

In working with paper chromatography, experts have learned not to let the colored part touch the water. When the band or spot itself is in the water, the color often leaches out and the experiment is spoiled. The color can move down the paper as well as up.

A square or round piece of paper works well when supported by the rim of a glass. If you cut a tab a quarter-inch wide nearly to the center of one of the squares, leaving the tab attached to the square, the tab will act as a wick when stuck in water. In this case the spot of color can be placed high on the tab, about where it joins the paper.

Another good trick is to cut a hole in the center of one of the squares and outline with ink or dye. A wad of cotton placed through the hole will draw the water up onto the filter paper so that the colors spread out.

Cut into one-inch squares a large quantity of the paper you found most satisfactory and pile one on top of the other until you have about 200 of them. Place four or five spots of ink on the 20th piece of paper from the bottom. Pile the squares in a jar, add water up to the 10th sheet and place a weight on top so they will be packed tightly together, each touching its neighbor at almost all points.

Screw on the top of the jar to prevent evaporation, but check from time to time to be sure there is still water on the bottom. When the top square has become moist, take out the paper pack and examine the layers.

This experiment demonstrates another technique used in paper chromatography. When performed under carefully controlled

conditions, specific chemicals will often be found on separate sheets of paper.

After you have tried inks, experiment with vegetable dyes and water colors to see which ones are pure and which result from a wide mixture of colors. The fuzzy fibrous end of a paper match makes a good substitute for a paint brush.

The juice from beets or carrots is fun to separate into its various colors, as are bright autumn flowers. But again, water does not always make the best solvent in producing the colored bands.

Chromatography as a method of analysis was developed several decades ago by the Russian botanist, M. Tswett. But he used columns of powdered sugar with petroleum ether (lighter fluid) as a solvent. His experiments are now frequently repeated and the techniques he developed used again and again, but it is the simpler paper chromatography that is serving the chemist so well today.

Papers saturated with brown and green water colors, and a generous supply of filter paper have been secured for you by SCIENCE SERVICE so you can separate these colors and the inks you may have around the house into the original colors from which they are made. Little packets of blue copper sulfate and yellow potassium ferrocyanide, which form a dark brown compound, are included in this kit along with full directions for experimenting with them. You can secure the experimental kit for the nominal fee of 75 cents. Write SCIENCE SERVICE, 1719 N St., N. W., Washington 6, D. C., and ask for the Paper Chromatography kit.

Science News Letter, December 8, 1951

MEDICINE

ACTH Good for Trichinosis

► ACTH, HORMONE CHEMICAL famous for its anti-arthritis action, is good medicine for patients with trichinosis, Drs. Michael A. Luongo, David H. Reid and Woodrow W. Weiss of Boston and nearby Waltham report in the *NEW ENGLAND JOURNAL OF MEDICINE* (Nov. 15).

Trichinosis is the disease people get from eating wormy pork that is not thoroughly cooked. Symptoms are nausea, vomiting and diarrhea, lasting a few days. This is followed in a few days or a week or so by pain and tenderness of the muscles with fever and change in the blood cell picture. Swollen, painful eyelids also develop.

Three patients seriously sick with this disease showed "striking" improvement when treated with small doses of ACTH. In one patient, the temperature, which had been up to 106 degrees Fahrenheit, dropped to normal within four hours after the first dose of ACTH. The muscle pain and soreness and tired feeling also were promptly relieved.

Dramatic improvement of symptoms came

quickly also in the other two patients. One man slept for the first time in 10 days.

ACTH is not labelled a "cure" in the report of these cases. Study of these patients and of guinea pigs given trichinosis in the laboratory did not show any change in the response of the body to infection with the worms. But the hormone chemical does help reduce the severe poisoning, or toxic, symptoms of the disease.

These symptoms, suggesting either the action of a poison or a severe allergic reaction, were what prompted the doctors to try ACTH. Another reason for trying it was the fact that in trichinosis certain white blood cells, called eosinophils, are greatly increased in numbers. Large numbers of these cells in the circulating blood are believed a sign that the adrenal glands are not producing enough hormone to meet conditions of stress. ACTH, from the pituitary gland in the head, stimulates the adrenal glands to produce more hormone. When the glands are able to respond to this stimulus, the number of eosinophils drops. This occurred in all three patients.

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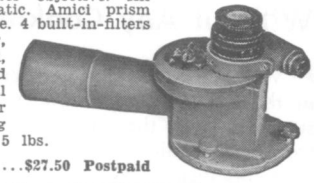
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