METEOROLOGY

Anatomy of Raindrops Studied by Scientists

See Front Cover

➤ SPLISH-SPLASH go the raindrops, as far as ducks, frogs and children know.

But for farmers and scientists, the raindrop is a precious liquid globule that can benefit man by making plants grow, or has destructive force in wearing away large tracts of land.

Basic studies are helping scientists understand the precise mechanics of what happens when a raindrop strikes the soil.

The splash of a raindrop lasts about a twenty-fifth of a second, reported C. K. Mutchler who is working at the North Central Soil and Water Conservation Field Station in Morris, Minn., in cooperation with the Minnesota Agricultural Experiment Station.

When the raindrop first hits a surface, Mr. Mutchler said, the sides of its splash rise at a 90-degree angle. This angle either increases or decreases, depending upon the drop size and the surface water depth, and then returns to 90 degrees before collapsing. Seen on this week's front cover is a raindrop 0.0061 second after impact.

Most of the growth of the splash takes place in the first quarter of its brief life span, Mr. Mutchler reported in the U.S. Department of Agriculture's Agricultural Research, Nov., 1963.

When a raindrop strikes cultivated soil, said Mr. Mutchler, it dislodges soil crumbs and triggers a series of processes that create erosion, gullying and clogging of stream channels and reservoirs with sediment.

More precise knowledge of what happens when a raindrop splashes should enable scientists to devise methods of reducing soil erosion.

• Science News Letter, 84:317 Nov. 16, 1963

METALLURGY

NSF Supports Study Of Alloy Structure

➤ NEW INSIGHT into the talents of atoms for arranging themselves in beautifully symmetrical patterns in very complex alloy crystals is being obtained.

Dr. Sten Samson, a chemist at the California Institute of Technology, Pasadena, is making major contributions to metallurgy by investigating how the atoms organize themselves into geometric, flower-like patterns in certain alloys. Atoms differ in behavior under different circumstances. For instance, chemically identical atoms can differ in size according to their environment.

Dr. Samson, senior research fellow, and Dr. Linus Pauling, recipient of two Nobel awards and pioneer in this field, have received a $41,000 grant from the National Science Foundation which is joining the Office of Naval Research in support of the work.

"These complex structures of intermetallic compounds," Dr. Samson explained, "are of particular value because in them each kind of atom can be studied in many different environments.

• Science News Letter, 84:317 Nov. 16, 1963