

PHYSICAL MEDICINE

Civilian Amputees Lack Attention Given GI Cases

► THE FOUR war years produced 120,000 civilian amputees and 18,000 military amputees. Yet for this larger group of civilians there exists no such coordinated rehabilitation program as for the GIs, the American Congress of Physical Medicine was told at a meeting in Washington.

Inadequacy in preparing the civilian amputee for the life he must face when he leaves the hospital was described by Dr. Henry K. Kessler, director of the Hasbrouck Heights' Amputee Clinic at Newark, N. J.

These civilians must be provided proper facilities if they are to be absorbed into the national life, Dr. Kessler pointed out.

He suggested that an effective program of rehabilitation should embrace five phases. Psychologically, the amputee needs reassurance and preparation during convalescence for the period when he can use the artificial limb. Surgically, the 30 or 40 sites of amputation can now be reduced to four basic ones, permitting a better fitting of artificial limbs. After care of the stump should be aimed at preventing its becoming contracted, weak, or improperly shrunk. In the fitting of artificial arms or legs, the emphasis should be on comfort, correct length, correct alignment and durability. And lastly, the amputee must be taught to develop skill in using his artificial arm or leg.

Science News Letter, September 18, 1948

POPULATION

Heart Victim Not Harmed By Temperature Changes

► IF YOU HAVE heart trouble, stop worrying about going shopping or to a movie on a hot day because of the extreme change of temperature in air-conditioned places. This advice was given in a report to the American Congress of Physical Medicine in Washington.

Tests were made with ten healthy adult males and 21 men with heart trouble. There was no difference in their adjustment to a sudden change in temperature, Dr. Nathaniel Glickman, of the University of Illinois College of Medicine in Chicago, told the Congress.

Science News Letter, September 18, 1948

ELECTRONICS

Hearing Aids To Have Longer-Lasting Battery

► A NEW KIND of dry battery that is lighter and longer-lasting because it uses oxygen from the air, instead of from chemicals within it, was announced by Dr. Lauchlin M. Currie, research vice-president of National Carbon Company.

People who wear electronic hearing aids will be the first to benefit from this development. The new A battery weighs about an ounce and lasts 80 hours, three times as long as a slightly heavier cell it replaces.

"The new outfit offers the largest output of electrical energy in the lowest weight and volume ever delivered in a commercial battery," Dr. Currie explained.

No metal oxides are used as the depolarizing agent that keeps the battery from stalling. This effect is secured by using a highly-active carbon electrode that takes up oxygen from the air when the battery is unsealed for use. A paste around the electrode holds the necessary electrolyte which, in effect, is regenerated. The battery continues to operate until the pure zinc anode is used up in the chemical action that produces the electricity.

Use of the new type battery in larger installations, some of military importance, was predicted by Dr. Currie.

Science News Letter, September 18, 1948

GENERAL SCIENCE

Science Writing Award Winners Are Announced

► A MAGAZINE ARTICLE on old age and newspaper stories on a new antibiotic have won \$1,000 George Westinghouse Science Writing Awards.

Florence Moug, of Washington University, received the magazine award for an article, "The Biology of Old Age," while the newspaper award was made to Frank Carey, of the Associated Press, in Washington, for his stories on chloromycetin. Honorable mention in the magazine division went to a free-lance writer, Herbert Yahraes.

The awards were made during the centennial meeting in Washington of the American Association for the Advancement of Science.

Science News Letter, September 18, 1948

ASTRONOMY

New Comet Found In Southern Skies

► ANOTHER FAINT new comet has been discovered. In the far southern constellation of Sculptor, it is moving southwest.

This is the tenth comet spotted so far this year. Surprisingly, eight of the comets have been new objects and only two periodic comets whose return was expected.

Comet Johnson, of the thirteenth magnitude, was found on Sept. 1 by E. L. Johnson of the Union Observatory at Johannesburg, South Africa. News of this discovery was cabled by Dr. W. S. Finsen of the observatory to Mlle. J. M. Vinter-Hansen, well-known astronomer at Copenhagen. She forwarded the report to Harvard Observatory, American clearing center for astronomical discoveries.

