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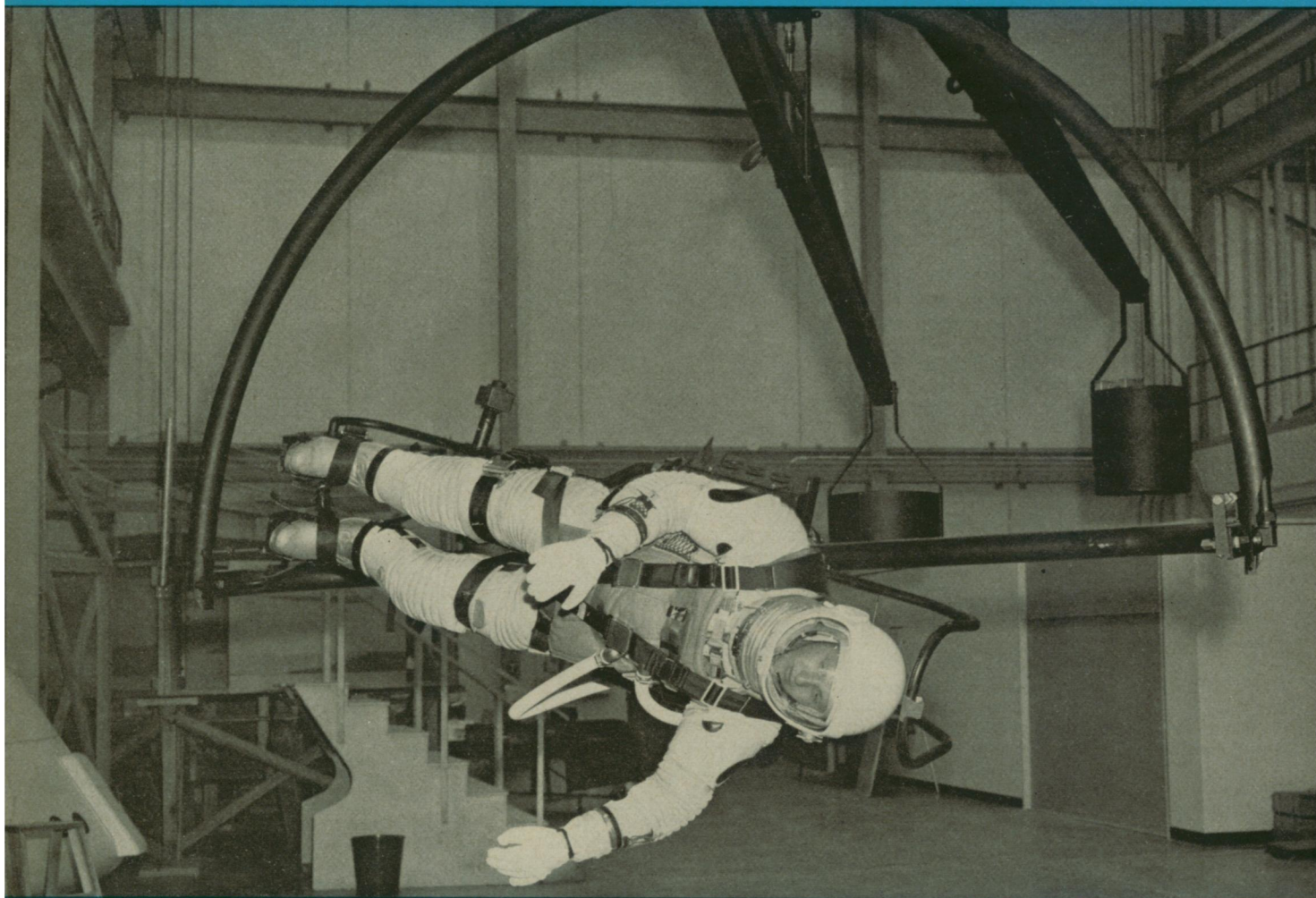
March 27, 1965

VOL. 87, NO. 13 PAGES 193-208

SCIENCE NEWS LETTER

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THE WEEKLY SUMMARY OF CURRENT SCIENCE



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COTTON—Spin your own yarn from cotton fiber. Seven specimens and 12 diagrams explain the elaborate processing of finished fabric from raw cotton. #270

METAL FASTENERS—Though simple in construction, a screw is precisely machined. Many uses of screws and rivets are demonstrated in 16 experiments. #271

WAVE THEORY OF LIGHT—The eye of a small needle will help you understand this age-old theory by means of diffraction and interference. Specially designed materials enable you to observe diffraction patterns, measure the cloud particles around the moon and observe other phenomena in 21 fascinating experiments. #272

DINOSAUR FRAGMENT—A 150 million year old fossil for your science museum together with other interesting fossils to examine and study. #274

COPPER—From natural state through the processes of recovery and refining to finished products you can trace the science of this vital metal with nine specimens and ten experiments. #276

TREE PRODUCTS—Spruce trees yield a variety of products—yeast, organic reducing agent and paper. Experiment with each of these products and learn the fascinating story of their processing. #277

SPACE MATERIALS—Study these unusual materials used in space research that few people have an opportunity to see: copper dipoles like those now orbiting the earth and aluminum film you can see through. #278

POLYMER-FIBER—Cellulose in various stages of the papermaking process combined with different polymer resins can produce a wide range of materials from battery separators to a leather-like substance. 18 experiments. #279

