SCIENCE NEWS

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THE USE OF HISTAMINE IN ALLERGY

GOOD results in more than one third of a group of 94 sufferers from allergy following treatment with the chemical, histamine, were announced by Drs. Frank F. Furstenberg and Carl E. Arbesman, of Baltimore, at the meeting in Atlantic City of the Society for the Study of Asthma and Allied Conditions. Histamine, however, is not a panacea or a specific for allergic diseases.

It was found that the chemical is chiefly helpful to those patients whose asthma or hay fever symptoms are due to physical agents such as heat or cold, or those who have itching and hives from pressure of garters, girdles or suspenders.

Of the 94 patients treated with histamine during the last three years at the Johns Hopkins Allergy Clinic and in private practice, 45 got no relief from the treatment, 16 improved and 33 had excellent results. A few of the patients have been free of symptoms for more than two years. Some with good results had relapses but responded promptly to another series of treatment. Some patients still get the treatment once a month and remain well.

The chemical is injected under the skin in a very small dose at first, and the dose is gradually increased during the course of 14 injections three times a week. When the maximum dosage has been reached, the periods between injections are lengthened and the treatment tapered off with monthly injections.

The theory is that the symptoms are due to release of histamine in the tissues and that the small, increasing doses of the chemical will desensitize the patient to it. An enzyme, histaminase, which inactivates histamine, has been tried in allergic patients, but these were not reported.

Potassium chloride, another remedy for simple hay fever, did not prove to be of any value in the treatment of 85 patients, according to the report of Drs. Furstenberg and Leslie N. Gay, also of Baltimore.

HOPE that patients with hay fever, asthma, hives and other allergies can be helped by treatment with a new enzyme remedy, histaminase, is somewhat dashed by experiences two Los Angeles physicians, Drs. Hyman Miller and George Piness, report in the *Journal* of the American Medical Association.

The treatment gave no relief at all to five patients with chronic allergic skin disorders, five patients with chronic allergic bronchial asthma and three hay fever patients. Among 28 patients complaining of hives, a few reported relief following histaminase treatment, but the nature of this condition is such that it was impossible to state whether the relief was specifically due to the treatment. For example, one patient who had hives from exposure to sunlight experienced some relief from the itching while taking the histaminase capsules, but he was taking them at the season when his condition usually improved anyway.

The theory of the treatment is that the immediate cause of the signs and symptoms of allergy is liberation of the chemical, histamine, in the tissues. Histaminase is an enzyme which antagonizes histamine. Capsules of this enzyme, obtained from hog's kidneys, are now being manufactured and offered to the medical profession as an effective remedy.

"The clinical value of the use of histaminase is highly questionable," according to Drs. Miller and Piness. Their conclusion from their own use of the remedy in 42 patients is that the treatment "failed to give unequivocal evidence that this enzyme was responsible for the relief or prevention of any of the signs or symptoms of which the patients complained."

GROWTH OF THE HUMAN BRAIN

MAN'S evolution as a "brain animal," with a cerebral development that is an outright anatomical runaway, is primarily responsible for all the changes that have taken place in the human skull, according to Professor Franz Weidenreich, of the Peiping Union Medical College, who spoke at the meeting in New York City of the American Association of Physical Anthropologists.

Professor Weidenreich, leader of research on Peking Man, one of the most ancient of human races, held the extraordinary enlargement of the brain responsible not only for the necessary changes in the case of bone that houses it, but also for the changes in accessory skull structures such as the reduction in size of face and teeth as contrasted with conditions to be found in fossil and living great apes.

Analogous changes have taken place in the skulls of dogs. Small dogs, like King Charles spaniels, have skulls larger in proportion to the rest of their bodies than are the skulls of big dogs like wolfhounds; and with the relatively larger skull goes reduction in size of face and development of teeth.

"Dogs and man differ," said Professor Weidenreich, "only in that the brain of dwarf dogs has increased relative to the size of the body, whereas in man the brain is expanded absolutely. Similar relations and differences can be found also in other mammalian groups. These facts prove that the evolution of the special character of the human type is strictly orthogenetic and does not alter the basic pattern which man shares with the anthropoids."

