

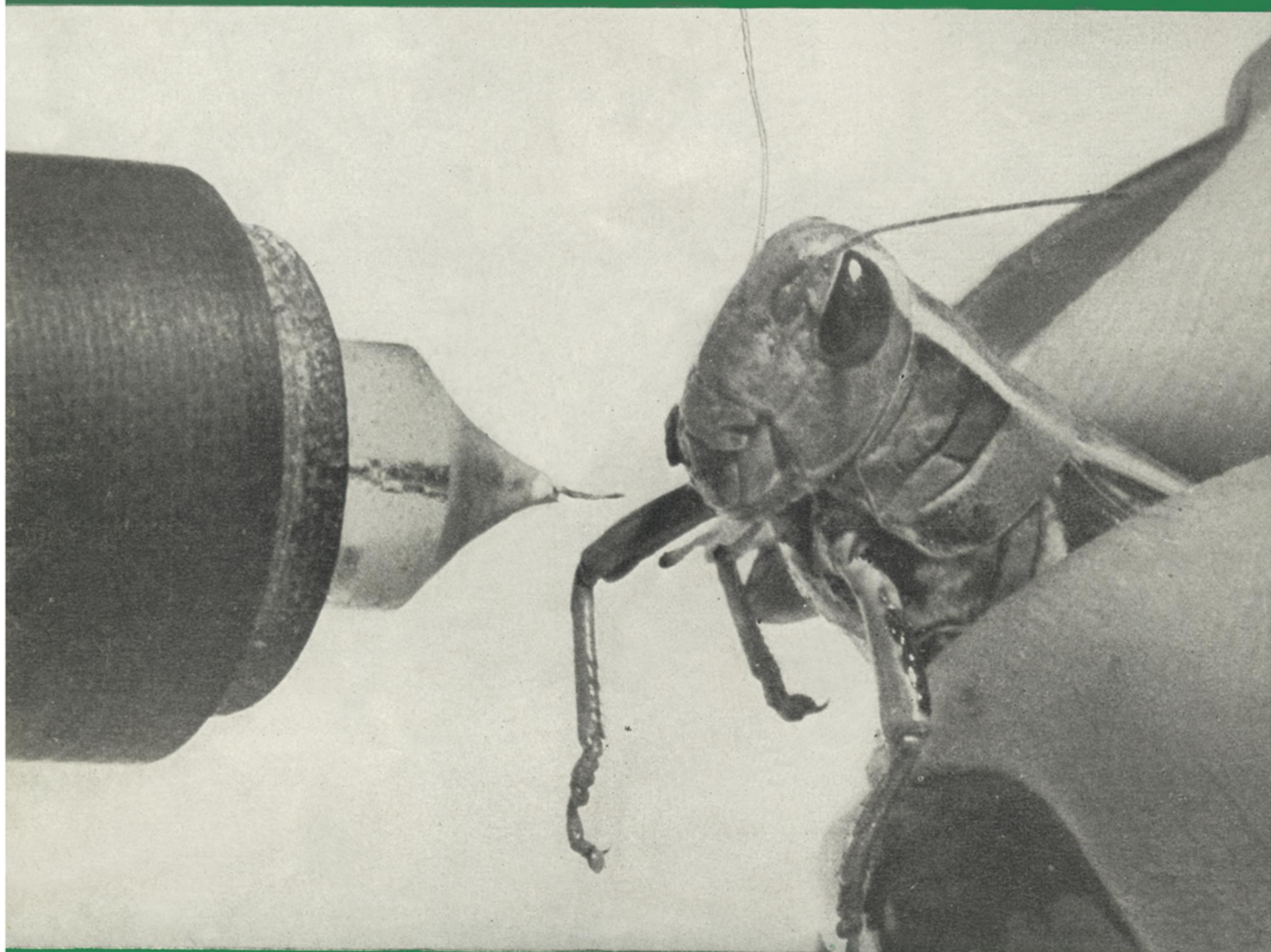
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# SCIENCE NEWS LETTER

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Jumper's Thermometer

See Page 295

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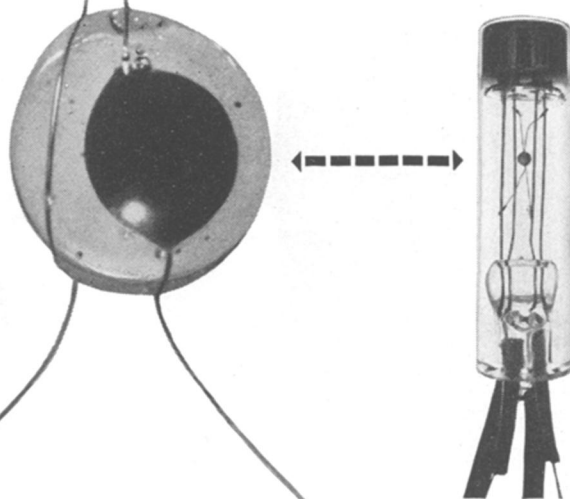
# The Eye That Never Closes

You are looking at a thermistor — a speck of metallic oxide imbedded in a glass bead hardly larger than a pin-head and mounted in a vacuum. The thermistor was developed by Bell Telephone Laboratories to keep an eye on the amplification in long-distance telephone circuits.