ANGIOSPERMS—27 experiments to perform with different types of seeds in the largest class of all plants of the vegetable kingdom, from the very large scarlet runner bean to the tiny aster seed. #280

CLOTH WITHOUT WEAVING—Non-woven fabrics have been known for some time—felts made from fur, hair or wool. Now there are new types of such fabrics, made from vegetable and synthetic fibers. You can feel them, test them, use them and imagine clothes of tomorrow so

inexpensive that they can be discarded instead of washed. #228

STARS AND CONSTELLATIONS—Can be located and observed with the aid of this star-finder. Planet table allows you to locate other members of the solar system. Make a simple planetarium. 10 experiments. #229

OPTICAL ILLUSIONS—Seeing is often deceiving. You cannot always trust your eyes. A set of 14 drawings shows how misleading figures can be. Bird in a cage, distorted room, the window shape and other illusions. 21 experiments. #224

CODES AND CIPHERS MADE TO ORDER—Principles of Cryptography explained and demonstrated. Can you read this: I HLR TRSA LEUN? A cipher slide-rule allows you to write in your own code. Make your own invisible ink. 12 experiments. #225

CRYSTALS—Can be used to help tell the composition of chemicals. You never see table salt in anything other than a cubic form. Samples of chemicals typical of crystal systems. Patterns for crystal models. 13 experiments. #223

BUILD A SEXTANT—Shoot the sun, determine angles, get acquainted with principles of navigation. All materials furnished. 11 experiments. #234

SEASHELLS—Six specimens and 21 experiments with data on how shells grow, collecting and naming shells, reference books for the identification and habits of mollusks; information on national and local shell clubs. #255

POLYSTYRENE PLASTIC—To acquaint you with an important plastic and how it may be varied to give special purpose materials. Twenty-five experiments demonstrate basic properties. #245

SURVIVAL FOOD—See and learn about the type of foods that would be used in case of a national emergency. Five specimens. 18 experiments. #250

INCENSE—Has excited man's sense of smell as long as civilization has existed. Nine different scents are included plus materials to make your own incense. #254

ANCIENT GEMS—Eight semiprecious stones with 21 experiments to acquaint you with these gems. Materials and instruction in the lapidary art. #246

SPECIALIZED PAPERS—Stretchable paper is one of the eleven specimens included which illustrate the wide applications of paper in home and industry. #217

PAPERMAKING—Make your own paper from the materials included and learn about the commercial production of paper. 10 experiments. #282

PROBABILITY—Materials to introduce you to this fascinating branch of mathematics and demonstrate some of its applications. #262

MARBLE—Eight specimens from various localities the world over to study in 25 different experiments. #261

SILICONES—Seven specimens and 25 experiments illustrate the most important properties of this unusual group of man-made chemicals. #263

TASTE—Twenty-two experiments to test your sense of taste and to demonstrate its importance in our lives. #265

SPACE-AGE MINERALS—From rocks and minerals of the earth are coming many of the new materials used in space exploration. Six specimens. 13 experiments. #266

ENZYMES—Experiment and learn the properties of the four different enzymes included and determine the ingredients of the unknown specimen. #269

SILK—This interesting fiber is traced from the silk cocoon to finished fabric. Five specimens. 27 experiments. #264

MAPS & CHARTS—Look at the world from above the north pole as projected on a flat surface. The story of map making as demonstrated by seven specimens. #268

MATHEMATICAL PAPER FOLDING—Mathematics becomes shapes by constructing models using plane and solid geometry and even algebra. #267

TRIBOLUMINESCENCE—Strike two pieces of quartzite together and see the spark of light and note its color. The light is produced by mechanically deforming crystal structures. 24 experiments to perform dealing with this fascinating phenomenon. #281

IT'S ALL DONE WITH MIRRORS—Make a heliograph and send code messages to a friend. Construct a periscope, a stereoscope and a simple kaleidoscope. The science of plane mirrors made simple and fun in 15 experiments. #239

MINUTE SEEDS—350,000 of them weigh one ounce. The plant from one of these tiny seeds is 20 million times the weight of the seed. Tobacco culture demonstrated by 21 experiments. #258

COMPUTATION—Learn to use the slide rule, Napier's rods and various other computation devices to aid you in mathematical calculations. #273

CURVES—Using straight lines construct curves by curve stitching and paper folding. Diagrams will help you make conic sections and relate them to each other. #284

HEXAFLEXAGON—Nine experiments with paper-folding. Six equilateral triangles form a hexagon, the structures have the ability to flex, hence the models are called hexaflexagons. #236

SURFACE TENSION—The cohesive forces of the molecules of a liquid are demonstrated through 28 fascinating experiments. #260

SPECTRAL COLOR—Historical data concerning Sir Isaac Newton's relevant early discoveries are interspersed with 20 experiments concerning the spectrum, spectroscopy and diffraction grating. #283

PINHOLE PHOTOGRAPHY—Hobbyists, scientists, tourists and artists have a common interest in photography. The type and quality of their cameras may differ greatly, yet all have their origin in the pinhole camera. Construct a camera and gain an insight into photography from 14 experiments. #285

COAL—Samples of peat, lignite, bituminous coal, cannel coal, anthracite and graphite provide the basis for 21 experiments which teach many interesting facts about this valued natural resource. A map shows distribution of coal deposits in the U.S. #286

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