

PSYCHOLOGY

**Wanted: Triplets
For Scientific Study****W**ANTED: Triplets.

Anyone knowing triplets is requested to send their names and addresses to the Institute of Child Welfare, University of Minnesota, Minneapolis.

A study of triplets is under way at the Institute, and Dr. John E. Anderson is finding them very difficult to locate.

Although there have been many investigations of the resemblances between brothers and sisters, identical twins and fraternal twins, no extensive study of triplets has been made, Dr. Anderson said in a letter to *Science*.

But because triplets may have their origin in a single egg cell, with consequently identical heredity, or in two or three egg cells, they offer a unique opportunity for scientists to secure information on the influence of heredity and environment.

Science News Letter, December 17, 1932

AVIATION

**New Bomber May Make
Pursuit Planes Obsolete**

A BOMBING airplane so speedy that it may outstrip the small fast pursuit ships of yesterday, making them obsolete, is being tested by the U. S. Army Air Corps at Wright Field, Dayton, Ohio.

The new plane is the result of improvements to the light Martin bomber XB-907 which, because of its emphasized streamlines, was dubbed the "flying fish" when announced last spring. The flying fish, a semi-low wing monoplane with metal fuselage and retractable landing gear, is powered by two Wright nine-cylinder radial engines. The engines are mounted in the front edge of the wing and are equipped with cowlings, both of these speed-producing features being developments of research by the National Advisory Committee for Aeronautics. It is understood that the new ship is much like its predecessor, with greater speed and maneuverability.

Although the Air Corps has not described this ship, engineers believe that its speed exceeds the 185 miles per hour achieved by the Boeing B-9 bomber. The Boeing plane, one of the best light bombardment airplanes, carries 2,000

pounds of explosives. Larger, slower and more clumsy bombers carry 4,000 pounds.

The gap between the speeds of heavy bombers and light pursuit ships is thus further decreased by the Martin development. A few years ago pursuit planes could fly circles around the bombers at speeds 30 per cent. greater than those of the big ships, while now they do well to overtake the bombardment planes whose speed they exceed by only about 10 per cent.

Some observers see, in this evolution of bombers into smaller, faster airships, the development of a universal battleship of the air with the speed and capacity of a bomber and the maneuverability of a pursuit ship.

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ENGINEERING

**Dust Layer Most Effective
When Not Dragged**

CALCIUM CHLORIDE, used as a protective mulch and for laying the dust on roads, is much more effective without the customary dragging of the road surface, Fred Burggraf, research engineer of the Highway Research Board, told the meeting of the Board in Washington.

The value of the salt mulch lies in the fact that it retards the evaporation of water from the road bed, tending to keep it in that ideal state when it is not so wet as to cause rutting nor yet dry enough to cause corrugations and the dust nuisance. In addition, the salt will absorb moisture from the air, serving to keep the road moist even when there is no rainfall.

The purpose of the frequent dragging of loose material over the road surface is entirely different. This procedure is to retard the formation of pot-holes. It does not reduce dust, and may even increase it. And, where the salt mulch is used with it, it grinds up the salt, thus destroying the mulch action and causing loss of the salt through dissipation by rain and wind.

The frequent-maintenance method was recommended by Mr. Burggraf for use during the fall months when lower temperatures make it necessary in order to insure a smooth riding surface. But the good service rendered by the salt mulch on a bare surface without maintenance during the summer makes it worthy of consideration in the low-cost road program, Mr. Burggraf said.

Science News Letter, December 17, 1932

IN SCIENCE

ARCHAEOLOGY

**Archaeologists Tunnel Into
World's Largest Pyramid**

MEXICAN archaeologists who are exploring the heart of the world's largest pyramid at Cholula, have unearthed numerous stone stairways which lead to a 130-foot paved platform.

The adobe pyramid is now honeycombed by some 1,000 feet of tunnels made by the archaeologists. The tunnels are enabling the explorers to reveal the interior complex of structures without disturbing the Spanish colonial church which now stands on top.

One stairway which has been found is over 160 feet wide, and is the widest stairway known in American archaeology. It appears to have been rebuilt four times. Its destination has not yet been revealed by the excavations.

The great pyramid is being excavated under the direction of the engineer Emilio Cuevas of the Mexican Direction of Archaeology.

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EXPLORATION

**Chicago Fair to Show
Beebe and Piccard Spheres**

THE METAL SPHERES that have carried man highest above the surface of the earth and deepest below the ocean's surface are scheduled exhibits at the Century of Progress International Exhibition which opens in Chicago June 1 of next year.

Dr. William Beebe, zoologist-explorer of the New York Zoological Society, has promised the loan of the bathysphere in which he descended 2,200 feet into the sea off Bermuda.

Dr. Auguste Piccard, the Belgian physicist, is being asked to lend the aluminum gondola of the balloon in which he ascended nearly eleven miles the past summer over Europe.

The two spheres will be shown in the center of the Hall of Science's largest exhibition hall, the Piccard gondola suspended in the air over the Beebe bathysphere.

