

copper bars are hollow so that cooling water can prevent overheating.

Electrical energy for the magnet comes from a 21,000 KVA motor-generator-flywheel unit. A set of 24 large electronic tubes, called ignitrons, serve both as rectifiers, so that direct current is supplied to the magnet, and as inverters so that the major part of the magnetic energy can be returned to the flywheel for storage for the next operation.

Since the presence of air causes the protons to lose energy, they must travel in an evacuated stainless steel box, the vacuum chamber, which rests in the magnet gap. Four large mechanical vacuum pumps located in the center of the ring remove most of the air, but twelve 20-inch diffusion pumps situated outside the ring are needed for final evacuation.

Science News Letter, May 31, 1952

PUBLIC HEALTH

Vaporized Insecticides Are Doubly Dangerous

► A WARNING against improper and excessive use of electric vaporizing devices for insecticides has been issued by the American Medical Association in Chicago.

The devices use DDT or lindane or a mixture of two to kill flies and other flying pests.

The insecticides are placed in a cup and slowly evaporated by a built-in heating element or some other heat source such as an electric light bulb. The insecticide is discharged as a vapor or fumes that ultimately settle in the form of crystals on ceilings, walls and other exposed surfaces. These may later fall on floors or tables, and into food and water.

The dangers from improper use of such devices are that the concentration of the vapor in the air may become too high and the material may get into foods or drinking water in dangerous amounts.

Science News Letter, May 31, 1952

AERONAUTICS

Navy Wind Tunnel Draws Last Breath

► IT HAS drawn its last breath and it is being decommissioned to the historic heaven to which all good Navy "ships" go. The first of the Navy's wind tunnels, which in 1914 was the world's largest, is becoming a mere memory. From its 8-x-8-foot throat, came design data for such famous airplanes as NCs, 1, 2, 3 and 4. NC-4, as oldtimers remember, was the first transatlantic airplane back in 1919.

Located at the U. S. Naval Gun Factory in Washington, the wind tunnel is making way for more modern, more secret structures that help design the new Navy.

Science News Letter, May 31, 1952

PSYCHOLOGY

Find Who "Wears Pants"

Questions to children about who makes what decisions around the home give numerical score showing how well husbands and wives get along.

► IN YOUR family, who decides whose job it is to do the dishes? Who decides when the lawn is to be mowed, whose job it is to put out the milk bottles, where to go for the holidays? Who decides what groceries to buy? Is there disagreement?

Based on these and other similar questions, P. G. Herbst, psychologist of the University of Melbourne, Australia, has developed a scale which will give a numerical score on how well wives and husbands get along. Originally developed for use in the UNESCO study of Australian cultures, the scale is suitable, with minor changes, for use in most western urban communities. It was decided that interviewing either husband or wife might result in biased answers and so the questions were put to the children.

Most common pattern of family life in Melbourne is that in which both husband and wife are their own bosses, but where one dominates the other, it is usually the wife who "wears the pants" of the family.

Friction is greatest where either husband or wife tries to boss the other. It is least where both decide together and work together on family affairs.

Family activities, it was found, can be grouped into areas according to the activity of different family members and leadership of husband or wife.

In social activities such as inviting visitors to the home, all members of the family may take part. Earning the money and deciding how to spend it is generally the husband's responsibility. In fact, in Melbourne, if he gives up this area he generally stops living with his wife.

Household duties divide themselves into man's work, woman's work and common tasks. It is the man who mows the lawn and it is he who decides about it, too. But the wife is the one who does the ironing. Either may take a hand at the dishes.

Both parents look after the children, but decisions about them rest with the wife.

By the time they are four years old children take part in the social activities of the family, but even at that early age, boys have learned to let the woman's work alone and girls do not interfere with the man's work.

Details of the study are published by Tavistock Institute of Human Relations, London, and the Research Center for Group Dynamics, Ann Arbor, Mich.

Science News Letter, May 31, 1952

TECHNOLOGY

Latest Army Wrinkle: Adjustable Locomotive

► THE LATEST army wrinkle is an adjustable diesel locomotive.

It can run on tracks varying from the United States standard up to the widest gages in use. A simple mechanical adjustment of the wheels on their axles does the trick.

Locomotive statistics include a 16-cylinder, two-cycle diesel engine rated at 1600 horsepower; a top speed of 77 miles an hour; satisfactory performance in temperatures from minus 40 degrees Fahrenheit to 125 degrees, and consumption of 40-cetane fuel oil or lower.

Known as the MRS-1, the adjustable locomotive was built to the U. S. Army Transportation Corps specifications by General Motors. Thirteen of the units are scheduled for delivery.

Science News Letter, May 31, 1952



NEW STANDARDS HEAD—Dr. Allen V. Astin, acting director of the National Bureau of Standards since last September, has been nominated by President Truman as the new director. During the war, Astin helped to develop the proximity fuses, which have been rated second only to the atomic bomb in winning the war.