

Society of Photogrammetry, the first Fairchild Photogrammetric Award from General H. H. Arnold, commanding the Army Air Forces.

Colonel Fitzgerald was formerly senior topographic engineer of the Alaskan Branch of the U. S. Geological Survey; he directed the pre-war as well as the war development of this speedy method of charting the hills and valleys by use of cameras flown high overhead. The new award is to be given annually by the American Society of Photogrammetry.

Science News Letter, February 5, 1944

CHEMISTRY

Paper Tags Being Used For Overseas Shipping

➤ PAPER is now being made to do the job of metal and cloth tags in labeling war materials going overseas. The National Bureau of Standards and co-operating manufacturers have developed a paper material for tags that has very high resistance to tearing and scuffing, dry or wet. It eliminates the further use during the war of cloth, metal, and abaca manila hemp fiber as materials in shipping tags.

Federal specifications for tagboard material, recently issued, substitute non-critical fibers for the manila hemp and secures wet strength, as well as resistance to scuffing, through the use of synthetic resin. The tearing resistance of this board is equal to that of manila hemp board when dry, and when wet it is greater.

Instead of metal eyelets, paper patches affixed with water-resistant adhesives are specified. They withstand submersion in water indefinitely without coming loose from the tags, it is claimed.

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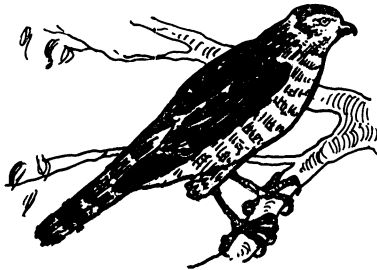
GRAVITATION

This pamphlet on gravitation is the third supplement to *Essays on the New Vortex Atom*. The two previous supplements dealt with the *Heavier Elements* and the *Carbon Atom*. Any or all of these may be obtained free of charge.

The author claims to have accounted for gravitation on a simple hydromechanical basis, capable of experimental test, and not depending on curved space, ether sinks, or other metaphysical concepts. It is the author's contention that gravity is a physical force, and therefore requires a physical explanation.

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Outline for Survival

➤ NAVY FLIERS are now being given special instructions in how to keep alive and find their way back to friends if forced down at sea or in the wilderness. Thereby these highly trained young men are enabled to "live to fight another day," and eventually to see their homes again.

Tricks in the hard trade of staying alive and keeping moving towards base range all the way from finding out which way is south to snaring wary game, from catching fish without a hook to boiling water without a pot. Some of them are things that every Boy Scout knows, others can be learned only from the best-educated savages.

A compendium of this varied but vital knowledge has just been put into book form by two young Navy officers who are twin brothers: Lieutenants (j.g.) Frank and John Craighead. Their book is published by the U. S. Naval Institute. (\$2). In addition to its primary use as a text in the survival course, it is available for general distribution to civilian readers.

The twin authors began their careers in living outdoors while they were still schoolboys in Washington, D. C. They became interested in capturing young hawks and training them for the ancient sport of falconry. This involved the acquisition of a lot of skills, such as cliff and tree climbing, camping out without a tent, and living off the country generally. They have, therefore, first-hand knowledge of the things they write about.

Although such things as fish-hooks, cord and matches are included in emergency kits furnished all fliers nowadays, they are assumed as lost for the purposes of the new manual, and the student of

the art of staying alive is shown how to make his own fish-hook out of bone or shell, or a bit of wood and a thorn; how to make a usable cord out of bark fiber; how to start a fire with a fire-drill or a fire-file. There are directions and diagrams for making a considerable variety of snares and traps. Wild-food lore includes such diverse information as cautions against tropical fishes with poisonous flesh and hints on how to detect the well-camouflaged ptarmigan on an arctic tundra.

Since the new book is not meant to be carried in the pocket and used only when the emergency actually arises, it goes in for completeness rather than compactness, and so tells how to live in any kind of wilderness, whether tropic, arctic, desert, or mountain heights. The list of wild food plants and animals, therefore, is exceedingly varied; yet it is surprising how many things we ordinarily think of as temperate-zone species are to be found on tropical uplands as well.

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AERONAUTICS

Airplane Vapor Trails Formed by Condensation

See Front Cover

➤ VAPOR TRAILS, the beautiful but dangerous "artificial clouds" which sometimes occur behind airplanes flying at high altitudes, are caused only when certain atmospheric conditions exist which are conducive to condensation.

There are two main reasons for the formation of these airplane wakes: First, the exhaust gases from the engines contribute an additional amount of moisture to the already humid atmosphere, and the dust and carbon particles discharged form what meteorologists call condensation nuclei—minute pieces of matter on which water molecules readily collect. Second, the transient reduction of pressure which occurs over the wing of the airplane causes a temporary cooling of the air which also fosters condensation of water molecules.

Why vapor trails could help enemy anti-aircraft spotters is evident from the U. S. Army Air Forces picture of bombers over Bremen, Germany, shown on the cover of this SCIENCE NEWS LETTER.

The B-17 in the foreground, unloading its sticks of bombs which are destined for the shipyards below, is out of the range of the flak bursts seen in the lower right portion of the picture.

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