ECONOMIC AND SOCIAL PROBLEMS OF NORTH AND SOUTH AMERICAN INDIANS

A PERMANENT clearing house to aid 30,000,000 North and South American Indians in solving their economic and social problems is advocated by the United States Commissioner of Indian Affairs, John Collier.

Heading a delegation including scientific men and Indian Service officials from the United States at the first Inter-American Conference on Indian Life, in session at Patzcuaro, Mexico, Mr. Collier considers it strange that in the centuries since Columbus the governments of America have never before met to exchange ideas and experi-

ences relating to Indian problems. An Indian Institute somewhere in the Americas would gather and give out information to American countries for possible use in improving Indian health, farming methods, education and well-being in general.

Emphasizing that the Indian can no longer be considered a dying race, which will solve its problems by vanishing, Mr. Collier reported that the Indian is the fastest-growing element in the United States' population. While these Indians are a tiny minority, only about 350,000 people, the need to work for their economic independence is increasingly apparent.

Methods of dealing with the land erosion problem on Indian farms and ranges were described to the conference by the chief of the U. S. Soil Conservation Service, H. H. Bennett. Teaching farmers to prevent erosion and to conserve water, he said, leads to more profitable agriculture, generally. The Indians learn to raise more varied crops and to bring idle land into production. Indians themselves were among the world's early soil conservationists. Incas or even earlier Indians in Peru recognized the menace of soil erosion and carried out one of the most costly and effective conservation programs in history. Many rock-wall terraces which they built across mountain slopes, for irrigating and for preventing the soil from washing away, are still in use.

VOLCANIC ACTIVITY IN THE CRIPPLE CREEK GOLD MINING FIELD

SLIGHT volcanic activity is believed to be going on in the famous Cripple Creek gold mining field in Colorado. One mining company has been studying its shafts which tap relatively unexplored underground regions in what was once a crater of a volcano which "blew its head off" probably millions of years ago.

Gas intrusions, seeping up into the mine from beneath, have hampered the work and it has been noted that just before such intrusions of gas, temperature and humidity in the mine go up. Troy E. Wade, secretary of the Cripple Creek-Victor Operators' Association, believes this shows the gas is warm and that it carries a mantle of vapor.

It is thought that the gas may be seeping in from fault crevices in the rock veins laid down by the volcano amid country granite and that the gas intrusion indicate traces of still-present volcanic activity.

Shafts as deep as 700 feet underground, in other parts of the crater, have revealed pieces of charred wood that may have been parts of forest trees hurled into the crater when the volcano exploded millions of years ago.

In recent years studies by A. H. Koschmann, geologist working for the U. S. Geological Survey and the Colorado Metal Mining Fund, have indicated that volcanic activity may have had only a little to do with the formation of the ores which have so far yielded $400,000,000 in gold and silver values.

SYNTHETIC CRYSTALS

FROM earliest recorded times man has been using transparent solid materials to do things with light. The old-fashioned burning glass was a prized possession of early explorers, the simple magnifying glass led to the microscope and a new world of the small, telescopes expanded man's knowledge of the universe, and the spectroscope led him into the world of the atoms.

To probe the invisible ultra-violet and infra-red light on the two sides of the visible spectrum, man soon learned that ordinary glasses were insufficient and turned to natural crystals like quartz, calcite and rock salt because they could still transmit radiation in these regions of wave-lengths. The world was combed for bigger and bigger crystals of these materials to go into the instruments of science.

Now, however, synthetic crystals are being grown by science, according to a report prepared for the American Chemical Society by Drs. H. C. Kremers, of the Harshaw Chemical Company, Cleveland.

Synthetic single rock salt crystals up to 25 pounds in weight are grown from which prisms five inches tall and with 6-inch faces can be cut. These prisms are especially good in the infra-red region of the spectrum and will transmit out to 200,000 Ångstroms in wave-length. The human eye can see only so far at 7,500 Ångstroms in the deep red.

Other huge synthetic crystals now being grown include those of sodium nitrate, potassium bromide and lithium fluoride; the latter especially useful in the ultra-violet region.—ROBERT D. POTTER.

