

INVENTION

Paper Ice Cube Tray and Flying Submarine Patented

THE troubles of householders in getting ice cubes out of their freezing trays are going to be over if patent No. 2,162,162, issued by the U. S. Patent Office really works.

Granted to the four-inventor team of Jose H. de Murguiondo, Amalia de Murguiondo Riggo, Nomita von der Heide and Erik von der Heide, all of Washington, D. C., the patent provides for a tray composed of waterproof paper.

That frequent desire to tear up the ice cube tray—now experienced with old-fashioned models—is completely satisfied with the new type. To get out the cubes you simply tear off the paper and out come the cubes. Low cost of the paper trays enables the user to replace them cheaply.

Among other patents of the week was No. 2,162,066, granted to Paul De Asis of Los Angeles, Calif., for a submersible aircraft—or a flying submarine—depending on which way you look at it. At any rate the combination craft goes both over and under the sea. More serious was patent No. 2,162,192 of Ralph John Yoder of Fargo, N. D., for an improved type of hearse equipment for handling corpses.

To Martin Marasco, Parlin, N. J., and Edwin Atkins Merritt, Chevy Chase, Md., was granted patent No. 2,162,178 for a superior type of X-ray shielding compound that consists of plastics and lead powder. Non-adhesive and hand-moldable at room temperature, it has a high stopping power for piercing X-rays.

Science News Letter, July 1, 1939

ORNITHOLOGY

Hoofs Do Not Harm Eggs—Unless Driving Dogs Bark

BIRD rookeries in this country are protected nowadays, almost as a matter of routine. We are becoming increasingly wildlife-conscious—and there is plenty of room, anyway. So why not give the birds a break?

Quite different is the situation in western Europe. Large populations press close upon scant land; the Malthusian nightmare rides hard. So it comes to pass that in some places bird rookeries must also be used as pasture lands. Such a situation obtains on the low flat coasts and on the islands of the North and Baltic seas.

Recently a German ornithologist, Herr Ringleben, of the great bird observa-

tion and banding station at Rossitten, East Prussia, made a study of some of these pastured rookeries, where scores of thousands of gulls and terns have their nests. On some of the islands sheep are pastured, and cattle graze on others.

Neither sheep nor cattle do the nests and eggs much harm so long as they are left to graze in their own unhurried way, Herr Ringleben discovered. But when the herdsmen and their dogs come to the pastures, rounding the animals up and driving them in close herds, they would tramp wide swaths of destruction through the nesting grounds.

Horses, pastured on some of the islands, do not need human stimulus to be troublesome on the rookeries. They are much more nervous than cattle and sheep, much more given to purposeless galloping and sheer "cavorting." Naturally they blunder into a lot of nests.

Fences, both wire and wooden, have been tried as a means of keeping the stock away from the most thickly nested parts of the rookeries. Although successful in this, they have in themselves proved a source of losses, for low-flying birds collide with them, often killing themselves. And as might be expected, fences do not in the least deter prowling poachers out for either birds or eggs. Nothing but strict patrol (which of course is costly) will serve to discourage *Homo predator*.

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ENGINEERING

Sardine Can is Roomy Compared To Wire Cable

DON'T pity the poor sardine! Using a new process of producing paper insulation on a telephone wire instead of wrapping it around afterward, engineers of the Western Electric Company have just created a cable containing 4,242 separately insulated copper wires.

Previous top in wire packing was 3,636 wires to a cable $2\frac{5}{8}$ inches in diameter. The new cable is no larger but contains 606 more wires.

Heart of the new development is a process for forming paper pulp directly on groups of 60 wires passing through a bath of pulp. These strands are twisted two wires to a pair and assembled into the cable which finally is dried out in vacuum ovens.

The saving in insulation thickness per wire is only three one-thousandths of an inch but when repeated 3,636 times in a single cable it results in extra room for 606 more.

Science News Letter, July 1, 1939

IN SCIENCE

MEDICINE

Cancer-Causing Chemicals Bring Prize Award

FIGHTING cancer with test tubes, spectrosopes and chemical retorts has yielded fundamental knowledge on the cause of at least one kind of malignant disease, the kind known as mule-spinners' and chimney sweeps' cancer.

This cancer is caused by irritation of the skin by a specific chemical in coal tar from the soot and oil to which these workers are exposed. The chemical itself has been identified and produced synthetically in the laboratory. It and other similar cancer-causing chemicals, scientists have discovered, are similar in structure and composition to one of the female sex hormones, to bile acid, and to rickets-preventing vitamin D.

The years of research which resulted in these discoveries have also provided scientists with tools for gaining further knowledge about cancer. For their share in this phase of the cancer fight, five scientists at the Research Institute of the Royal Cancer Hospital (Free) of London, England, have been awarded the first Anna Fuller Memorial Prize: Ernest Lawrence Kennaway, director of the institute; James Wilfrid Cook, chemist; Colin Leslie Hewett, chemist; Izrael Hieger, chemist; and William Valentine Mayneord, physicist.

Science News Letter, July 1, 1939

BOTANY

Botanists' Who's Who Now Being Compiled

A NEW international address book of workers in plant taxonomy, geography and ecology is being compiled in The Netherlands. Because of the great increase in numbers of botanical workers it has been found impracticable to attempt including all of them in one volume; it is hoped to get out lists covering the other plant sciences later on.

