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CELEBRATION IN HONOR OF DR. GUENIOT

CELEBRATING the centenary of an eminent scientific man is not unusual. The French Academy of Medicine, however, has just had the unique opportunity of celebrating the centenary of one of its living members, Dr. Alexandre Guéniot, eminent obstetrician, surgeon and author, and former president of the academy.

The distinguished audience included General Gouraud, Military Governor of Paris, the Minister of National Education, the Minister of Public Health, the chairman of the Paris Municipal Council, Madame Curie, discoverer of radium, Dr. Roux and Dr. Calmette, heads of the Pasteur Institute, and many others whose reputation is international.

Dr. Guéniot was an erect, alert figure, smiling attentively at the kindly speeches which one distinguished orator after another delivered. They all read their carefully prepared addresses. But when it came turn for Dr. Guéniot to reply, he jumped up lightly from his chair and delivered the opening sentences of his speech without any reference to his manuscript. Afterwards he sat down and read a short paper, the whimsical wit of which made this assembly of the most eminent savants of France rock with laughter.

In the course of a presentation of a medal of the town of Paris by the chairman of the Municipal Council, it was pointed out that a facsimile had been presented to a man of 117 years at the inauguration of the statue of Louis XIV in the Place des Victoires. Hippocrates had reached the age of 109, and in 1809 Napoleon had received in audience a doctor born in 1690.

The day after Alexandre Guéniot was born, his father wrote to an intimate friend:

"I do not know whether to be happy or sorry over the birth of a son to which I have contributed only a modest share. The poor infant enters the world in very troubled times. Hardly seventeen years have passed since peace was restored to Europe, and we still suffer cruelly from the effects of the war. Who knows if my son will not one day be forced to become the citizen of a republic? It makes one shudder. The conditions of life are daily becoming more difficult. Nanette, our servant, has paid 23 sous for half a kilo of butter, and 2 sous for each fresh egg! It is absurd and exorbitant!

"I should like to see my son embracing the noble career of medicine, but I see quite well that he can not; one of the heads of the faculty has confided to me that this profession is literally invaded. And then, this madness of speed is wearing out men. Only yesterday I saw a post chaise tearing along. It makes one giddy! The horses were galloping at more than 5 leagues an hour. And every one wants his carriage! The streets of Paris are so congested that you must wait a long time if you wish to cross them. Madness of the century, my dear friend, for which men will pay in the brevity of their days.

"My son, like his contemporaries, will not live to be old. We know not what the future has in store for him, but we can bet with certainty on his not becoming a centenarian."

THE CONSERVATION OF ENERGY

THE law of conservation of energy which has been the cornerstone of physical theories for several generations may have to be discarded when dealing with certain atomic transformations. The conservation of energy is now doubted because identical radioactive atoms give off electrons of different energy and apparently continue to be identical so far as their energy is concerned.

Dr. Niels Bohr, the Danish physicist, was the first who expressed doubts concerning the validity of the principle of conservation of energy in subatomic phenomena.

At the recent meeting of the British Association in York and again at a physicists' conference in Leningrad, leading investigators discussed this momentous question.

"If we ignore the limitations placed upon us by the unnecessary conservation law, we are led to very interesting developments not only in the case of nuclear phenomena, but also when dealing with the origin of solar energy," Dr. G. Gamow, a young Russian physicist of the Physical Institute of the Academy of Sciences of Leningrad, said in an interview.

"The heart of a star," continued Dr. Gamow, "may be likened to one large atomic nucleus, a few inches or a few miles in diameter. Like the nucleus of the atom this central portion of the star can give off energy continuously, without thereby having its own store of energy or matter reduced. At the same time the star's central core by breaking up into particles of different size gives rise to the nuclei of all known elements. I am at present engaged in calculating upon a probability basis the relative abundance of the different elements originating in the central portion of the star. The final proportion of elements which should be present in a star depends upon other factors as well, for instance upon the lesser stability of the nuclei of the lighter elements under the bombardment of high velocity protons."

THE AGE OF RIVERS AND THE MOUNTAINS THEY FLOW THROUGH

RIVERS are often older than the mountains that rise about them, older than the seemingly impassable ridges through which they flow in steep-sided canyons and "water gaps." How this apparent paradox is geologically possible was explained by Professor Douglas Wilson Johnson, of Columbia University, in a lecture at Washington before the Society of Sigma Xi.

Professor Johnson chose as examples the rivers of the eastern seaboard of the United States, such as the Potomac and the Susquehanna, which rise "back of the mountains," yet break through them to the sea. The rivers, he said, were there before the mountains. Many ages ago, when the predecessors of the present Appalachian mountain system had been weathered away until there remained only a nearly level plain sloping gently

to the sea, the rivers flowed from west to east naturally and with but little hindrance, just as they flow through the prairies of the West to-day.

