduces the probability of error. Indeed, good science can be represented by detailed observation with attention to detail alone with the intention of stock-piling information for drawing future conclusions when needed. Much of plant science is descriptive or observational as opposed to experimental. Examples are the disciplines of Plant Morphology, Plant Anatomy, Plant Taxonomy, Floristics, and Plant Ecology. Attention to detail and *de novo* learning (science) is nowhere so important as in natural resource appreciation and understanding of local environmental heritage.

This issue of *Desert Plants* carries major contributions 1) to local environmental heritage in the Phoenix area (Flora of the South Mountains), 2) to new concepts involving prehistoric Hohokam agriculture (New Life from ashes II), and 3) to the taxonomic understanding of the Elephant Tree genus *Bursera* in Sonora and Arizona. These articles do not fit the "white lab-coat only" misconception many of us have concerning science. They are science for the natural resource or environmental heritage oriented segment of our society. — F. S. Crosswhite and C. D. Crosswhite