When a thermistor is heated, its resistance to electric current changes rapidly. That is its secret. Connected in the output of repeater amplifiers, it heats up as power increases, cools as power decreases. This change in temperature alters the resistance, in turn alters the amplification, and so maintains the desired power level. Current through the wire at the left provides a little heat to compensate for local temperature changes.

Wartime need brought a new use for this device which can detect temperature changes of one-millionth of a degree. Bell Laboratories scientists produced a thermistor which could "see" the warmth of a man's body a quarter of a mile away.

Thermistors are made by Western Electric Company, manufacturing branch of the Bell System. Fundamental work on this tiny device still continues as part of the Laboratories program to keep giving America the finest telephone service in the world.



**BELL TELEPHONE LABORATORIES**

EXPLORING AND INVENTING, DEVISING AND PERFECTING FOR CONTINUED IMPROVEMENTS AND ECONOMIES IN TELEPHONE SERVICE

# many industries use Monsanto Aroclors\*

Eighteen years ago, when Monsanto developed the first Aroclor, it was just a curiosity in a chemical laboratory. Today, the Aroclors comprise a series of more than 25 chemical compounds, serving scores of industries in hundreds of profitable applications.

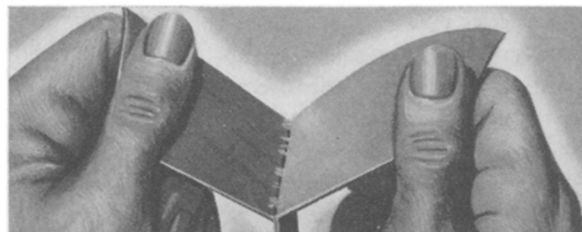
Aroclors are heavier than water... possess great adhesiveness, especially on smooth surfaces... have remarkable penetrating power... are water repellent and flame resistant. Their ability to withstand extreme pressure is unusual... some have exceptional lubricating power... all possess interesting electrical characteristics.

Pictured here are just a few of the ways Aroclors are being used by many manufacturers. As you study these applications, we hope you will ask yourself: "How can the Aroclors benefit me?" Then, we'd like the opportunity to help you find the answer.

MONSANTO CHEMICAL COMPANY, St. Louis 4  
District Offices: Akron, Birmingham, Boston, Charlotte, Chicago, Cincinnati, Dayton, Detroit, Los Angeles, Montreal, New York, San Francisco, Seattle, Springfield, Toronto.

\*Reg. U. S. Pat. Off.

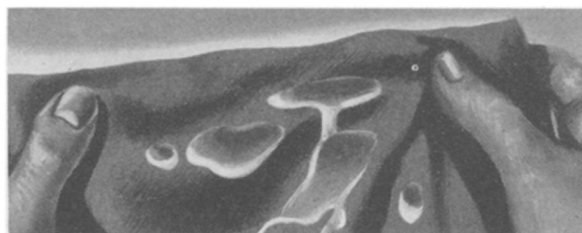
HERE ARE JUST A FEW OF  
THE INDUSTRIAL APPLICATIONS  
OF MONSANTO AROCLORS:



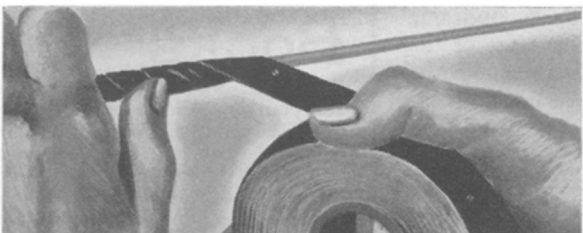
**Adhesive Coatings**... Aroclors give great smooth-surface adhesiveness to pressure-sensitive industrial tapes.



**Flame Resistance**... Combined with other materials, Aroclors impart flame resistance to cloth, paper, wood.



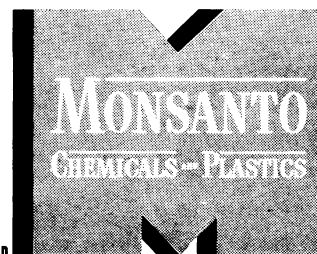
**Moisture Proofing**... Used with waxes, oils, resins, to produce moisture-resisting impregnating compounds.



**Rubber**... **Rubber Substitutes**... Milled into rubber, Aroclors impart permanent tackiness and adhesion.

### What's YOUR problem?

This partial story of the Aroclors is typical of the way countless product developments have been furthered with the help of the many hundreds of Monsanto Chemicals and Plastics... If you have ANY product or production problems involving chemicals or plastics, just write or call the nearest Monsanto Office.



SERVING INDUSTRY... WHICH SERVES MANKIND