

legal fights that have tested the validity of the patents.

When the returns are in and digested, the report will make illuminating reading.

All who have been granted patents are being urged to respond to the inquiries.

Science News Letter, August 19, 1939

PHYSICS

New Experiments Make Water Flow Uphill

WATER is flowing uphill at the General Electric Research Laboratory in experiments studying the surface tension of liquids. When a cold glass rod, chilled in liquid air, is touched to the bottom of a thin glass slide, on the upper surface of which is a layer of liquid, a small mound of water piled up over the cold spot, reports Allen V. Hershey (*Physical Review*, July 15). By putting tiny particles of bentonite clays in the liquid the flow of liquid to make the mound can be traced. At the free surface the fluid is found to move toward the center of the mound while on the under surface it flows away from the mound. The surface tension forces make the liquid flow uphill.

Surface tension is the molecular force which makes liquid drops form into spherical shape. It also makes possible capillary action by which trees and plants get nourishment from the ground up into their leaves.

The new happening is related to the well-known but little-noted phenomenon of "tears" in strong wine. These tears can be found on the sides of a wine glass above the surface of the wine, where they form in seemingly mystical fashion and grow larger until they flow down again to the surface of the wine, Mr. Hershey reported.

Tears arise because there is a greater evaporation of alcohol from the wine at the rim of the glass than at the center. This lowers the temperature, increases the surface tension at the rim and continually pulls the wine slightly up the surface of the glass. There the wine forms into drops and falls back down as tears. The cold glass rod in Mr. Hershey's experiment likewise lowers the temperature and increases surface tension sufficient to make the liquid flow uphill.

Science News Letter, August 19, 1939

An alligator killed long ago by an Indian's arrow and a white man's musket ball combined was recently dug up near the San Antonio River in Texas.



SPACE FOR AIR

Eleanor Holm's grace in the water shows the art of the successful swimmer. Good swimmers have deeper chests and broader shoulders than poor swimmers, new scientific measurements show.

ANATOMY

What Makes A Girl Excel at Dancing, Swimming, Tennis?

Scientist With Calipers and Tape Measure Discovers Certain Physical Reasons for Success in Sports

See Front Cover

WHAT makes a girl a good dancer? You probably have your own ideas, derived from experiences under a mid-summer moon when the orchestra was "sending" its sweetest, or from a critical eye turned on Ginger Rogers or Mary Wigman.

A scientific eye has lately been turned on the subject and along with tape measure and calipers and other measuring instruments has given at least part of the answer to why one girl is a better dancer than another—or a better swimmer or tennis player or a star on her school basketball team.

The dancing in this case was not the jitterbug variety, although it is likely that the dancers—sophomores and juniors at five leading women's colleges—can hold up their end successfully in jitterbug activities as well as in the more classical forms of the modern dance. So far as this latter type of dancing is concerned, and perhaps it is true for other types also, the girl with long upper arms and long thighs is at a disadvantage.

Physical measurements of girls who were the best and the poorest in modern dance classes at Barnard, Goucher, Smith, Vassar and Wellesley showed

this. The findings and their significance have been reported by Dr. Elizabeth Beall, of Teachers College, Columbia University, New York.

Dr. Beall started her studies because she thought she might find information about girls which would be useful in guiding them into physical activities for which they were particularly suited.

"The emphasis today in physical education in women's colleges," she points out, "is on the adaptation of the program to the individual. Since enjoyment of physical activity is largely dependent upon the success gained in pursuit of it, it is of prime importance to know what factors are related to achievement. Physical educators have increasingly felt the need for more scientific evidence along these lines in order adequately to guide students in their selection of activities."

The relation between stature or body build and success in various forms of athletics has long been studied for men. The girls, apparently, have been rather neglected in this respect. Dr. Beall's studies do not furnish a basis for advising a girl to engage in one or another of the various activities on the basis of body build. She has found certain measure-