

Planes Make Pastures

Aviation

Airplanes are making the desert blossom, if not exactly as the rose, at least as first-class pasture land, in large areas of cutover timber land in the Pacific Northwest. They have added to their already long list of accomplishments the role of broadcast sowers of grass seed, and the first experiments have shown them to be much more successful and rapid than hand workers, as well as more economical.

Timber companies in the Northwest have found the problem of the large areas of stripped lands on their hands left after logging operations a serious one. The most economical use appears to be to burn the "slash" and then sow them in grass and use them as sheep or cattle pasture. But the land is for the most part very broken and rough, and men on foot have a hard time seeding it. This method proved to be so slow and expensive that it has been employed only where conditions were ideal.

One corporation hired a plane and pilot from a commercial flying company. It had a special hopper built for releasing the grass seed, which was spread out in a wide stream by the propeller blast. Flying fairly low across the newly burned-over land, the plane sowed the grass seed into the loose ashes, which served as a receptive and well fertilized seed bed.

One plane was able to sow from 150 to 200 acres of rough land a day. The best that a man on foot can do over similar terrain is five to eight acres a day. Even counting the high cost of plane hire or ownership, the flying method of sowing is by far the cheaper, averaging 40 to 60 cents an acre, as against a cost for hand sowing of 75 cents to \$1.25 per acre. Moreover, plane sowing requires only six or eight pounds of seed per acre, while the hand method uses ten or twelve. Since grass seed costs from 30 to 35 cents a pound wholesale, this item is not inconsiderable.

The work of sowing over broken ground is not without its dangers. The planes have to fly fairly close to the ground, and the broken surface and frequent deep side ravines cause all sorts of treacherous air currents. The aviator has to be constantly on the alert, for a forced landing would almost certainly mean a crash. However, all the work to date has been accomplished without accident.

Science News-Letter, April 13, 1929

Fire Enemy of Oil Production

Engineering

Many of the devices used in modern warfare are now employed in American oil fields to fight that deadliest of enemies, fires. Earthworks are thrown up, trenches dug, barricades erected, sappers put to work tunneling, airplane propellers used to divert the intense heat from the workers and gas masks and protective clothing quickly brought into use. It is expensive, but less costly than to let thousands of barrels of oil and millions of cubic feet of gas burn to waste and endanger surrounding property.

Every precaution is taken to prevent oil field fires. Smoking is prohibited; flame is kept from the vicinity of the wells; but there is an ever-present danger of fire from static electricity caused by the friction of steel tools and cables, from lightning, carelessness and from other sources. Ordinary fire preventing and fighting methods are not suffi-

cient. Water has no effect on burning oil and gas, especially when the flames rise high in the air like a gigantic blow torch and radiate heat so intense that a camera lens cracks even when photographers endeavor to take a picture of the spectacle from vantage ground a hundred or more feet away.

Two gushers which were ignited in the Santa Fe Springs oil field, one of the most prolific in the world, burned with such heat that more than a week passed before men garbed in asbestos and constantly sprinkled with water could clear the ground within working distance of the flames. More than a month went by before the flow of oil and gas could be shut off and the blaze thus starved.

The flames quickly melted to wreckage the steel derricks above them and burned to charcoal nearby wood structures. (*Turn to next page*)

Greeks Wore Silk

Archæology

Were the clinging sculptured draperies of the Parthenon Fates made of silk? Were the diaphanous and alluring feminine garments described in Aristophanes' comedies of the same sheer silkiness that arouses diatribes from the pulpits of today? Though silk is not supposed to have been known to the Greeks until the fifth century A. D., Gisela M. A. Richter, of the Metropolitan Museum of Art, is inclined to think that the much-suppressed females of classic Greece knew silk and its beautifying advantages and transparencies long before.

Linen and wool were the common fabrics worn on that luminous peninsula but classical literature contains many references to thin, highly expensive garments called Amorgian tunics, Miss Richter declared recently in a report to the Archæological Institute of America. They are thought to have been made of especially fine linen from the island of Amorgos, a rocky bit of land in the Aegean with, however, only a few tiny valleys fertile enough for the cultivation of flax; hardly enough, according to Miss Richter, to support an important industry of even a high priced article.

Supporting her theory by research among ancient Greek and Latin writers she has established an hypothesis that the (*Turn to next page*)

Hearing Helps in Maze

Psychology

Soundproof material used on the floor of a maze has revealed to investigators, after many years of experiments, a secret by which rats successfully learned the only correct route through the long series of complicated passages of a maze to the single exit.

Dr. John F. Shepard, professor of psychology at the University of Michigan, read a paper before the Michigan Academy of Science, Arts and Letters, stating that rats which had previously learned the maze perfectly seemed utterly lost when the sound of their pattering feet on the floor of the maze was stilled by soundproof layers.

Lengthy experiments indicated that the rats were not finding their way out of the maze by their senses of sight, smell, muscular feeling, or touch. Finally, it was discovered that changing the position of the squares of asphaltic linoleum which covered the floor of the maze caused the animals to be less certain of the direction to take in finding their way. Soundproof floors were installed, and these prevented the rats from learning the route.

Experiments now in progress will determine whether the rats depend solely on their sense of hearing for guiding themselves out of a maze. Since rats are widely used by psychologists in studying such processes (*Turn to next page*)

Conquering Oil Fires—Continued

Others were razed to prevent the spread of the fire. Forty strings of tools and their crews were forced to suspend work in the danger zone, while more than a hundred men turned their attention from production of oil to fire fighting.

