

and a meal suitable for livestock feeding produced from the residue.

Soil Chemistry

Botanists can give chemists some useful pointers when it comes to finding out what's wrong with a given area of soil, Prof. Walter S. Eisenmenger of Massachusetts State College indicated in an address before the meeting. A man with a well-trained eye for plants can tell, by the presence or absence of certain species, a good deal about the chemical state of affairs down at root level.

In general, wild plants are more sensitive indicators of soil chemistry than cultivated plants, Prof. Eisenmenger stated, and he attributed this to the long cen-

uries since he first tamed them. Among the wild plants, the species farthest down on the ladder of evolution are the most responsive.

Fissionable Matter

A preview of what plenty of fissionable materials can do towards revolutionizing everyday life was provided by a paper presented at the meeting by Dr. C. L. Comar and Dr. George K. Davis of the University of Florida. They demonstrated by means of "tagged" atoms of artificially radioactive cobalt that this element, needed in minute amounts to keep animals healthy, must be supplied to cattle constantly because they have no way of storing reserve supplies of it in their bodies.

The cobalt used in these experiments

was made radioactive in a cyclotron, but larger supplies at much lower cost should soon be made available as the country's U235 and plutonium production facilities become available for turning out radioactive elements for scientific research purposes. Not only the relatively minor element cobalt but also such elements as phosphorus, calcium, potassium and sodium, all of major importance in animal and plant physiology, should soon be available cheaply and in quantity for use in experiments designed to answer old riddles in life processes, and to make the answers significant in increased food production and better health.

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INVENTION

Optical Canes to Aid Blind

➤ A BLIND MAN, using a seeing-eye optical cane, may soon be as familiar a sight on crowded city sidewalks as the uncertain tapping of a blind man's stick or the gentle tugging of a seeing-eye dog.

An experimental sensory aid for the blind that uses a beam of light to accurately detect the distance and direction of all obstacles within 20 feet is being perfected by the Signal Corps Engineering Laboratories, Bradley Beach, N. J. It cannot be called radar, but it is like radar in which visible light is used instead of short radio waves.

The size of a loaf of bread, a nine-pound case carried in one hand is connected by a short wire to a single earphone. Trees, people, steps, and other obstacles in the path of the blind user are heard, instead of seen, as coded "dots" and "dashes".

In scanning his surroundings, the blind person turns the case slowly from side to side so that the beam of light projected from the front of the case can reflect any obstacle it meets. The reflected beam of light is changed by a photoelectric cell into coded tone signals in the blind user's earphone.

With a little practice a person could easily determine the exact distance, to within one foot, of obstacles on a city street or in a room strewn with furniture. His sense of hearing allows him to learn to recognize the code signals. While a reflection from an object 11

feet distant produces a tone signal of one "dash", and a reflection from eight feet distant produces a signal of two "dots", a reflection from an object 10 feet distant produces a strong "dash" and two weaker "dots", and a reflection from nine feet produces a weak "dash" and two stronger "dots". The time of travel of the reflected light determines the sound code.

Although the Signal Corps is already producing a few test models for continued experiments, optical canes for the blind cannot be produced commercially until the present apparatus is perfected.

As yet, the device would be of little help to a blind person in crossing streets, since a speeding vehicle would not be detected until it was within 20 feet of him. Before the seeing-eye device is introduced to the public, it will be made lighter and equipped to detect small objects, such as narrow posts and hanging wires.

The problem of filtering out signals from sunlight and ordinary electric light used for illumination has been solved by making the optical cane sensitive only to pulsed light, and then pulsing the beam of light emitted by the case to that exact frequency.

Research is continuing under the direction of Lawrence Cranberg, a civilian Army physicist, who designed the first model.

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