

num, may be related to the same mineralization that brought the platinum to the surface from the deep-lying hot rocks at some time in the past, Dr. Mer-tie believes. Another type of gold, found in the same area, was brought in by glaciers, from whose deposits the gold was washed into the platinum mining

areas.

Found in woodless, misty rainswept valleys, under several feet of gravel, the Alaskan platinum deposits are producing thousands of ounces of the heavy metal each year, for use in the chemical and jewelry industries.

Science News Letter, June 4, 1938

AERONAUTICS

Place in the Air Predicted For "Windmill" Plane

Plane That Can Take Off Almost Straight Up and Can Hover Low Over the Ground Has Many Uses

WRITE this in your book: a place in the air for the "windmill" aircraft within five years.

Aviation men and others are freely predicting widespread adoption of the new autogiro that is emerging today from years of quiet experimental work without benefit of publicity. A rapidly-growing list of uses is being compiled for new varieties of the "windmill" plane that can do things no ordinary airplane can duplicate.

One of the new autogiros demonstrated by W. Wallace Kellett of Phil-

adelphia, an outstanding designer, took off in 25 feet. It landed almost literally on a dime—the wheels struck the earth and stopped, hardly moving a millimeter.

Up in the air it stood stock still, it moved sideways, it turned as though an axle pierced the fuselage.

And the pilot did all that simply by maneuvering the three whirling blades above the fuselage of the newest type of rotatable wing aircraft.

Abilities such as these have the Army interested. Navy men are curious, too,

and so are foresters, Coast Guardsmen, persons concerned with air mail and others. It will not be long, the autogiro's backers hope, before these uses become realities.

The autogiro has come a long way during the decade since the late Senor Juan de la Cierva, its inventor who was killed in the crash of a transport plane in 1936 in just the kind of accident he sought to prevent with his odd-looking craft, brought it to the United States.

Today, the trim machine demonstrated by Kellett has no wings, depending for its lift entirely on the whirling blades. With a 225-horsepower motor powering a propeller to give it forward speed and turning the overhead blades for the take off, the autogiro can make 125 miles an hour; it can lift more, rise more sharply and quickly than the predecessors which attracted so much attention hardly more than half a dozen years ago.

For Observation

The Army wants it for "spotting" artillery fire and for observation and reconnoitering. The autogiro would also be useful for liaison operations.

The Navy may find it useful for "spotting" naval gunfire for it has the advantage of being able to hover, yet being so maneuverable that it can follow the course of an enemy fleet. In addition, the autogiro is easily carried on a battleship or smaller war vessel. It needs less space to take off than is occupied by the catapults required by present-day scouting planes. In addition, it can land dead on the ship; battleships today must pick up their seaplanes from the surface of the water.

Airplanes are already in wide use for dusting fields with insect poisons, but it is a risky business, moving along at nearly 100 miles an hour only a few feet above the ground. Hence, another use is seen for the autogiro: hovering a few feet above the ground spreading a chemical cloud is not a risky business for the rotatable wing aircraft. Spotting diseased trees has also been successfully accomplished.

Peace Uses

Perhaps chemical forest fire extinction is too expensive to be practical, but the nimble autogiro can bring supplies to forest fire fighters in isolated spots and hover a dozen feet over the men, dropping its load exactly where it is wanted.

Another use may be found in life-saving activities of the U. S. Coast



STRAIGHT UP

The autogiro is shown here rising almost vertically from the landing field. It differs from the Helicopter in that it has a regular propeller to give it forward speed and provide the airstream that whirls the rotor. In the passenger's seat, the Science Service staff photographer snaps a view of the propeller during takeoff.

Guard. Uncle Sam's shoreline guardians make great use of a gun to fire a line to a ship in distress off-shore so that its human freight may be hauled to safety over the breeches buoy. But there are limits to the distance the gun can fire its rope-weighted projectile. The autogiro offers the possibility of carrying the line to the ship farther than the gun can fire it.

Wide attention has been attracted to rotating wing types of aircraft recently in Europe, where the Focke helicopter was successfully flown inside a large Berlin auditorium. A helicopter is a rotating wing aircraft with no regular propeller at all, depending on tilting of the rotor for forward motion.

Mr. Kellett has been in Washington to urge Congress to pass a bill introduced by Congressman Frank J. G. Dorsey of Pennsylvania to allot \$2,000,000 to research in development of the "wind-mill" plane.

Engineering difficulties in the way of the autogiro that its sponsors hope will be at least partially solved with the aid of the appropriation they are asking of Congress were outlined by Mr. Kellett.