Then a slow upheaval along the mountain axis lines began. This increased the "pitch" of the land, causing the rivers to flow faster and to wear deeper channels. The more the land rose, the deeper the river cuts became, and the rivers managed to keep their beds cut down to a level that still permitted their egress to the Atlantic, though in places the "water gaps" they had formed became such spectacularly deep affairs as travelers now see at Harper's Ferry on the Potomac.

As the mountain ridges rose, the rivers developed tributaries that ran parallel with them. In time they wore the softer rocks into deep valleys, like the present Shenandoah Valley, leaving the harder rocks standing up as long mountain ridges. In places one of these tributaries worked along the valley so far that it encroached upon the next cross-flowing main stream, and actually "decapitated" it, stealing its upper end and annexing it to its own river system. The North Branch of the Susquehanna is such a pirated stream; it once belonged to the Delaware, but was stolen by the Susquehanna tributary that worked northward along a mountain valley.

PREVALENCE OF RICKETS

THE American Medical Association finds that rickets is still far too prevalent in many communities. This serious childhood disease continues in spite of the fact that a means of preventing it is known and has been broadcast for years by welfare organizations and advertisers of curative and preventive products.

Rickets is caused by lack of an essential diet factor, vitamin D. This is found in various natural products, notably cod-liver oil, and is formed in the body when the skin is exposed to ultra-violet light from the sun or certain other light sources. When these facts were discovered, it was expected that rickets would be eliminated as a serious health menace, just as scurvy was when the cause of that disease was discovered to be lack of vitamin C and the scurvy-preventing foods that contained the vitamin were recognized.

Commenting on rickets, the American Medical Association states that the situation is frankly disappointing. Besides cod-liver oil and cod-liver oil concentrates, the association calls attention to such other available antirachitic agents as viosterol, which is irradiated ergosterol, irradiated products of various kinds, foods fortified with viosterol, and direct ultra-violet irradiation.

Efforts to give rickets-preventing properties to two such widely used foods as milk and bread are of particular interest, in the opinion of the medical association. One of the most recent developments along this line is the successful irradiation of liquid milk at almost insignificant cost, which is reported by Dr. A. F. Hess and J. M. Lewis, of New York City. By means of carbon arc rays, these investigators were able to give milk antirachitic potency which was retained when the milk was dried.

Milk is particularly suitable for such irradiation and subsequent use in preventing rickets because it contains so much calcium and phosphorus, both important in treatment or prevention of rickets.

In the opinion of Drs. Hess and Lewis the use of irradiated liquid milk will probably be restricted to cities.

THE DANGERS FROM DUST

INSTEAD of being a health menace, coal dust breathed in by miners along with rock dust may be a positive benefit, Professor J. B. S. Haldane, of the University of Cambridge, told a University of Michigan audience in a lecture on "Bad Air."

The secret is that coal dust seems to stimulate the expectorant activities of the lungs and throat, so that this dust is eventually removed from the lungs. Rock dust has no such action and normally would remain, a health hazard in the lungs, but when coal dust is mixed with it, the rock particles adhere to the coal and are largely removed from the body when the latter is coughed up.

In the mining sections of the Rand, in South Africa, workers in the quartz seam gold mines are being given transfers of several months to the coal mines as a practical test of this finding, Professor Haldane stated.

Of all working conditions, bad air of one sort or another is the greatest, but most insidious killer, far exceeding industrial accidents in its final totals. Flyers, who at high altitudes get not impure air, but too little, should be warned that the symptoms of this condition are high spirits and optimism which may lead to continued exposure or foolhardy feats.

British statistics, kept on a national scale, indicate that workers in trades exposed to mineral and metallic dust, cutlery grinding being an especially bad example, are much more liable than the average man to tuberculosis, pneumonia and edema of the lungs. Limestone and igneous rock workers, and flour mill employees do not seem to suffer ill effects, but employees in dust-filled cotton mills and sand blasters do, Professor Haldane stated. Silica dust is always dangerous.

Every employer of labor where dust or dangerous gases are an occupational risk, should take steps to remedy the condition. The worker who is being protected is usually the hardest factor to deal with. Employees can easily be urged to protect themselves against machinery that may cause their death in an hour's time, but become careless with dust that may mean death in five years. Employers also benefit from protective measures. In England, he said, one of the reasons why the tin mines have been abandoned was the high compensation rates the operators had to pay workers injured under bad conditions.

DISTRIBUTION OF GAME ANIMALS

So effective has been the conservation of game animals by the government that it is now possible to distribute a surplus quantity of buffalo, elk, and mule deer for exhibition and breeding purposes, and some buffalo and elk are even available to be used as meat.

