



PINE CLUSTER—Each pine cone is normal except for its miniature size.

BOTANY

Clump of Cones Found on Pine Tree

► MASS OF 208 pine cones, each bearing seed and normal in every way, except for their miniature size, was found growing on a tree in the vicinity of Plymouth, Mass. Each of the six branches that make up the second whorl from the top of the pitch pine tree was completely clothed with cones for a length of six inches or more. Picture by Edwin F. Steffek of the Massachusetts Horticultural Society.

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INVENTION

African Inventor Offers Solution to Parking Problem

► AFRICA CAN'T BE as vast a continent as the traveloguers used to tell us; it seems to have developed a parking problem. At any rate, a South African inventor, Martin Rickland of Durban, Natal, comes up with a new kind of parking building, on which he has just received U. S. patent 2,412,009.

Cars as they enter are put on platforms like huge trays. These are carried up to any desired level on an elevator. Then they are slid off onto their designated floors, as trays of crockery might be put on shelves. Double sets of rollers underneath facilitate the sliding job.

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OPTICS

Equipment Extends Vision

► A NEW MICROSCOPE that extends the range of human vision and is particularly useful in the study of transparent tissues is being made available by the American Optical Company's Scientific Instrument Division.

A special plate introduced into the objective lens system brings out details otherwise unseen by making the specimen lighter or darker than its surroundings. Transparent living organisms can thus be studied without staining with dyes, a procedure that kills most organisms.

Many significant experiments can now be made in biology and the effects fully studied with the new instrument. Tiny chambers, for example, can be constructed on microscope slides to imprison living organisms. These chambers can be utilized to supply nutrients and oxygen, and to remove toxic excretions. Thus the effect on the organisms of many agents, including drugs and vitamins, can be investigated.

Crystals, otherwise barely visible, can be seen with the phase microscope. Regions within certain substances can be made invisible, facilitating the discovery of impurities.

A diaphragm for controlling light concentrated on a specimen and one of the new diffraction plates placed in the objective lens system transform a standard light microscope into a phase microscope. An auxiliary telescope used in place of

the microscope eyepiece helps center the equipment.

The specimen is first illuminated by a hollow cone of light and a diffraction plate inserted within the microscope objective. Depending on the kind of diffraction plate, any regions within the specimen of different optical path can be made bright on a dark background, or dark on a light background. The invisible phase differences of the light passing through a transparent specimen are converted into differences in light intensity to which the eye is sensitive.

The equipment will be made available for several models of the company's Spencer microscopes. During the last few years a few lucky scientists had their microscopes adapted for study of specific specimens. Different types of the newly-developed diffraction plates were found preferable for various kinds of investigations.

Research conducted by A. H. Bennett, research director of the division, Drs. Harold Osterberg, Helen Jupnik and Oscar W. Richards have made possible the manufacture of phase microscopes in this country. Microscopes of this type were first described about a decade ago by the Dutch scientist F. Zernike. Two phase microscopes were brought back as scientific booty of war from Jena, Germany. They were developed independently by scientists of the Zeiss Optical Works. (See SNL, June 22, 1946.)

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MEDICINE

Eye-Bank Aids Seeing

► HUNDREDS OF PERSONS are now wearing living eyes that do not belong to them by birth. Altogether probably some 1,500 persons have had this experience since the first corneal transplant or eye grafting operation was performed about 100 years ago, Dr. Herbert Katzin, head of the Eye-Bank's laboratory in New York, estimates.

In order to give more persons this chance to see through eye tissues from other eyes when their own fail, the Eye-Bank is giving training, through fellowships, to eye surgeons from other parts of the country, Dr. Katzin reported to the National Society for the Prevention of Blindness meeting.

They perfect their skill through op-

erating on rabbits' eyes. This is even more difficult than operating on human eyes, for one thing because the rabbit's cornea is thinner and tears more easily than human corneas. The bunnies will not lie quietly in bed after the operation, which leads to complications more often than in human corneal grafting operations.

Methods of preserving eyes until they can be used, the usefulness of eyes removed because of disease and determining the suitability of a patient's eye for the grafting operation are among the problems the Eye-Bank is studying in efforts to extend this sight-preserving procedure.

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