



You and Phenology

► IF YOU have ever taken note of the date on which the first robin appeared in your neighborhood, or the first pussy-willows or skunk-cabbages appeared, you have been a phenologist.

Phenology is one of the most fascinating of the open-air sciences. It consists essentially in the systematic observation of the dates on which things happen: the first robin, the first violet, the first oak leaves, the first mosquito.

It can go on all season: the first corn tassel, the first goldenrod, the first wild aster. As the year grows older, last things become worth noting: the last gentian, the last flight of wild ducks, the last housefly.

The word phenology comes from a Greek root meaning to disclose, to make visible or manifest. It is related to the common word, phenomenon, and to the post-Christ-

mas feast of the Epiphany. (Incidentally, watch typists and printers who meet the word for the first time, lest they slip in a falsifying "r": phenology has no more to do with phrenology than entomology has to do with etymology.)

Phenology is a practically useful science as well as a fascinating hobby. Its pragmatic value is well demonstrated by its antiquity. Farmers' and woodsmen's lore is largely rough-and-ready phenology; Virgil's *Georgics* is an early textbook on the subject.

The Bible is full of phenology, especially the New Testament parables: "Now learn a parable of the fig tree: When his branch is yet tender, and putteth forth leaves, ye know that summer is nigh."

Your own phenological notebook can be as full or as simple as suits your own convenience. The important thing is to make it a year-to-year undertaking. Down one side list all the birds, flowers, trees and so on that you intend to watch, for first appearance, first nest, first eggs, first fledglings, first flowers, first leaves, first fruits, first signs of ripening, etc. Rule columns for each year, from 1953 until you are so old your eyes won't serve you any more, or your legs carry you afield.

Especially worth-while kinds of phenological observations are those that are made on the same individual organism, if it is one that stays put. Trees are especially well suited to this kind of check-up, being both long-lived and firmly anchored.

If you have a favorite elm or maple in your front yard, a pet apple or cherry tree on your lot, a familiar dogwood or hickory in the woods, it will become a better, more intimate neighbor than ever if you make a habit of asking it from time to time, "How are you feeling this spring? How did you come through the winter? Are all the little apples growing nicely?"

There can be a lot of fun in phenology.

Science News Letter, April 11, 1953

BIOCHEMISTRY

Metal in Kidney Startles

► THE "MOST startling discovery" of high concentrations of the poisonous metal, cadmium, in normal human kidney tissues was announced by Drs. Isabel H. Tipton, W. D. Foland, Franklin C. Bobb and W. C. McCorkle of the University of Tennessee at the meeting of the American Physical Society in Durham, N. C.

Cadmium is considered poisonous if it is taken in food. Further apparent danger from it in the body lies in the fact that it has a high capture cross section for slow neutrons with resulting gamma radiation, such as that from radium or atomic bombs.

The Tennessee scientists found more than 1,000 parts per million of cadmium in every kidney specimen examined. The finding was made in spectrographic analysis of normal human tissue for trace elements. This work is being supported by the health

physics division of Oak Ridge National Laboratory. The resulting information is used in calculating maximum permissible concentrations of radioactive isotopes that can be swallowed or inhaled without injury from ionizing radiations.

Cadmium was also found in lesser quantities in most samples of liver and pancreas. But 10 to 50 times as much was found in all samples of kidney tissue.

So far as Dr. Tipton and associates know, cadmium has never been assigned any role in body chemistry. It has been detected in human tissue before but has not previously been measured.

The kidney and other tissue specimens they examined came from 42 individuals from Boston; Columbus, Ohio; Memphis, and Birmingham, Ala.

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SURGERY

Adrenal Extracts Save From Surgical Shock

► PATIENTS IN danger of death from surgical shock, either on the operating table or some hours later, can be saved in many instances by extracts from the adrenal glands besides the epinephrine, or adrenalin, commonly used, Dr. Mark Hayes of Yale University School of Medicine, New Haven, Conn., reported at a meeting of the American College of Surgeons in Los Angeles.

Cortisone, one of the adrenal gland hormones, can help but is not enough by itself because it takes too long to act—six to 24 hours.

A close check during the operation on a blood count for acid-staining white cells as well as on the patient's blood pressure will warn the surgeon when the adrenal extracts are needed. An increase in the acid-staining white cells accompanied by a drop in blood pressure shows that the adrenal glands are inadequate to cope with the strain of the operation, and that the patient must have more adrenal hormones to survive.

Dr. Hayes reported extensive operations during which shock occurred three and four times. Each time it was overcome by prompt injection of adrenal hormones.

If before the operation there are signs that the patient will suffer shock, Dr. Hayes gives cortisone and the adrenal-stimulating pituitary hormone, ACTH, hours in advance to build up a reservoir of the hormones the patient will need during the operation.

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