

The layman probably asks himself occasionally why scientists work so hard on something for which no immediate application is seen. The answer, of course, is that future undreamed-of applications may come along.

Some day rocket ships will be exposed to temperatures in the realm of absolute zero when they penetrate space. And if you are a passenger aboard that ship, you probably will be glad to know that the design engineers knew the rocket ship's metal body would work properly out there where it would be disastrous for something to go wrong.

**Strange Reactions**

As various substances were chilled to temperatures closer to absolute zero, they sometimes acted strangely. Helium gas became liquid at 4.2 degrees Kelvin, and it acted just like violently boiling water.

But when the temperature was lowered to 2.19 degrees Kelvin, a strange transfiguration came across the turbulent surface of the liquid. The surface became as smooth as glass. And then helium went haywire.

Defying gravity, it climbed up walls of the vessel holding it. It seeped through microscopic cracks in its container as if they were open doorways. If a test tube was

thrust into it, the helium would climb into the test tube and fill it to a level equal to that in the container. If the test tube was removed, the helium climbed back out.

Scientists saw that was a new and distinct state of helium which had not been predicted. They called it "Helium II," and they called the turbulent, boiling liquid "Helium I." They called the strange gravity-defying flow of Helium II "superfluidity" because no apparent friction existed in the liquid.

Nor was helium the only substance that reacted strangely in the realm of absolute zero. Other materials astonished scientists by displaying some odd characteristics of their own.

When some metals were placed in liquid helium, an electric current induced in a closed ring of the frigid metal continued to flow for hours, even days, without stopping after the current source had been removed.

The apparent lack of electrical resistance violated all the rules for current flow at usual temperatures. Under normal conditions, current induced in a closed ring of metal stops almost instantly when the source is removed.

Scientists call that condition "superconductivity." They hope to find a practical use for it sometime in the future.

Science News Letter, July 12, 1952

**PUBLIC HEALTH**

**Do's and Dont's for Polio**

➤ IF POLIO, short for poliomyelitis, or infantile paralysis, is in your community, here are some do's and don'ts suggested by the National Foundation for Infantile Paralysis:

1. Do let the children continue to play and be with their usual companions. They have already been exposed to whatever polio virus may be in that group and may have developed immunity to it.

2. Do teach the children to scrub their hands before putting food in their mouths.

3. Do see that the children never use anybody else's towels, wash cloths, or dirty drinking glasses, dishes and tableware.

4. Do follow your doctor's advice about nose and throat operations, teeth extractions and inoculations during polio season.

5. Do watch for signs of polio, such as headache, fever, sore throat, upset stomach, tenderness and stiffness of back and neck.

6. Do call the doctor at once if such symptoms develop and put the patient to bed away from other members of the family.

7. Don't let the children mingle with strangers, especially in crowds, or go into homes outside their own circle. There are three different viruses that cause polio. Your children's group may be immune to one. Strangers carry another to which they are not immune. Being immune or having immunity means protection.

8. Don't let the children become tired or chilled. Overtired or chilled bodies are less able to fight off polio.

9. Don't take the children away from your home community without good cause. Polio time is the time to stay at home and keep with everyday companions.

If polio strikes your home, have confidence in your doctor. Call him early. The earlier the care, the better the chances for complete recovery. The child who gets polio has a better than even chance to recover without paralysis.

For more information or help, including financial help, get in touch with your local chapter of the National Foundation for Infantile Paralysis.

Science News Letter, July 12, 1952

**MEDICINE**

**Zirconium Ointment Is Poison Ivy Remedy**

➤ HERE IS good news for poison ivy victims: Now you can get the anti-poison ivy chemical, zirconium, in an ointment with the itch-relieving anti-histamine, Pyribenzamine. (See SNL, Aug. 25, 1951, p. 115.)

This combination, made by Ciba Pharmaceutical Products, is now on the market, and you will not need a prescription to get it from your drug store.

The zirconium in the ointment neutralizes the poison ivy poison, which is an oily material called urushiol.

Science News Letter, July 12, 1952

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