

MEDICINE

Powdered Bone Suggested As Remedy for Pyorrhea

BOILED powdered bone was suggested as a remedy in pyorrhea and diseased jaw bones at a faculty clinic at Columbia University School of Dental and Oral Surgery.

Powdered bone was successful in treating pyorrhea and jaw bone damage in dogs, Dr. Frank E. Beube reported.

"It seemed evident from the work on dogs that similar results could be hoped for by the use of the bone powder in lesions of the alveolar and maxillary bones of patients," Dr. Beube concluded.

The bone used in the experiments of Dr. Beube and Dr. Herbert F. Silvers was obtained from the long bones of sheep and cows. This boiled powdered bone was packed into the holes surgically produced in the jaw bone to resemble the holes produced by disease or injury. Within a few weeks new bone, natural cement layer, and other dental tissues had grown in to replace those lost. In the case of pyorrhea, a "quite loose" tooth was firm in its socket after the powdered bone treatment had healed the diseased condition.

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ANATOMY

You're Not Grown Up at 24—Or Even Perhaps at 40

YOU are not grown up at 24. You may not even be grown up at 40. You may increase in height more than a third of an inch after you are an adult, and supposedly "finished."

This is the latest evidence on continued growth in men and women, reported by Dr. Ales Hrdlicka, anthropologist of the U.S. National Museum.

Citing as authority thousands of measurements that he and other scientists have made on white Americans, Indians, and others, Dr. Hrdlicka presents new facts, some of which upset old and universal notions about the human body:

A man has generally been considered fully mature at 24. On the contrary, legs and trunk keep growing slightly far into adult life, and this is apparently true in men of all races.

In women—of the Pueblo Indian tribe, at least—the trunk grows slightly faster than the legs.

Arm length appears to increase slightly in adult life.

Hands and feet tend to become larger, and may even grow more than the body as a whole. Close-fitting shoes worn by the white man and white woman make it hard to study in them normal foot changes. In Indians, however, Dr. Hrdlicka learned that women's feet grow more than men's.

A "grown" person's chest continues to broaden slightly until 40 to 50 years, that is, if the individual is an Indian. In whites, the chest growth continues even later in life.

As old age sets in, the chest decreases in breadth. The trunk, in either sex, shrinks faster than leg length.

A possibility that medicine may find this new knowledge of adult growth valuable is suggested by Dr. Hrdlicka. When normal growth changes are definitely determined for the various parts of the body, it may be possible to recognize variations from normal as pointing to constitutional defects.

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BIOPHYSICS

Virus Molecules Isolated By Ultracentrifuge

DIFFERENCES between the filtering viruses that cause diseases show up when they are whirled in the ultracentrifuge, a machine that can subject materials placed in it to pulls and stresses many thousands of times as great as the force of gravity.

Marked differences between the virus of ring spot, a disease of tobacco plants, and the more familiar tobacco mosaic, were shown when plant juice containing the ring spot virus was subjected to ultracentrifuging equivalent to 60,000 times gravity, Drs. W. M. Stanley and Ralph W. G. Wyckoff of the Rockefeller Institute for Medical Research state (*Science*, Feb. 12).

Tiny pellets of material found after repeated centrifuging contained the disease-transmitting crystalline virus proteins in much higher concentration than in the original solution.

This particular virus was very hard to work with because of its instability, Drs. Stanley and Wyckoff state. It broke down chemically and lost its disease-causing power at ordinary room temperatures, and could not stand a very slight degree of acidity.

The two researchers also subjected several other kinds of disease viruses to ultracentrifuge treatment, and found that each kind had its own characteristic way of responding.

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IN SCIENCE

MEDICINE

Distemper Protects Monkeys Against Poliomyelitis

USING the germ or virus of a mild disease to protect against attacks of another more serious disease virus may be the method of the future for protecting against such intractable ailments as infantile paralysis.

This possibility appears in a report of Drs. Gilbert Dalldorf, Margaret Douglass and H. E. Robinson, of Grasslands Hospital laboratories, Valhalla, N. Y. (*Science*, Feb. 12).

The virus of dog distemper, these scientists found, protects monkeys against infantile paralysis. In the Grasslands laboratories, the infantile paralysis death-rate for monkeys is 100 per cent. Ordinarily all the monkeys die of the disease. When monkeys suffering from distemper, as a result of infection with dog distemper virus, were infected with infantile paralysis virus, only one-third of the animals died. Of the two-thirds that recovered, half had no paralysis when they got well. Even in those animals that died the paralysis set in later than in the controls.

These results show that a relatively mild disease can to a certain extent protect against an invariably fatal one. The studies also suggest, the scientists point out, the existence of a new immunity or protective mechanism in the virus field, which at present is one of the most baffling in medicine.

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ORNITHOLOGY

Wings Are Handy For More Than Flying

ABIRD'S wings are not just for flapping and flying. Among uses some birds find for their wings, J. W. Sugden, University of Utah, cites these: balancing, display or drumming in courtship, to shelter young, as striking weapons, for aid in climbing, to stir up fish, and to support the body in place of the feet as a substitute for perching.

