



**TV BLOWUP** — Cancer cells are shown magnified electronically 15,000 times on a six-foot screen. The image, used in a demonstration of TV consultation by doctors, was projected in color. A television camera picked up the picture from a microscope.

#### MEDICINE

## Doctors Consult By TV

► COLOR TELEVISION has reached the point where doctors around the country can confer successfully with its aid, exchanging opinions on a particular specimen one of them has under his microscope or on his demonstrating table.

It still has a little way to go before some doctors would be willing to give a definitive diagnosis on the basis of what they could see on their color TV screen.

This sums up opinions expressed by scientists who gathered at the Armed Forces Institute of Pathology in Washington to see the first inter-city consultation and diagnosis.

For the most part, the scientists were enthusiastic as they watched Dr. I. S. Ravdin and his son, Dr. Robert, in the operating room of the University of Pennsylvania Hospital, Philadelphia, remove a bit of tissue which Dr. Robert Horn, pathologist, froze, sliced and fixed on a slide under his microscope.

Color TV cameras picked up the microscopic view for transmission to the group in Washington and to pathologists in Baltimore. Dr. Hugh Grady, director of the American Registry of Pathology, sitting before the TV screen in a studio at station WBAL, Baltimore, was heard to say he could see the "nucleoli" clearly. The nucleoli are very small round bodies inside the nuclei of cells.

Their clear visibility was evidence of color

TV's ability to pick up and transmit fine and often vitally important detail. There was agreement among the scientists in the three cities on a diagnosis of cancer.

Less agreement and good-natured "kidding" took place when pathologists at the Naval Medical Center at nearby Bethesda, Md., put slides under their microscope for color TV transmission to the group at the A.F.I.P. building at Walter Reed Army Medical Center. The Navy group deliberately picked some tough ones. When asked for a diagnosis from one of the slides, two pathologists at the conference answered they would like to see the slide under their own microscopes. The Navy doctor answered, "You are seeing it through a microscope."

Disagreement on one slide was definite and would have been serious had it been up for long-distance diagnosis on which to base treatment. In that case, one scientist at the conference called the specimen "benign," meaning harmless, whereas another stated definitely that it was "malignant," or cancerous.

Practice and experience with this new medium apparently will be needed by the doctors. One pointed out that green was a poor background color for most pathologic specimens which would be red themselves. Another said teamwork would be needed between doctors in different cities in learn-

ing each other's way of handling specimens so that slight individual differences would not interfere with interpreting what was being seen on the TV screen.

While the consultant could see the specimen on a broadcasting studio's screen or on his own home or office color TV set, hospitals wanting the benefit of color TV consultation and, perhaps, diagnosis will have to install cameras and equipment for transmission over closed circuits.

The Philadelphia-Baltimore-Washington hook-up was an RCA presentation while CBS presented the Bethesda to Washington part of the program.

Science News Letter, January 29, 1955

#### ENGINEERING

## Nautilus Goes to Sea To Test Equipment

See Front Cover

► THE WORLD'S first atomic powered ship, the U.S.S. Nautilus, cut through the waves of Long Island Sound in its first series of trial sea runs, as shown on the front cover of this week's SCIENCE NEWS LETTER.

Weighing 2,800 tons, the blunt-nosed submarine has a nuclear steam generating plant that could propel it around the world without refueling.

The purpose of the runs were to check the engines, steering equipment and electronic devices under sea conditions. The apparatus had previously undergone wet-dock tests.

The sub is also equipped with a conventional engine that would take over if the atomic engine failed. The \$40,000,000 vessel was made ready last fall but sea trials were delayed because the wrong kind of piping had been installed.

Science News Letter, January 29, 1955

#### ENGINEERING

## Electronic Computer Aids Better Lighting Designs

► TO AID architects in designing better-lighted schools, offices and homes, an analogue computer that can electronically simulate design factors influencing illumination has been developed by Philip F. O'Brien of the engineering department of the University of California at Los Angeles.

Colors of ceilings, walls and floors and types of artificial illumination can be changed in the device by a twist of knobs. Other factors influencing illumination such as windows, louvres and overhanging architecture may be represented in the machine.

The device may also aid in color selection for walls and ceiling. It is difficult to predict the exact hue a wall will assume as a result of reflections from the floor. For example, white walls and a red floor may make the walls appear a slight pink color. Such variations can be predicted accurately with the aid of the new luminous analyzer.

Science News Letter, January 29, 1955