Research on which the sum would be spent would be aimed at increasing both the range and payload of today's autogiros, as well as their speed. The rotor atop the present two-seater is 40 feet in diameter. Larger planes will require larger rotors still, introducing an engineering problem of no mean proportions, he indicated. A more efficient lifting profile for the rotor must also be found. *Science News Letter, June 4, 1938*

CHEMISTRY—BOTANY

Rare Earth Elements Found In Leaves of Hickory

CHEMICAL elements so rare that they are merely names in a list even to most chemists have been found in the leaves of a hickory tree growing on a mineral vein in a Virginia mine. Analysis by the delicate spectrographic method has betrayed their presence in at least trace quantities, it is announced (*Science*, May 20) by Drs. W. O. Robinson and Richard Whetstone of the Bureau of Chemistry and Soils, and Dr. Bourdon F. Scribner of the National Bureau of Standards.

The elements all belong to the group known as the rare earths. They are listed as follows: cerium, lanthanum, praseodymium, neodymium, yttrium, samarium, europium, gadolinium, dysprosium, erbium, ytterbium.

Science News Letter, June 4, 1938

GENERAL SCIENCE

Quints Identical, Patterns Of Finger Bases Indicate

Royal Society of Canada Hears of Hereditary Ill As Cause of Infant Mortality; Dust a Weapon for Dust

CANADA'S most famous babies, the Dionne quintuplets, all developed from the same fertilized egg-cell, a new type of fingerprint identification indicates. The new method was described by Prof. John W. MacArthur of the University of Toronto, speaking before the Ottawa meeting of the Royal Society of Canada.

Prof. MacArthur has paid special attention to the skin patterns of the lower joints of the fingers, instead of the more usually studied tips. He finds that the patterns there are even more strongly similar, in twins and other multiple births, than are the tip patterns.

The Dionne children resemble each other very closely in these third-joint prints. No two of them differ by more than 16 per cent. of the patterns, while each of them differs from her brothers and sisters, in the rest of the Dionne family, by about 54 per cent.

Babies in certain doom-haunted families die at an appalling rate, even before birth, from an inherited disease that puts the wrong kind of cells into their blood, Dr. Madge Thurlow Macklin of the University of Western Ontario stated.

The disease is known to physicians as erythroblastosis fetalis. Its effect is the introduction into the blood of an abnormal proportion of colorless cells from the bone marrow, replacing the necessary red blood cells.

"This disease has been stated to be a more potent cause of infant mortality than syphilis," said Dr. Macklin. "It is suggested here that not only is the condition responsible for a high death rate among live-born infants, but for the deaths of many fetuses at varying stages of development as well; so that many miscarriages, premature and still-births are caused by it."

The malady is inherited. Approximately half the children of a family in which the defect has appeared will be affected.

Zinc sulphate solution, similar to the nasal spray used as a protection against infantile paralysis, had a damaging effect on the lining tissues of the nose when used on white rats, Dr. Carl G. Smith

of the University of Toronto reported. The damaged lining was eventually replaced by a layer from which the sensory cells were absent. A permanent loss of the olfactory nerve fibers occurred, with atrophy of the region of the brain where these fibers end. The animals' sense of smell was thus destroyed.

Dust against dust, is the possible safeguard against silicosis suggested by researches of Dr. R. C. Sniffen, H. L. Collins and Miss H. E. Williams of the Banting Institute. The three researchers found that animals exposed to a silica dust similar to that found in many mines and quarries readily contracted silicosis, but that when aluminum powder was mingled with the flying dust the animals were protected.

Tumor growth in human flesh followed the injection of a chemical that causes rapid growth of plants, in an unintentional experiment reported by Dr. J. H. W. Willard, of the University of British Columbia. While working with some plants, Dr. Willard accidentally jabbed some of the compound into his own hand. A tumor developed near the tiny wound. Fortunately it was of the harmless or "benign" variety.

Science News Letter, June 4, 1938

ENGINEERING

Make Electrical Device For Cleaning Dust From Air

PRODUCTION of the "precipitron," an electrical device which cleans dust from air by charging the dust particles with electricity and then attracting them to an electrically charged plate, has been begun by a large manufacturer of electrical equipment.

The device was developed by Gaylord W. Penney, young research engineer, 58 years after Sir Oliver Lodge, British physicist, tried to precipitate a London fog by means of electricity. The device charges the dust particles negatively; the particles are then attracted to the positive plate of a "collector." After giving up their charge, they stick to the collector plate.

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