

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 off-hand 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 $\Delta$
			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