Questionnaire cards for persons who wish to have their names included in the new list can be obtained by addressing: The Editor, *Chronica Botanica*, P. O. Box 8, Leiden, The Netherlands.

Science News Letter, July 1, 1939

E FIELDS

PALEONTOLOGY

Drought of Ancient Times Recorded in Fossil Mass

DEADLY drought in the Southwest 150 million years ago is recorded in a mass of amphibian skeletons newly brought to the Harvard University Museum of Comparative Zoology from New Mexico.

The animals, somewhat like modern alligators in shape but with much weaker legs and actually more closely related to frogs, lived in pools and shallow streams probably during the Triassic period, earliest of the three ages of the dinosaurs. When drought came, they were crowded closer and closer together. Starvation and suffocation killed them by thousands.

This story of the ancient hecatomb was pieced together after excavations by Mr. and Mrs. R. V. Witter of the Museum staff had revealed the existence of the massed fossil graveyard. One large stone slab bore marks showing the last death-struggles of the trapped animals.

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PHYSICS

Franklin Discovered Lethal Qualities of Electric Shock

BENJAMIN FRANKLIN — colonial America's genial philosopher, diplomat and scientist—was one of the first men to realize the lethal possibilities of a severe electric shock. In his early experiments with the then-new Leyden jars, which stored up electricity, he knocked himself out with a bad shock.

Previously he had killed a large turkey by the same means and says of his own experience, "From this experiment may be seen the danger . . . for it is not doubted, that by increasing the size of the charge it would kill a man, as before it did a turkey."

One may question whether Franklin's experiment was intentional or accidental but there can be no question the intent behind his next experiment in which, as a demonstration, he knocked down six men by shock.

Prof. Dayton C. Miller, veteran physicist of the Case School of Applied Sci-

ence, in his new book "Sparks, Lightning, Cosmic Rays" (Macmillan) quotes from Franklin's own record of this test.

"The knocking down of the six men was performed with two of my large jars. I laid one end of my discharging rod upon the head of the first, he laid his hand on the head of the second . . . and so on to the last, who held in his hand the chain that was connected to the outside of the jars. . . . I applied the rod to the prime conductor, and they all dropped together."

While one may quibble over whether Franklin was thus potentially the "father of electrocution" it is certainly true that he was probably the first man to kill a turkey by electricity. Of the turkey Franklin said, "The birds killed in this manner are uncommonly tender."

A man of more timidity might have stopped studying such dangerous phenomena but Franklin merely extended his range of electrical research and showed the close similarity between the discharge of electricity and natural lightning. Particularly, he noted that one ought to obtain protection from lightning by the use of what later became known as lightning rods. It was Franklin's famous kite experiment, which every school boy knows, that clinched this hypothesis.

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ENTOMOLOGY

Mosquito Eggs Can't Hatch Without Dead Vegetation

MOSQUITO eggs, of certain species at least, do not hatch well in "plain" water, but require the presence of chemical compounds that are produced by dead vegetation, three U. S. government scientists report (*Science*, June 9).

The three researchers made this discovery while working with the eggs of mosquitoes which they tried unsuccessfully to hatch in ordinary tap water. They then tried them in infusions of dead leaves and grass, and obtained much larger hatches.

What the chemicals thus occurring in nature are, they have not yet discovered. However, they have found that the hatch is increased by minute amounts of asparagin and of several other amino acids, which are building-blocks of proteins. It is also increased by potassium phosphate.

The men conducting the researches are C. M. Gjullin, W. W. Yates and H. H. Stage of the Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture.

Science News Letter, July 1, 1939

PUBLIC HEALTH

Lives Lengthened by Public Health Engineers

WE LIVE twenty-one years longer, on the average, than our ancestors of as recent a date as 1880. Our vital resistance is such that we could survive even a severe economic depression without excess disease or deaths. What is responsible for these facts and for the fact that about 768,000 lives are saved annually in the United States by the curtailment of the death rate since only 1900?

The answer is to be found, in the words of Dr. Murray P. Horwood, of the Massachusetts Institute of Technology, in "man's increasingly effective mastery over a defective environment and his genius in developing biological and chemical agents for the prevention and treatment of certain diseases."

Mastery over our environment includes pure, safe drinking water, milk and food; adequate sewage and garbage disposal; homes, streets and workplaces that are free from disease-bearing rodents, fleas, flies and mosquitoes, and are otherwise in a state conducive to health. For all of this we can thank the public health engineer, and his importance to our lives and health, Dr. Horwood points out in the publication, *Science*, will increase rather than diminish.

Neither public health engineers nor any other single group, however, is entirely responsible for the progress that has been made in making life longer and healthier. Doctors, dentists and nurses have played an important part, Dr. Horwood points out. So have the bacteriologists who first discovered that germs cause disease and since have been busy developing vaccines and serums to protect against them. Chemists have contributed their share in developing new remedies for disease and, with nutritionists, in discovering what foods are essential for health. Physicists who discovered and learned how to use X-rays and radium have added their contribution to the saving of human lives. Less well-known but also important are the statisticians who have assembled a vast amount of useful information on causes of death among different groups of people, and the health educators who have taught people how to make use of disease-preventing methods. Epidemiologists, public health administrators and social workers should also be added to the list, and perhaps many others.

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