PSYCHOLOGY

New Employment Centers Are Adult Guidance Clinics

AN ENTIRELY new type of social institution organized to help adults to make the most of their vocational opportunities, just as the child guidance clinics aid children educationally, was described to the meeting of the Midwestern Psychological Association in Ames, Iowa, last week by Dr. Donald G. Paterson of the University of Minnesota.

This new type of employment center is the outgrowth of work now being done toward employment stabilization in the cities of Minnesota and also at Rochester, N. Y., and Philadelphia, Pa.

"Intensive study of unemployed individuals has revealed the urgent need of assisting unemployed persons in planning ways and means of becoming economically self-supporting," Dr. Paterson declared.

"Every person studied represents a story of human interest which reveals far too often that the hazard of unemployment, when it actually strikes a given individual, creates as much havoc as does disease. Just as society provides doctors of medicine to aid in physical crises, so there is urgent need for society to provide doctors of vocational adjustment."

The employment centers of Minnesota, newly reorganized on these modern lines, are today rendering an important service to the community, to industries, and to thousands of unemployed persons, Dr. Paterson said. During 1932, despite the depression, over 27,000 unemployed persons were placed in positions for which they seemed to be fitted.

Science News Letter, May 27, 1933

GEOLOGY

Princeton's Annual Train To Make Geology Tour

THE ANNUAL travelling geology class will set forth on its private Pullman car, "Princeton," on June 21 for a journey across the continent and a view of the record of the rocks from the earliest eras of time to the present.

For the past eight years the International Summer School of Geology and Natural Resources under the direction of Dr. Richard M. Field, Princeton geologist, has conducted an educational geological train-tour with a specially built car as living quarters and classroom for the students and professional geologists who use this method to acquire a closer acquaintance with rocks and strata. The tour is open to men from all colleges and universities.

This year Prof. Erling Dorf, assisted by Dr. Jerome Smiser, will be in charge of the trip and engineers and geologists at the various locations visited will serve as field leaders.

An eleven-day pack horse expedition in the Beartooth Mountains of Montana and Wyoming will give the party the experience of a typical reconnaissance geological survey. The Chicago Century of Progress will be visited.

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PHYSICS

Material Particles Scatter Each Other Like Light

IF YOU ARE in a hurry you can't be too particular about energy.

This is a version of the so-called uncertainty principle, which Prof. Niels Bohr of the University of Copenhagen impressed upon California physicists gathered in Pasadena.

When one body shoots by another and transfers energy to it, one cannot inquire too closely as to whether the principle of conservation of energy has been violated, because it takes time to measure energy exactly. This fact helps clarify certain difficulties which old-fashioned physicists worried about.

Prof. Bohr's main purpose is to get scientists to stop worrying about questions which have no possible solution. In return for this sacrifice of vain curiosity, he points out that paradoxes which have been proposed by Einstein and others dissolve themselves.

The Danish scientist is a master of simplification, and presents in brief and elementary form proofs which others achieve only after complicated mathematical developments.

He showed in a few lines how material particles scatter each other according to the same law as that deduced for light by Lord Rayleigh when he explained why the sky is blue. In the optical case the blue light is more easily scattered than the red. Blue photons are heavier, so that here is a case where heavier bodies are pushed aside more easily than light ones. The same curious fact is shown when neutrons scatter protons a million times more frequently than the much lighter electrons.

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IN SCIEN

AERONAUTICS

Ingenious Device Measures Air Currents Around Macon

THE GIANT airship Macon is not going to meet with any such disaster as that which overtook her sister ship the Akron, if meteorological science has anything to say about it. On the Macon's third trial trip on Monday, May 15, measurements of the air currents around her stern, for pitch, yaw and velocity, were taken with a specially designed instrument known as the hot-wire anemometer, by F. D. Knobloch, a Guggenheim Foundation research worker. These are intended for use in figuring the stresses to which the great ship is subjected.

The hot-wire anemometer measures the velocity of air currents in a most ingenious fashion. It depends simply on the cooling effect of the wind blowing over a wire heated by electricity. The more wind the greater the cooling effect. The changes in the temperature of the wire are electrically registered, and the temperature changes are converted into feet per second of air movement by mathematical calculations.

Science News Letter, May 27, 1933

METEOROLOGY

Temperature Varies Little 3000 Feet Above Ground

THE WIDE daily variations in air temperature near the ground iron out to nearly nothing up where the airplanes soar, J. C. Ballard of the U. S. Weather Bureau told the American Meteorological Society.

He has made a rather extensive study of temperature fluctuations in the upper air, at heights between 3000 and 4000 feet, by means of thermometers sent aloft on kites. The studies were made at six stations in the United States.

He found that the daily temperature variations decreased from ground level until somewhere near the 3300 foot level, after which the daily variations amounted to less than one degree Centigrade (1.8 degrees Fahrenheit).