The two agencies of the federal government engaged in this distribution are the National Park Service of the

Department of the Interior and the Bureau of Biological Survey of the Department of Agriculture. Different methods of distribution are pursued by these two bureaus.

The National Park Service, which disposes only of surplus buffalo and elk, from Yellowstone National Park, has authority to give a limited number of these animals to municipal zoos and other public institutions and to individuals who can give assurance that they have facilities available for properly caring for the animals. No charge is made for them, but in each case the recipient is required to pay all expenses incident to their capture, crating and delivery. In addition to furnishing animals for exhibition purposes, after this demand is met, under special congressional legislation, the killing of any remaining surplus buffalo from the Yellowstone herd for use as meat is permitted, in order that the herd may be kept down to a total of 1,000 head, the maximum number which the range will support.

The Bureau of Biological Survey, on the other hand, has a problem of disposing of surplus buffalo, elk and mule deer, in order to prevent over-grazing on its big-game preserves. This year the bureau has called for bids on 141 buffalo, 162 elk and 45 mule deer. Some sales already have been made and it is believed that most of the animals will be sold, but by making special arrangements, a state or municipal park or zoo may obtain a few animals at cost of handling and transportation. Surplus buffalo and elk that can not be disposed of in this way will be sold for meat, although animals less than two years of age will be sold only for breeding and exhibition. The mule deer, which are suitable only for regions west of the Mississippi River, will be disposed of only for exhibition and breeding. It is necessary to maintain a certain limit on the numbers of these animals that may be grazed on the various game preserves, in order to avoid over-grazing and resultant malnutrition and suffering among the animals under government protection.

The National Park Service states that the shipping weight of buffalo, crated, varies from 850 pounds for yearlings to 2,000 pounds for four-year-olds and over. The shipping weight for adult elks, crated, varies from 600 to 800 pounds.

In previous years the surplus Yellowstone buffalo to be used for meat were sold to the highest bidder, but recently the demand for this meat has decreased and it was therefore suggested that the best use that could be made of the meat was to offer it to the Indian tribes in the vicinity and to the relief organizations of adjoining states.

ITEMS

THE amount of influenza in the country almost doubled within a week, according to reports received from state health officers by the U. S. Public Health Service. A sharp outbreak on the West Coast has now spread to the South. For the country as a whole, 6,306 cases were reported for the week ending November 26, the last for which complete figures are available. For the preceding week the total was 3,086. Influenza reporting is said to be notoriously poor, and health officials estimate that the actual number of cases is probably five or six times the reported number. The states having the largest number of cases are Alabama with 1,940, Arizona with 479, Louisiana with 600 and California with 1,721.

SAN JOSÉ scale, one of the worst insect pests of orchard trees in America, has been discovered in several recently planted orchards in Austria. It was traced to a source in Hungary; the insects were on young trees from nurseries in that country. All such nursery stock is supposed to be fumigated with cyanogen gas, but apparently in some instances at least due care was not exercised. All the affected trees in Austria have been destroyed, and the orchards where they grew are under strict quarantine. Hungarian authorities are taking steps to wipe out the focus of infestation in their country, and German agricultural and customs officials have redoubled their guard against the pest in nursery stock crossing their boundary.

GASEOUS ammonia has been detected in the atmosphere of the planet Jupiter, by Dr. R. Wildt, of the astronomical observatory of the University of Göttingen. Dr. Wildt made his discovery through a study of the infra-red spectrum of the planet's light. He has also found methane, or marsh-gas, in the atmosphere of Jupiter, Uranus, Saturn and Neptune.

IRREGULARITIES of the teeth are to be the subject of special research at Columbia University. This condition is scientifically known as malocclusion. A common form is seen in people with buck teeth. Malocclusion is found in all races and at all levels of society. Confusing theories as to its cause and results are held by both dentists and physicians, and even the present methods of treatment are unsatisfactory. Investigation of the subject at Columbia will be under the direction of Dr. Milo B. Hellman who has been appointed professor of dentistry at the university.

ASKING a child which parent he prefers, or even questioning the parent in this regard, is no way in which to test the theory of Freud that children tend to prefer the parent of the opposite sex, Dr. Dorian Feigenbaum, psychoanalyst of New York, said in a letter to *Science Service*. Freudians have never maintained that parents, or even the children themselves, are conscious of a specific preference for the parent of the opposite sex. When speaking of such a preference, Freudians refer to drives and complex situations far removed from consciousness and detectable only by analysis. These comments referred to a study recently conducted by Dr. John E. Anderson, of the University of Minnesota, in which questionnaires were filled out by the parents of 3,178 children. The answers indicated no sex differences in attachment for the parents—both boys and girls showing a slight tendency to prefer the mother.