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PLANT PHYSIOLOGY

Vitamin B₁ Found Necessary For Growth of Plant Roots

VITAMIN B₁, the food factor that prevents the Oriental nervous disease called beri-beri, has been found necessary also for growth of plant roots by Dr. James Bonner of the California Institute of Technology. (*Science*, Feb. 12.)

Dr. Bonner, growing bits of amputated pea roots in a culture fluid containing essential mineral salts and sugar, found that new growth would not occur unless he added an extract of yeast.

One of the things in yeast extract is vitamin B₁, so he tried a purified crystalline form of that. With very minute quantities of the vitamin he was able to obtain even better growth of his roots than he got with the extract. The conclusion therefore is that vitamin B₁ is as necessary for plant growth as it is for the health of animals.

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GENERAL SCIENCE

New French Law Hits Elder Scientists

AIMED at opening careers for young intellectuals is the new law recently promulgated in Paris which makes obligatory the retirement of state employees, including professors, at age 65. What the law will do to the nation's scientific march of progress is a matter of serious consideration, for many of the men affected by the law are leaders in their fields.

The roll of men who must resign from public activity this year includes many scientists from the Institut de France, even though Institut members are permitted to work until 70 years of age under the law. Fifty per cent of these scientists are affected by the legislation, a survey shows.

In the field of physical sciences there are: Edouard Branley, Arsene d'Arsonval and Andre Blondel. In pure and applied chemistry, Augustin Behal, Alexander Desgrez, Paul Sabatier, Georges Charpy and Louis Lumiere. Geologists

include Henri Douville, Lucien Cayeux and Louis de Launay. Botanists and zoologists include Pierre Dangeard, Marin Molliard, Emile Schribaux, Paul Marchal, Charles Gravier, and Lucien Cuenot. Mathematics and astronomy lose Emile Picard and Henri Deslanders. Also lost will be the pathologist Emmanuel Leclainche, mineralogist Alfred Lacroix, naval engineer Maxime Laubeuf and Charles Lallemand, inventor of the automatic sea level recorder.

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AGRICULTURE

"Dirtless Farming" Now Named "Hydroponics"

MEET HYDROPONICS, a new word in the world of science. It is applied for the first time in an article in *Science* (Feb. 12), to mean the raising of vegetables, flowers, and fruit without soil, in tanks of warmed, fertilized water. The new name is proposed by the originator of this system, hitherto known by the colloquial nickname of "dirtless farming," Prof. W. F. Gericke of the University of California.

Prof. Gericke originally suggested calling his method "aquiculture," by analogy with "agriculture." But "aquiculture" was already in use to designate the economic utilization of natural bodies of water, such as oyster beds and fishponds. A colleague of Prof. Gericke, Prof. William A. Setchell of the botany department of the University, suggested the new name and Prof. Gericke adopted it.

"Hydro" in Greek means water and "ponics" comes from the Greek word for labor; hence water-labor or water-work becomes "hydroponics."

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ENGINEERING-ENTOMOLOGY

Ants Contribute Material For Use on Road Surface

ON THE French African motor road, one of the longest in the world, the ingenuity of construction engineers is being combined with the industrious nature of the ant. Ant hills ten feet high, scattered freely through that region, contain a hard gritty material which makes an excellent road surface. Only a part of each hill is dug away for the road, experience having shown that the ants will then quickly replace the used material.

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ASTRONOMY

New Comet Observed By Japanese Astronomer

LOW in the western sky, a bit toward the north, a new comet has just been discovered by the Japanese astronomer Simizu, according to word received by Science Service from Harvard College Observatory. Of the 13th magnitude, it is so faint that only sizable telescopes will reveal it and it is not visible to the unaided eye. The comet is believed to be the well-known Daniel comet making a return trip to the vicinity of the sun and earth where the sunlight reflected from its body makes it observable.

The comet is reported to be a diffuse object and no comment on its tail has been received. Its position on Feb. 11 was given as right ascension 2 hours 44 minutes and 5 seconds and declination as plus 22 degrees 27 minutes, which places it west of the constellation Andromeda and near Aries and Triangulum. When seen in 1909 the Daniel comet was visible from Dec. 6 to April 11. Based on observation at that time its period of motion about the sun in an elongated ellipse was estimated at about 6½ years.

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ARCHAEOLOGY

Ethiopians' Holy City Had Skyscrapers

ETHIOPIANS built skyscrapers, not for office buildings but for palaces, in their holy city of Aksum, is the belief of Prof. Daniel Krencker of the University of Berlin.

He finds evidence of this by studying six curious stone monuments that have stood in a cemetery of Aksum for over 1,400 years, and that resemble skyscrapers. Tallest of these graveyard skyscrapers, now fallen, stood 109 feet high. Each monument is carved out of a single stone block to resemble a narrow, towering building, with sham doors and windows. Thirteen stories are indicated on the tallest monument.

Comparing these monuments with ruins of ancient palaces in Aksum, Prof. Krencker reports that the palace ground plans resemble the plan of the imitation buildings in the cemetery. Similarities lead him to believe that the ancient holy city of Ethiopia was dominated by tall buildings, which the graveyard stones show in exaggerated narrow form.

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