of the plats is such that the currents of air hugging the outside of the curve as they enter the shaft will have a tendency from the west wall toward the center. Moreover, it appears that this tendency will be stronger close to the wall than a little distance away. When therefore on the 9th of January, the west wire was moved eastward, lessening the distance between the lines, the wires hung more nearly parallel than when this wire was close to the wall of the shaft.

It seems therefore that a very simple cause was at the bottom of the divergence. The remarkable fact is that the currents of air should be so constant in their action. When, however, the great depth of the shafts is considered, also the constancy for considerable periods of time of the temperatures which may influence these currents, it seems reasonable that this steadiness should exist.

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SEX IN SEED PLANTS.

Probably everyone who has tried it will say that it is not easy to teach students the relation between pteridophytes and seed plants. Yet by following closely the origin of the sporophyte and its gradual evolution the subject can be made clear if all conditions are favorable. One important condition is that the text-books consulted by the student shall be perfectly clear, that there shall be no confusion of terms.

In popular accounts of plants, as in popular works on science generally, one must expect to find technical subjects treated in rather offhand fashion. But in works planned for college students it does not seem unreasonable to ask for simple accuracy. Now it has long been known that, among the seed plants, 'the plant' is the sporophyte, a non-sexual organism. The stamens therefore cannot be male organs nor the carpels female organs. Placing the pollen upon the stigma is not fertilization and every botanist knows it. There are no such things as male and female flowers, nor flowers which are unisexual or hermaphrodite.

Notwithstanding these well known facts, many botanists continue to use these inaccurate expressions: Practically all of the European botanical journals are serious offenders. In our own country the first class journals use the modern terminology but many of the most widely used text-books do not. The most recently issued American text-book, a work intended for university students, contains the misleading and irrational terms mentioned above.

Methods of teaching botany are frequently discussed at educational conventions. To the writer it seems that what we need is not some new and fancy method of teaching but a knowledge of facts by the teacher and an ability to select a text-book which is clear and accurate in its terminology—not muddled and confused.

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HARVARD COLLEGE OBSERVATORY ASTRONOMICAL BULLETIN.

The determination of the law governing the variation in light of the planet Eros (433) is one of the most interesting problems in Astronomical Photometry. A similar variation in light of the planets Sirona (116) and Tercidina (345) has been announced by Dr. M. Wolf, of Heidelberg. Both objects are favorably situated for observation this summer. The opposition of Sirona occurs on June 15, 1902, Magn. 10.9. Accordingly the following ephemeris for Greenwich Midnight has been computed by Mr. F. E. Seagrave, of Providence, R. I., from the elements given in the Berlin Jahrbuch for 1904.

EPHEMERIS.

1902.	J. D.	R. A.	Dec.	Log r	Log Δ
		h. m. s.	° ′ ″		
May 26.5	241 5896	17 53 45.8	—24 54 30	0.45135	0.27197
June 5.5	5906	17 45 10.2	—25 5 25	0.45349	0.26518
June 15.5	5916	17 35 36.5	—25 12 39	0.45560	0.26468
June 25.5	5926	17 26 7.8	—25 15 52	0.45767	0.27063
July 5.5	5936	17 17 43.2	—25 15 49	0.45969	0.28260

Photographs taken at Cambridge on June 5 and June 8, 1902, with the 8″ Draper Telescope, indicate a correction to this ephemeris in R. A. of +0.1m, and in Dec. of —1′. Photographic enlargements of this region will be furnished to observers who will undertake the required observations.

The opposition of Tercidina occurs on August 3, 1902, magn. 11.5, in R. A. 20h 50.4m, Dec. —0° 40′. Daily motion in R. A. —0.9m, in Dec. —4′.

EDWARD C. PICKERING.

A GRADUATE SCHOOL OF AGRICULTURE.

THE first session of a graduate school of agriculture held under the auspices of the Ohio State University, and with the cooperation of the United States Department of Agriculture and the Association of American Agricultural Colleges and Experiment Stations, will open at Columbus on July 7 and will continue for four weeks. The purpose of the school is to give advanced instruction in the science of agriculture, and particularly in the methods of investigating agricultural problems and teaching agricultural subjects. Only persons who have completed a college course and taken a bachelor's degree, or who are recommended by the faculties of the colleges with which they are associated, will be admitted to the privileges of the school. Instruction will be given in four courses—agronomy, zootechny, dairying, and animal and plant breeding. The courses in these subjects will run parallel; except that the course in breeding will be so arranged that it can be taken by students in any of the other courses. The Saturday morning periods will be devoted to lectures and conferences on agricultural pedagogy and special topics of general interest. The equipment of modern dairy apparatus and machinery and apparatus for instruction in soil physics is especially complete. Some of the apparatus used in the investigations of the Bureau of Soils of the U. S. Department of Agriculture will be transferred to Columbus for the use of the school. This bureau is now conducting a soil survey of the region in the immediate vicinity of Columbus, and the students of the school will have an opportunity to observe the field methods of this survey.

The breeders of Ohio will contribute live stock for judging and demonstration purposes in connection with the courses in zootechny and animal breeding. An especially selected library of works on agriculture and agricultural science will be provided.

Dr. A. C. True, chief of the Division of Agricultural Colleges and Experiment Stations of the Department of Agriculture, is dean of the school. The faculty will consist of about thirty instructors, including the heads of the agricultural departments of state universities and agricultural colleges and the directors and other officers of experiment stations in different parts of the country, as well as chiefs of bureaus and other officers of the U. S. Department of Agriculture.

SCIENTIFIC APPOINTMENTS UNDER THE GOVERNMENT.

SEVERAL positions in the scientific departments of the government will be filled as the result of civil service examinations in July.

On July 10 an examination will be held to fill three vacancies in the position of laboratory assistant in the National Bureau of Standards, at a salary of $900, $1,000 and $1,400 per annum, and to other similar vacancies as they may occur.

The examination will consist of the subjects mentioned below, which will be weighted as follows:

Education and training, including training in mathematics and mathematical physics. (State all courses in these subjects taken in college or later.)	20
Experience, including (*a*) laboratory work in electricity and general physics done in college or later; (*b*) any other experimental work or original research; (*c*) other experience likely to be helpful in the position of laboratory assistant	30
One or more of the following optional subjects: (*a*) Theoretical and applied electricity and electrical testing; (*b*) Theoretical and experimental optics; (*c*) Mechanics of solids and fluids with applications to the testing of weights and measures	50