Science News Letter, September 18, 1948

IN SCIENCE

PSYCHOLOGY

Cocktail Makes Cringing Dog Stand Up for Himself

► A COCKTAIL will make even a cringing dog assert himself, Dr. W. T. James, of the University of Georgia, told the meeting of the American Psychological Association in Boston.

A litter of four Dalmatian-setter hybrids were studied by Dr. James. The one female was the boss of the family and was also the largest.

One little male pup, smallest of the litter, was the most submissive. He never got enough to eat unless he was fed by himself.

But a dose of .55 cubic centimeters of alcohol per kilo of body weight, if given to him eight or ten minutes before the dogs were fed, gave him the temporary courage to stand up for himself. This dose is comparable to a single "shot" of whisky for a 150-pound man.

Separate feeding soon brought the little dog up in weight until he equalled his two more dominant brothers. But his nature was still submissive. He still failed to get enough to eat if he had to compete with the others to get it.

Science News Letter, September 18, 1948

ENGINEERING

New Injection for Gas Boosts Auto's Power

► AN ALCOHOL-WATER injection for the gasoline in a car's engine, adapted from the wartime anti-detonant injection used in American warplanes, may give motorists more power and less "knock" on hills.

The injection fluid, called Vitol, and an auxiliary carburetor, the Vitameter, were demonstrated by the Thompson-Toledo Vitameter Corporation in Cleveland. In addition to improved car performance, the injections may mean a saving in fuel supplies, company officials pointed out.

Using the booster fluid has the effect of raising the gasoline's octane rating by 10 to 20 numbers, it was explained.

Vitol consists of 85% alcohol and 15% water, with tetraethyl lead and soluble oil. In wartime planes, 50-50 alcohol and water solution was used.

The Vitameter developed to give the booster "shot" operates only when the engine needs extra power, as in starting suddenly or in climbing hills. It can be installed in a car in less than an hour and will retail for approximately \$30. Vitol, the injection fluid, is comparable in cost to motor oil, it was reported.

Science News Letter, September 18, 1948

CE FIELDS

GENETICS

20,000 to 42,000 Genes Found in Each Body Cell

► YOU HAVE somewhere between 20,000 and 42,000 of the heredity-determining units, called genes, in each of the tiny cells which form your body.

This new estimate is made by Dr. J. N. Spuhler of Ohio State University.

Genes are invisible but important chemical groups. They determine such characteristics as your height and body type, the color of your hair and your eyes and the presence or absence of such inherited defects as bleeding and colorblindness. They may perhaps also determine such traits as literary genius or musical talent. Some of these traits are determined by a single gene. Others involve a number of genes acting together.

Dr. Spuhler reports his findings in the journal, *SCIENCE* (Sept. 10). He based his calculations on the known number and size of the chromosomes which carry the genes and studies of the genes of other organisms whose hereditary makeup is better understood than man's.

Science News Letter, September 18, 1948

METEOROLOGY

Different Species of Snow Produced in Laboratory

► VAPORS can be used to produce different types of snow in the laboratory.

Use of vapors to change snow from one type to another was disclosed by two General Electric scientists, Dr. Vincent J. Schaefer, who produced the first man-made laboratory snowstorm, and Dr. Bernard J. Vonnegut.

They used 30 different vapors in experiments with transforming snow into different shapes. Cold-chamber snow in the laboratory is usually in the form of hexagonal plates. The vapors changed the snow into four different, recognizable shapes, and other freak shapes which may be transitional stages between the other forms.

Science News Letter, September 18, 1948

GENERAL SCIENCE

Creativeness Endangered, Chemists' President Says

► ORIGINALITY and creativeness in American research is being endangered by transferring to scientific investigation the techniques employed in the mass production of goods, Dr. Charles Allen Thomas, executive vice-president of the Monsanto Chemical Co., St. Louis, charged in his

presidential address to the American Chemical Society meeting.