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CE FIELDS

ASTRONOMY

Earth Appears As Blue Planet From Moon

IF WE COULD see the earth from a distance out in the heavens it would appear as a bluish planet, Prof. V. M. Slipher of Lowell Observatory, Flagstaff, Ariz., declared in the George Darwin lecture before the Royal Astronomical Society.

The gold medal of this leading astronomical organization was presented to Prof. Slipher in the presence of a distinguished scientific audience that included Dr. Willem de Sitter, Sir Arthur Eddington and Sir James Jeans. Prof. F. J. M. Stratton, president, made the presentation.

The blueness of the earth was determined by Prof. Slipher from spectrograms made photographically of the earthshine on the moon. Light from the earth was reflected by the moon back to Prof. Slipher's delicate instruments.

Pluto, the most recent of the planets to be discovered which was found at Lowell Observatory, is a reddish planet which is brighter to the eye than it is on a photographic plate.

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PHYSICS

Behavior of Neutrons Explained At Conference

THE NEUTRON is a decent fellow. He joins protons together against their nature into atomic nuclei.

He passes through steel or lead with hardly any disturbance.

Once you understand his nature you see clearly why he behaves as he does.

How an electron joins a proton to form a neutron no one knows, but once the two get together they form a compact pair obeying the laws of Newtonian mechanics. Dr. Charles C. Lauritsen of the California Institute of Technology discussed experiments on the neutron, and told of his work on the artificial production of neutrons with artificial alpha rays from helium gas. With his collaborators, H. R. Crane and Dr. Andrew Soltan, he has produced alpha rays of 900,000 volts energy. The results so far are most promising.

During the discussion, Dr. R. M. Langer of the California Institute of Technology pointed out that recent claims of excessive energy for neutrons were not well founded. Prof. Niels Bohr of the University of Copenhagen explained why neutrons, contrary to expectation, bumped protons into motion but did not molest electrons. The reasoning simply depended on the fact that the proton has the same momentum as a neutron when moving with the same speed, while the electron has less.

Hit a fellow your own size, is the key to the neutron's conduct.

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MEDICINE

Strange Fever May Last Eleven Years

A MYSTERIOUS fever that may last as long as eleven years has been studied at the Mayo Clinic, Dr. Leonard C. Rowntree of that institution reported at the meeting of the Association of American Physicians.

In spite of careful studies at this and other institutions, no cause has yet been found for the fever. Between 1919 and 1930 this condition was studied in one hundred patients over fifteen years of age. All the patients had had the fever for one month or more, the average being a year and a half, and the longest eleven years.

Most of the patients looked astoundingly healthy, though all of them had to stay in bed, Dr. Rowntree observed. Only six of them looked definitely sick. Most of them were very thin, and all of them felt nervous, tired and weak.

In about three-fourths of the cases, the fever comes on in the late afternoon or early evening, and varies between 99 and 100 degrees Fahrenheit. There were no chills. This disease also is predominantly an ailment of women. There were only twenty-eight men in the hundred Mayo Clinic cases.

A few more than half of the patients recovered from this ailment, although it took twenty-eight months for the fever to clear up.

Dr. Rowntree urged fellow-physicians to make further careful studies of this fever, to determine whether it is an entirely new ailment, or is due to some infection, to nervous condition, or to faulty use of food by the body.

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ENDOCRINOLOGY

Alice-In-Wonderland-Like Disease Caused by Tumor

AN ALICE-in-Wonderland-like disease which caused a little girl of three years to become, almost overnight, as grown-up as a thirteen-year-old Miss, was described by Dr. Emil Novak of the Johns Hopkins Medical School at the opening session of the Congress of American Physicians and Surgeons in Washington.

Like Alice, this little girl was able to go back to her own age. The transformation in her case was performed by a surgeon's knife which removed a tumor from her body.

The tumor in this and similar cases, Dr. Novak explained, developed from cells thought to be left over from the formation of the sex glands. These cells in the tumors retain their function of producing the female sex hormone. The excess of this hormone forces the little girl suddenly to grow up. When the tumor is removed and there is no longer an excess of the hormone, she is able to return to her normal age and state of development.

Dr. Novak described several such cases, and also pointed out that similar premature growing-up may be caused by disturbances of other of the body's glands, among them the pituitary and the adrenal glands.

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PHYSICS

New Ultra-Centrifuge Has Double Cushion of Air

A NEW DEVELOPMENT in the ultra-centrifuge, an instrument that can whirl at speeds as high at 500,000 a second, has been brought out by Prof. J. W. Beams of the physics department of the University of Virginia. Earlier models consisted of a top-shaped metal rotor with slanting vanes on its under side, against which air-jets were forced to drive it into rapid rotation. This model had the disadvantage of occasionally flying out of its place.

In his new model Prof. Beams uses a disk supported between two cone-shaped pieces of metal, with air-jets directed against it from the top as well as from beneath. This makes for steadier running, and keeps the rotor in place.

Science News Letter, May 27, 1933