

working in conditions of light that mediums usually prefer for their sittings.

Preliminary announcement of their findings is made to the scientific journal *Nature* by the investigators, Theodore Besterman and Oliver Gatty of the Society for Psychical Research in London, England.

The infrared film caught nothing unusual except the moving of a curtain.

When a beam of infrared light was used in connection with apparatus in the tests, there were frequent announcements by the trance personality that the "force" had entered the ray. Notwithstanding this, the two investigators

could obtain no evidence of absorptions of a beam of the infrared light.

While in a trance, the medium on several occasions announced that the "force" had gone into one of a pair of cotton-wool covered boxes and remained there for some fifteen minutes, but no change in temperature of the box could be detected.

During half an hour, the "force" could produce no significant difference in rate of growth of two strains of bacilli or of dormant yeast.

The investigators spoke highly of Mr. Schneider's willingness to submit to tests and control.

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#### MEDICINE

## Pneumonia Cough Declared Not Useful in Fighting Disease

**T**HE FREQUENT and violent cough typical of uncomplicated cases of pneumonia is neither useful nor ultimately helpful, as has been generally supposed, declared Dr. Arthur J. Hall, emeritus professor of medicine at the University of Sheffield and visiting physician to the South Yorkshire Mental Hospital, in a report to the *British Medical Journal* published in London.

This cough, instead of acting as a natural means of combating the disease, merely exhausts the patient, Prof. Hall concluded from a study of pneumonia in patients suffering from mental disease. He found that these patients may sometimes have pneumonia without any cough at all.

The general distress and the restless, sleepless nights typical of pneumonia were also absent in patients he observed, although they had fever, chest signs and other symptoms of the disease as do mentally sound persons.

In one of several similar cases a man of 62, suffering from chronic dementia, had an attack of pneumonia lasting a week; his temperature, ranging from 102 to 105 degrees Fahrenheit, the pseudo-crisis on the fifth day, and the crisis on the seventh day, were quite typical of the disease, from which he recovered. The man suffered no pain, had no sputum or delirium, and slept for seven hours each of the seven nights.

Prof. Hall believes that the absence of distress from the pneumonia in these

cases is due to the failure of the higher nerve-centers to register and respond to the disturbing stimuli, perhaps sometimes because there is actual deficiency of available receptive material and sometimes because this material is fully occupied in dealing with other and stronger stimuli. These theories he applies also to other combinations of physical and mental disease.

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#### PUBLIC HEALTH

## Measles Epidemic Broke Record

**M**EASLES has broken a twenty-one-year record. The number of cases reported each week has been higher than at any time since the U. S. Public Health Service began keeping records of this disease in 1912.

The epidemic has just begun to abate, less than 30,000 cases being reported weekly now. At the peak of the epidemic, during the first week in April, 35,000 cases were reported by state health officials to the U. S. Public Health Service in Washington, D. C.

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Until five years ago, Bermuda depended entirely for fresh water on rain water or imported supplies from New York; now a method of collecting the underground fresh water, free from salt and made soft, has been evolved.

#### AVIATION

## Sound Echoes Tell Height Of Airplane Above Ground

**F**EAR OF running aground in a fog, long known as one of the greatest terrors of air traffic, may be slated for the discard. The acoustic altimeter, new gadget for the pilot's instrument board, answers the question: How far are we from the cruel earth?

A new type of altimeter developed by Lieut. Leo P. Delsasso, U. S. Naval Reserve, gives a continuous succession of red flashes, each marking on a dial the exact height of the airplane from the earth at the moment of observation. Lieut. Delsasso, who is also physicist in the University of California at Los Angeles, measures distances as near as four feet and as far as seven hundred with great accuracy. With projected improvements a range of fifteen hundred feet or more is expected. Heretofore such instruments have usually been telephonic devices requiring constant listening and some calculation, possibly with the necessity of pistol shots to furnish intense sounds. Other altimeters are merely barometers, which tell distance from sea level. Unfortunately the sea is not usually the place the aviator is worried about.

In the Delsasso altimeter a hammer strikes a steel diaphragm, sending down a short sound wave train of high intensity, and at the high treble pitch of 2000 vibrations per second. The echo returning from earth is caught by a selective microphone tuned to the 2000 frequency. A bouncing contact on the receiving diaphragm, assisted by vacuum-tube amplification, flashes a neon lamp revolving at precise speed around a dial. The time of the round trip of the sound is read directly on the dial, not as time but in terms of distance in feet.

The loud noise of a flying airplane normally interferes seriously with acoustic devices. Lieut. Delsasso has analyzed the sounds of aircraft, and finds that the beat of the propeller blades against air generates most of the noise. Such beats give mostly low notes in the "bass" range of 20 to 60 vibrations per second, while the motor exhaust, of much less consequence, also registers in the low frequency brackets. The bouncing contact in the Delsasso instrument requires about ten million times as much sound energy to work at 20 vibrations as at 2000. Thus the plane

noises are quite unable to cause false flashes on the dial.