"Are we becoming nut-tighteners and wrench wielders on an assembly line of industrial and university Research?" Dr. Thomas asked. "Perhaps we have straight-jacketed our imaginations within the confines of narrow disciplines and lost sight of the end products. We have failed to see the great difference between physical and intellectual production."

Dr. Thomas admitted that some specialization is necessary so that inquiry is not diffused over such a large field as to lose its effectiveness. He recalled that the Jack-of-all-trades is seldom master of any. Creative specialization must, he said, escape being as esoteric and fruitless as the ancient question of the number of angels on the head of a pin.

Science News Letter, September 18, 1948

PALEONTOLOGY

Discover Ape Bones Which Are Very Close to Human

► BONES of ancient African apes that seem to be closer to the human line of descent than any hitherto discovered were described before the meeting in Brighton, England, of the British Association for the Advancement of Science by Prof. W. E. Le Gros Clark. They indicate that the animals got about by walking and running, instead of swinging from branch to branch on overdeveloped arms with hook-like hands, after the quite un-human manner of the modern great apes.

Among the large and varied ape fauna of East Africa described by the speaker were some animals the size of modern chimpanzees, and others as big as present-day gorillas. Some of the fossils indicate a former land connection with Asia.

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AERONAUTICS

Largest Non-Rigid Airship Planned for Navy Patrols

► THE LARGEST, non-rigid blimp in the world will be built for the U. S. Navy by the Goodyear Aircraft Corporation.

The Department of the Navy revealed that a contract has been let for the "N" blimp. It will be nearly twice as large as the blimps used in World War II anti-submarine patrols and will be able to operate on long-range patrols.

Envelope of the new lighter-than-air craft will be 324 feet long, 71 feet wide and 92 feet high at its tallest point. A crew of 14 officers and men and two 800-horsepower Wright Cyclone aircooled engines will be housed in an 87-foot car under the envelope.

Rayon fabric coated with neoprene synthetic rubber will be used in the construction of the envelope which will have a capacity of 825,000 cubic feet of helium gas.

Science News Letter, September 18, 1948

GEOLOGY

Present U.S. Coast Was Once a Chain of Islands

► CHAINS OF ISLANDS were strung out along the present coasts of the United States, while the continent was about half the size it is now.

This is how America looked half a billion years ago, in the new theory proposed by a Columbia University professor.

Shallow seas and deep troughs bordered a central lowland. The volcanic island chains followed roughly the present borders of the continent. This picture of early Paleozoic North America was presented to the International Geological Congress in London by Prof. Marshall Kay, Columbia geologist.

Sometime during the Paleozoic era, Prof. Kay believes, the present limits of the continent were formed.

Study of rocks from the Atlantic and Pacific coasts have revealed fossils from that era. But the rocks have undergone great changes due to mountain-making movements during the Paleozoic.

Along the Atlantic coast, the early island chain stretched from Newfoundland to Georgia. It then curved westward along the northern edge of the Gulf of Mexico, into today's northern Mexico and back out to the modern Antilles. It finally reached into what is now northern South America. The Pacific chain extended from the Aleutians down through the coastal provinces and states, perhaps as far as the western Andes of modern times.

Science News Letter, September 18, 1948

NUCLEAR PHYSICS

U.S. Radio-Isotopes in Use In 21 Foreign Nations

► TWENTY-ONE foreign nations are now benefiting from the by-products of U. S. atomic energy in the form of radioactive isotopes. Their use ranges from tracing life processes to treating fatal diseases.

Already 216 isotope shipments have been made overseas since their export was authorized from the Oak Ridge National Laboratory last September.

Australia received the first consignment. It consisted of a small amount of radioactive phosphorus for use in treating polycythemia vera and leukemia. The first disease is marked by an excessive production of red blood cells and leukemia has been called "cancer of the blood." The Australians reported "good" results.

The 21 nations which have made formal arrangements to receive radio-isotopes are: Argentina, Australia, Belgium, Canada, Cuba, Denmark, France, Iceland, India, Ireland, Italy, The Netherlands, New Zealand, Norway, Peru, Spain, Sweden, Switzerland, Turkey, Union of South Africa and the United Kingdom.

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