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E FIELDS

SEISMOLOGY

Earth Shocks Felt in Peru, Mexico and New York

THE HIGH Andes of Peru, north of Lake Titicaca, were shaken by an earthquake early Friday morning, Dec. 9, according to calculations by scientists of the U. S. Coast and Geodetic Survey, based on data gathered by telegraph and radio by Science Service. The calculations showed the quake as centering in 14.5 degrees south latitude, 71 degrees west longitude. Time of origin was 3:35 a. m., eastern standard time.

The floor of the Pacific Ocean off the Mexican coast, south of Colima, was shaken by an earthquake Wednesday morning, Dec. 7. This area is a very active earthquake region.

The quake occurred at 11:22 a. m., Eastern Standard Time, and its epicenter as determined by the Coast and Geodetic Survey was in approximately 18 degrees north latitude, 103.5 degrees west longitude.

A single earthquake shock was felt at Saranac Lake, N. Y. at about 10:15 p. m., Tuesday, Dec. 6, the U. S. Geological Survey has been informed by Fred C. Conrad, postmaster.

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INDUSTRIAL MANAGEMENT

"KMH" Analysis Shows 35-Hour Week is Best

KMH TESTS show the 35-hour working week to be best for industry. This was one of the conclusions in a study presented at the meeting of the American Society of Mechanical Engineers in New York, by L. P. Alford and J. E. Hannum, New York engineers and editors.

Kmh means "kilo-man-hour." It is a unit devised by Mr. Alford and Mr. Hannum some years ago, and has been under practical test in a number of industries since 1927. It measures the production performance of each worker in blocks of a thousand hours.

Applying this yardstick to workers' effort, the two investigators have turned

up a number of facts which do not jibe with assumptions that have come to be almost orthodox dogmas to many industrialists. They found, for example, that the optimum size of an industrial plant for most effective production is small when indicated by kmh worked per year or number of workers. The optimum number of workers for a blast-furnace plant, it was discovered, ranges from 135 to 320; for petroleum refining the best results are obtained at plants employing from 20 to 70 workers, and in lumber manufacturing the most efficient plants employ between 25 and 150 men.

The analysis also showed that 58 per cent. of all manufacturing firms reporting showed a higher productivity per man in 1931 than in 1928. And the concerns which showed a continuous increase in the kmh rate of production from 1923 to 1931 reduced, on an average, the number of kmh per unit of product by 31 per cent. That is, if the working force of 1923 had remained unchanged, the amount of product turned out in a 35-hour week in 1931 would have been the same as was produced in a 51-hour week in 1923.

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INVENTION

New Device Tells Changes in Speed

A DEVICE that gives a direct quantitative measurement of the acceleration of a train when it speeds up, or of its retardation when the brakes are applied, has been invented by W. E. Potter of the General Electric Company. The instrument also tells the grade when the train is on a hill.

It consists basically of a glass tube bent in the shape of a rectangle and partly filled with mercury. This is mounted on a flat base, so that it may be set on a window-sill, parallel to the vehicle's line of direction. The glass column toward the rear is marked off in miles per hour per second above and below a central zero position. The front column is marked off in per cent. grade, above and below a zero.

When the vehicle speeds up or slows down, the surge of the mercury up or down in the tube gives a direct reading of acceleration or retardation. When the speed is uniform, and also when the car is standing still, the mercury column goes back to the zero mark.

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PUBLIC HEALTH

Influenza Outbreak Creeping Into North

NEW increases in influenza are reported from the South and West and the outbreak seems to be creeping into the Middle West. Reports from state health officers to the U. S. Public Health Service give the total for the week ending Dec. 3 as 14,291, which is more than twice the total for the previous week.

Alabama, Tennessee, South Carolina, Louisiana, Colorado, New Mexico, Arizona and California reported the largest number of cases. Increases in Oklahoma, Missouri, Indiana and Kansas lead health authorities to believe that the outbreak will not be limited to the South and West. The New England and other northeastern states have so far not been affected. No cause for alarm is felt, however. The disease is occurring in mild form.

The present outbreak has not yet equalled the severe influenza epidemic of 1928. Health authorities point out that we have been fortunate in escaping any serious epidemics during the past three years of financial depression and unemployment.

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ZOOLOGY

Beauty Frozen in Glass Serves Cause of Science

See Front Cover

GEMS as fantastically beautiful as any that have ever glittered in dreams of a frosty Christmas fairyland are being made in glass for the American Museum of Natural History, by Herman Mueller, reputed to be the world's most skillful glassblower. They are not mere conventional designs, however, nor are they portrayals of imaginary creatures. They are enlargements, on a vast scale, of the strange and often delicately beautiful microscopic plants and animals that swarm unnoticed in the world of waters.

Mr. Mueller was once glassblower for Tiffany's, but as medieval and renaissance artists often reserved their best efforts for the service of the Church, so he has withdrawn his labors from the service of fashion to dedicate them to the advancement of popular knowledge of science.

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