The altimeter will probably be located near the tail of the ship, with two concealed funnels, sending and receiving, pointed downward. Light cloth may cover the funnels to preserve

streamline effects without serious interference with sound. Furthermore, current researches in reduction of airplane noise give hope of making the altimeter still more sensitive, adding many hundreds of feet to the practical working range.

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## ZOOLOGY

## Twin Chimpanzees Born For First Time in History

**C**HIMPANZEE twins, the first pair on record, have just been reported to the world of science by Dr. Robert M. Yerkes of Yale University's laboratories of Comparative Psychobiology.

The twins, one of them male and one female, were born at the University's Anthropoid Experiment Station at Orange Park, Florida, and are nearly a year old, Dr. Yerkes stated in a report to the current issue of *Science*.

Chimpanzees and other great apes resemble man in that they rarely give birth to more than one infant at a time. Dr. Yerkes and his associates were unable to find a single published report of twin births among the apes. They therefore conclude that the pair born at Orange Park on June 26, 1933, are the first of their kind known to science.

Chimpanzee infants have been exhibited by showman as twins, but Dr. Yerkes has not seen any evidence that would convince him that these really were twins. In one case the showman, when told of Dr. Yerkes' special interest, readily admitted that his pair were not twins.

### Famous Sister

The twins have an eight-year-old sister who has won fame on her own account. She is "the first chimpanzee of dated birth and positively known parentage and life-history to mature sexually in captivity," so far as Dr. Yerkes could find from studying chimpanzee records.

The father of the twins came from Africa and was judged to be eleven years old when the twins were born. Their mother was judged to be twenty years old at their birth. She came to the colony from Havana and is known to have borne two other infants besides the twins and their famous sister. The twins themselves were born somewhat prematurely but were normal and have

developed normally and uneventually.

Nine other seemingly normal births occurred at the chimpanzee colony between September, 1930, and November, 1933, Dr. Yerkes reported. All of the infants except one are now living.

Among the other primates, such as lemurs, gibbons, baboons and monkeys, twin births have occasionally been observed, Dr. Yerkes found. But except for the two he has just reported, no authentic twins are known among chimpanzees, orang-utans or gorillas.

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## CHEMISTRY

## Heat Treated Wastes Become "Cream" of Oil

**B**Y A "SWEATING" heat treatment of petroleum, called pyrolysis, chemists are now using former oil waste products to make a variety of alcohols highly desired by the lacquer, paint and varnish industry as solvents; a soap which cleans and lathers instantly in salty ocean water; a disagreeable smelling substance to go into the natural gas supply of homes and thereby make possible the quick detection of a leak; and synthetic rubber compounds resistant to gasoline and other rubber solvents.

These new by-products are the "cream" skimmed from the raw "milk" of petroleum, Carleton Ellis of Montclair, N. J., reported to the American Institute of Chemical Engineers.

Chemistry, Mr. Ellis indicated, is attacking the problem of what to do with the many former wastes encountered in the processing of oil for the automotive industry with more than an even chance that a great field of research will be opened, rivalling the hundreds of thousands of dyes and other substances made from coal tar.

Coal tar is the sticky, black ooze left behind after coal is heated in containers and coal gas driven off. From coal tar are obtained hundreds of aniline dyes like indigo; medical preparations such as phenol or carbolic acid; artificial flavoring and important chemical base products like anthracene and naphthalene.

The heat-treating of petroleum not only produces many of the important hydrocarbons found in coal tar on which that giant chemical industry is based but the presence of these hydrocarbons in gasoline, later obtained from the oil, gives the gasoline anti-knock properties which enhance its value as a motor fuel. The ability of chemistry to obtain many alcohols from petroleum will restore grains and natural foodstuffs from the position of contributors to raw industrial sources to their natural position of foods.

"Instead of serving as industrial materials," said Mr. Ellis, "there will be more grain for cattle and cereals, more olive oil for salad dressings, and more vegetable oils for other sorts of cooking. At the moment these prospects may not seem important, but in later years their value should have abundant opportunities to become established."

Ethyl alcohol, he added, will eventually excel all the alcohols in only one field and for one purpose—for drinking.

*Science News Letter, May 26, 1934*

In a national health competition among cities, Baltimore won first place among cities of more than 500,000 population.

The Field Museum has acquired a rare collection of plant specimens gathered in Peru by the first botanists who ever visited that country, 1778 to 1788.



### SCIENCE AND THE RECOVERY PROGRAM

an address by

**Dr. A. M. MacMahon**

Curator of the Department of Physics, Museum of Science and Industry

Wednesday, May 30, at 3:30 p.m., Eastern Standard Time, over Stations of the Columbia Broadcasting System. Each week a prominent scientist speaks over the Columbia System under the auspices of Science Service.