A double offensive against the fire was begun. An earth barricade topped by a metal shield was built some distance from the flame and two airplane motors equipped with propellers started in front of it to divert the heat so that workmen might dig a 210 foot tunnel to reach the well casing 50 feet below the surface. Working night and day, they excavated and shored the tunnel, then dug a chamber about the well casing preparatory to tapping it and leading the oil and gas into pipes they laid as they tunneled.

Meanwhile, on the surface, men garbed in asbestos kept wet by fire-

hose and fanned by the airstream of the propellers, crept to the foot of the blaze and repeatedly attempted to install a "Christmas tree", or pipe and valve mechanism which would enable them to shut off the flow of fuel. They faced sudden death from flame or explosion every minute they were at work, especially when the time came to operate the shut-off valves and the danger was enhanced by the fact that the fire, rather than submit to extinction by starvation of its oil and gas fuel supply or of the supporting oxygen, might blow back or shoot out through the joints. Success finally attended their efforts, however, and they extinguished the blaze just before their fellow-workers had completed connections far underground. Man thus has learned to conquer an inferno, but the cost in life, time and money is great.

Science News-Letter, April 13, 1929

Hearing Helps—Cont'd

as learning and memory, a thorough understanding of animal reactions is particularly useful to laboratory workers.

Science News-Letter, April 13, 1929

SIMPLIFIED SOIL TESTING



Improved

LaMOTTE SOIL TESKIT

An ideal outfit for the amateur gardener or farmer for determining the acidity or alkalinity of soils. By a simple test, which consists only in adding indicator solution to a sample of the soil, comparing the color obtained with a color chart and referring to the LaMotte Soil Handbook, one can tell for what plants the soil is suited or what treatment is necessary for changing the reaction to suit the plants one wishes to grow. The rhododendron, azalea, lima bean, pine, etc., require an acid soil, while the rose, alfalfa, asparagus, mountain ash, etc., require a neutral soil. No plant will develop properly unless the soil has the proper reaction.

Price, \$2.00, postpaid in U. S. A.
LaMotte Chemical Products Co.
416 Light St., Baltimore, Md., U. S. A.

Greeks in Silk—Cont'd

havoc-creating Amorgian tunics were made of wild silk introduced from the East, where it was known from the earliest times. The name Amorgian (a specific word for silk appears in Greek only after the Roman era) she accounts for by the fact that the island was a convenient station on the trade route from the East via the Persian Gulf, Babylon and Tyre. It is the next door neighbor of the island of Cos, which by the time of Aristotle was considered the home of Greek silk manufacture, so what was more natural, Miss Richter concludes, "than to call these silk garments Amorgian, just as later the Roman called them 'Coea vestes'. To call a material after a place from which it is supplied is, of course, a well known practice."

The Greeks may also, she added, have learned about silk from their near neighbors and frequent enemies, the Persians, who are known to have been addicted to luxurious silken apparel as early as the fifth century B. C.

Science News-Letter, April 13, 1929

Recently perfected apparatus enables doctors to make a continuous record of the effects of exercise or medicine or disease on a patient's heart.

A German report states that suicide among women of Prussia has increased 157 per cent., whereas male suicides have increased only 29 per cent.

Staff of Science Service—Director, Edwin E. Slosson; Managing Editor, Watson Davis; Staff Writers, Frank Thone, James Stokley, Emily O. Davis, Jane Stafford; Librarian, Minna Gill; Sales and Advertising Manager, Hallie Jenkins.

Board of Trustees of Science Service—*Honorary President*, William E. Ritter, University of California. Representing the American Association for the Advancement of Science, J. McKeen Cattell, *President*, Editor, Science, Garrison, N. Y.; D. T. MacDougal, Director, Desert Laboratory, Tucson, Ariz.; M. I. Pupin, Professor of Electromechanics, Columbia University, New York City. Representing the National Academy of Sciences, John C. Merriam, *President*, Carnegie Institute of Washington; R. A. Millikan, Director, Norman Bridge Laboratory of Physics, California Institute of Technology, Pasadena, Calif.; Dr. David White, Senior Geologist, U. S. Geological Survey. Representing National Research Council, Vernon Kellogg, *Vice-President and Chairman of Executive Committee*, Permanent Secretary, National Research Council, Washington, D. C.; C. G. Abbot, Secretary, Smithsonian Institution, Washington, D. C.; Harrison E. Howe, Editor of Industrial and Engineering Chemistry. Representing Journalistic Profession, John H. Finley, Associate Editor, New York Times; Mark Sullivan, Writer, Washington, D. C.; Marlen E. Pew, Editor of Editor and Publisher, New York City. Representing E. W. Scripps Estate, Harry L. Smithton, Treasurer, Cincinnati, Ohio; Robert P. Scripps, Scripps-Howard Newspapers, West Chester, Ohio; Thomas L. Sidlo, Cleveland, Ohio.

BINDER COVERS

FOR

SCIENCE NEWS-LETTER

Many subscribers have expressed a desire for a convenient binder in which to file their copies of the Science News-Letter. We therefore have prepared an attractive and durable loose-leaf binder-cover of gray leather-like stock, printed in dark green and complete with fasteners. Each binder-cover will hold one volume (six months or 26 issues).

To facilitate punching the issues of the Science News-Letter to fit this binder-cover, a pattern showing where holes should be placed appears each week on the back cover page.

To obtain a binder-cover, send 20 cents in stamps (make them 2s, please), together with your name and address (please print) to

SCIENCE SERVICE

21st and B Sts.

Washington, D. C.