



#### IN A GLASS HOUSE

*This apple tree in the orchards at Cornell University has been entirely enclosed for a study of its life processes. The little house at the left is the control unit which draws off carbon dioxide from the experiment chamber and measures the photosynthesis.*

bile death rate is 4.8 per cent. lower than 1934. We are earnestly hoping that these improvements will continue in 1936. If these gains do extend into that year, a splendid health record is assured.

The country is surely coming out of the depression. Millions of people are improving their economic condition and this should materially help in the drive for better health and a still lower death rate. Communities will now be better able to support their official and voluntary health agencies—services which have proved their worth during these trying years. Now that the country is returning to normal, it should be more easily possible to restore the various health facilities which the enforced economy of the earlier years curtailed. It was never truer than now that public health is purchasable and that expenditures made to support approved health agencies are a good investment, bringing large returns to communities that take the health obligations of their people seriously.

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#### PHYSIOLOGY

### Ear's Pattern of Nerve Cells Like Player Piano Record

“LIKE the paper record for a player piano.”

That was the graphic description of the mathematically precise arrangement of nerve cells in the little known basilar membrane of the inner ear given by Dr. Dorothy Wolff, of Washington University Medical School, speaking before the American Association for the Advancement of Science.

This tiny ear membrane, a most important part of the hearing apparatus, is like a wire bent to form a rather angular C but also coiled spirally so that it is in three planes, Dr. Wolff said. The wire is not smooth, but is strung with “beads” which are nerve cells. These beads are grouped in clusters as are grapes on a stem, the “bunches” growing largest at the lower part of the middle turn of the spiral and at the top.

In the ears of lower mammals, the nerve cells are more closely packed into the canal that holds them than they are

in man or monkey. In rats they are so close that they are forced into a hexagonal shape. In man, they are round or oval.

Nerve fibers are not like straight wires running direct from one point to another, according to Dr. Wolff's description. Instead, they interlace in the most complicated fashion.

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#### PLANT PHYSIOLOGY

### Whole Apple Tree Caged In Glass House For Study

AN APPLE tree that lived in a glass house for a whole growing season, for the sake of science, was described at the meeting of the Botanical Society of America by Dr. Arthur J. Heinicke of Cornell University.

The tree was a normal eight-year-old McIntosh apple tree in the Cornell University orchard at Ithaca, N. Y. It was entirely enclosed in a large glass chamber from May 15 to Nov. 1, 1935. All ingoing and outgoing air handled by the ventilating system was sampled and analyzed, to see what the tree was doing with it. The objective of the large-scale experiment was to study how fast the tree made and used plant food materials.

From the time the leaves first opened until the blossoms had spent their days in the sun and shed their petals, the tree was living on its accumulated assets of food, stored from previous seasons. In the plant physiologist's terms, its respiration exceeded its photosynthesis. From that time on, however, there was a gradual increase in apparent photosynthesis; that is, the tree was making and storing food faster than it was using it up in its own life processes. After the first heavy frost, and especially when many of the leaves began to drop in late October, the tree was unable to manufacture food rapidly, and the season's decline set in.

There were wide variations in the tree's food-making rate from day to day, and at different hours within a given day, determined largely by the duration and intensity of the sunlight and by the percentage of carbon dioxide present in the air. Carbon dioxide, though existing as only a fraction of a per cent., is the basic raw material which all green plants take in from the atmosphere to combine with water in the formation of primary food substances.

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Vitamin A is not effective in preventing colds, medical authorities report.