and reference works is well over 100 years out-of-date.

The story of sexuality in flowering plants is a fascinating story, but it ought to be told well and accurately and to students for whom it is meaningful. Therefore, let us stop teaching about sex of the flowering plants, that is, unless it is taught with understanding and in the image of modern-day science.

■ REFERENCES

1. Dodd, John D. Form and function in plants. Ames, Iowa. The Iowa State University Press, 1962.
2. Emerson, Fred W. Basic botany. New York: The Blakiston Company, Inc., 1954.
3. Hill, J. Ben, Lee O. Overholts, Henry W. Popp, and Alvin R. Grove, Jr. Botany. New York: McGraw-Hill Book Company, Inc., 1960.
4. Sarton, George. A history of science. Cambridge, Massachusetts: Harvard University Press, 1952.
5. Taylor, William T. and Richard J. Weber, General botany. Princeton, New Jersey: D. Van Nostrand Company, Inc., 1956.

GIBBERELLIC ACID

Gibberellic acid, a plant growth hormone, can either improve or harm growth, depending on many factors. These are some of the restrictions suggested by research findings of University of Wisconsin horticulturists J. M. Bostrack and Burdean E. Struckmeyer.

Three different concentrations of gibberellic acid were tried on three common kinds of garden plants: coleus, snapdragon, and salvia. The solution was sprayed on the leaves of the plants three times a week during the test period.

The plants responded best to gibberellic acid at a strength of 50 parts per million. Gibberellic acid treatments at 100 or 500 parts per million produced adverse effects on plant growth. Leaves took an unusual shape and size, and stems were thinner than those of untreated plants. At higher concentrations of gibberellic acid, root growth was inhibited and plants were shorter than those treated with 50 parts per million.

Side shoots of snapdragon plants treated with gibberellic acid showed gradual weakening, degeneration of tissue and hung down.

From the experimental results, gibberellic acid at 50 parts per million solution appears to be the right strength for treatment of garden plants. However, Bostrack and Struckmeyer say that even at this strength, gibberellic acid produces different responses from different species of plants.

Several factors appear to influence plant growth response to gibberellic acid. Some of these factors are the kind of plants, the strength of acid, the plant's stage of maturity at the time of treatment, and environmental factors.

All these suggest that ornamental plant growers must use gibberellic acid judiciously as a growth stimulant.

TIME OF DAY AFFECTS INSECTICIDE

The biological clock that regulates an insect's daily activities can tell scientists, farmers, and homemakers when to spray for the best kill.

More houseflies and cockroaches died after spraying at 4 p.m. than at any other time, ARS entomologist W. N. Sullivan, Jr., discovered in tests at Beltsville, Maryland.

The insects' vulnerability fluctuates because their daily activity varies in a 24-hour cycle, called circadian rhythm, that is controlled by some unknown mechanism. The fly appears to be most active and the roach to be starting its most active period in late afternoon, their most vulnerable period.

Killing the pests at this time produces a greater kill with less insecticide.

The fly and roach tests were made indoors only. To make sure his findings indicated the influence of circadian rhythm, Sullivan confined the insects to large chambers where he could control such variables as light, darkness, and temperature that "set the clock" for the insects. The insecticide used was a pyrethrum aerosol.

Tests ran 24 hours a day for up to three days, in a series of experiments over a two-year period. More than 4,000 roaches and 20,000 flies were tested.

Scientists must now determine how much less pesticide is needed when insects are sprayed at the time of peak vulnerability and whether results will be the same on insects sprayed outdoors.

TEETH: GENETIC AND ENVIRONMENTAL FACTORS

The size and shape of teeth and the width and length of the dental arch are mainly influenced by genetic factors.

Dr. Frans P. G. M. Van der Linden of Mymegen, Netherlands, said that a permanent interaction between genetic and environmental factors, both of a continually altering nature, determines the dentofacial morphology in an individual's every moment of life.

Research conducted over the last 20 years indicates that genetic factors seem to have the greatest influence and environmental factors appear to be of minor importance.