

named it as new, and sent a branch to Dr. Gray, who writes back that it is his unpublished *H. Wrightii*, which he has obtained from San Bernardino through Mr. W. G. Wright, only a year earlier than the date of my collecting it as a waif five hundred miles from its home. The seed, from which my waif specimen was produced, came probably by rail; for it was at the terminus of the railroad route that I found the plant.—EDWARD LEE GREENE, *Berkeley, California*.

Botany at Harvard University.

The following brief notes, taken while spending the winter at the Botanic Gardens, will give the readers of the GAZETTE an idea of the nature and method of instruction given in this branch of Natural History at Harvard University.

Botany is one of the many *elective* studies which the whole course contains, so that all who begin it do not necessarily finish it. The course in elementary botany begins about October 1, and continues throughout the year. It consists, first, of practical exercises in analysis, by which means the student is made familiar with the process of determining plant names. This is done by analyzing, first some of the more common, regular, symmetrical flowers, and afterwards the irregular ones, such as some of the large *Compositæ*. Practical exercises are then given in the use of the analytical key, by which the student is made familiar with the process of tracing plants to their proper places in the Natural Orders. The next subject is to consider the different parts of the plants, following the plan given in Gray's Structural Botany.

Each student is required to work six hours a week in the laboratory, with a dissecting microscope. The last half of this course is devoted to the study of the Natural Orders and the useful plants which they contain, accompanied with the study of the most striking phenomena of vegetation.

At the beginning of the second year, the class take up the study of biology, pursuing a course rather more extensive than that given in Huxley's Elements of Biology; beginning with the lower Cryptogams, such as Bacteria, the different Moulds, etc.; passing to the higher forms, making a thorough study of the Ferns; finishing the first half with the study of Histology. During the second half year the class is given a thorough course in experimental vegetable physiology, and systematic botany. In this course, besides the collection and identification of plants, each student is furnished with a compound microscope, and is required to spend at least six hours a week, during the last half year, in laboratory practice, in the examination of important orders, giving results of experiment with the different apparatus at his command. The

laboratory work in both the elementary and advanced classes is accompanied with lectures twice a week upon topics similar to the following:

Structure of, and useful plants in, Polypetalous, Monopetalous and Apetalous divisions.

Same in regard to Gymnosperms.

Morphology of Bracts, and an examination of inflorescence.

Morphology of calyx, corolla, stamens, carpels, ovules, seeds and fruits.

Movements in plants.

General laws of adaptation in the vegetable world.

Plants of former times.

Plants of extremes of climate.

Plants of the temperate zones.

General laws of plant distribution.

Relation of plant structure to functions.

Relation of plants to water; percentage of water in composition; root absorption; absorption by other parts; transpiration and its results; selection of dissolved salts and their appropriation by the plants.

Soil, its physical and chemical structure.

Relation of plants to the atmosphere; gaseous absorption; transfer of gases in plants.

Assimilation; structure of the leaf; chlorophyll, its properties; relation to light; products of assimilation; effects on the air; storing up of elaborated products.

Metastasis; changes which elaborated products undergo in the plant.

Production of active principles; relations of this to heat.

Respiration in plants.

Nitrogenous food; insectivorous plants.

Phenomena of growth.

Laws of growth.

Movements; autonomic; following shocks; associated with growth.

Buds and their transfer.

Fertilization in gymnosperms.

Fertilization in angiosperms; color, fragrance, etc., in flowers.

Fertilization; close, cross and hybridization.—J. TROOP.

Remarks on *Dentaria* as a Subgenus of *Cardamine*.

Bentham and Hooker in their "Genera Plantarum" have united *Dentaria* with *Cardamine*, arranging the species of the former as a subgenus under the latter. This, with our species, was done by Alphonso Wood in his "Botanist and Florist" in 1870, and he is credited with the names under *Cardamine*.

The only differences between the two genera, at least so far as



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