A NEW WOOL-LIKE NYLON

A NEW patent, by the U. S. Patent Office, covers the production and processing of a crimped wool-like fiber made from nylon. The new patent is issued to John Blanchard Miles, Jr., of E. I. du Pont de Nemours and Company, and is assigned to du Pont. The new wool-like nylon is said to approach, "and may even equal" wool in its heat-insulating properties. Other claims of superiority include strength, heat stability, dyeing characteristics, elasticity, mothproofness and immunity to any harmful action by common cleaning fluids or processes.

E. K. Gladding, manager of the nylon division of du Pont, says there is no immediate commercial production planned for the new wool-like nylon fiber. Such production will require new types of manufacturing equipment, all of which must be designed and built.

The patent covers the conversion of filaments from synthetic linear condensation polymers, particularly polyamides, into wool-like fibers by mechanical methods of "crimping" either prior to, during or following the "cold-drawing" process which is used in making nylon yarn. In general the patent states that at least four crimps to the inch are required to obtain a wool-like material.

The retention of the crimpy quality after the stretching that occurs in normal use is improved by hot water or steam setting treatments. The new fiber lends itself to the preparation of mixed fibers and its luster can be controlled in manufacture to improve its appearance.

Nylon is the chemical material which in fine filaments can be made into sheer, strong and water-repellent hosiery now on the market. In thicker filaments it is being used for fish lines and leaders, and coarse bristles of nylon are appearing in toothbrushes. The application to a crimped

wool-like fiber is the newest achievement of this versatile chemical material.

"ERSATZ" COD-LIVER OIL

"ERSATZ" cod-liver oil will be used next winter as a result of the war in Norway, according to a prediction made by Robert William Rodman, of the *Druggist's Circular*, at the Richmond meeting of the American Pharmaceutical Association. He said: "When Germany invaded Norway early last month and the Scandinavian area became the present locale of World War II, the source of supply of 70 per cent. of the cod-liver oil used in the United States was immediately cut off and this nation faces a real shortage in this important medicinal product. The hostilities came at a bad time for the cod-liver oil industry as spring is the big cod-fishing season and stocks of oil in this country are at their low point of the year following heavy winter sales when vitamin products are in the greatest demand.

"Norway's chief fishing ground for cod is around the Lofoten Islands near Narvik, which has borne the brunt of intensive air, sea and land fighting, and the two principal refining centers are Bergen and Aalesund, both of which are or were in the hands of the German army and have, therefore, been the target for aerial warfare.

"It is doubtful, even if the war should end to-morrow, that fishing and refining activities could be sufficiently re-established during the current season to afford much relief from the shortage which is imminent and which will be felt even more next fall and winter when cod-liver oil will again be in great demand as a vitamin tonic."

Cod-liver oil is valuable for its content of vitamins A and D, the latter being the rickets-preventing vitamin. Both of these vitamins can be prepared from other sources, and Mr. Rodman predicted that the cod-liver oil shortage resulting from the war will speed up research in the production of substitute fish liver oils and the manufacture of synthetic vitamins A and D. Iceland and Japan have been supplying 30 per cent. of U. S. cod-liver oil imports in recent years.

The United States is in much better position with regard to medicinal chemicals than it was at the outbreak of the World War in 1914, but the market for botanical drugs has been disrupted for months by the present conflict. Germany, Hungary, Czecho-Slovakia, Jugoslavia, Poland and Russia supplied the bulk of these imported by the United States. The future supply depends largely on what Italy may do. If she joins Germany it will be "virtually impossible to obtain botanical drugs from Europe." These drugs include ergot, lavender flowers, orange peel, cascara, cantharides, camomile, malva flowers, buchu, henna, peppermint, gentian, arnica flowers, senega, anise, juniper berries, poppy, fennel, and arabic, asafetida, myrrh and benzoin gums.

Japan's recent suggestion of interest in the Dutch East Indies has worried the drug trade because the Indies are the source of the world's supply of cinchona bark from which quinine is made. Mr. Rodman pointed out that not only the world's quinine supply but through it world trade in other commodities might be upset if Japan should seize the Indies.

ITEMS

IN the canebrakes in Liberia lives a rat species two feet in body length, specimens of which have been captured by Dr. Wm. M. Mann, now in the jungles of Liberia to obtain new beasts and birds for the National Zoological Park in Washington. Other prizes captured by Dr. Mann include a pygmy squirrel, mouse-sized and equipped for gliding like our native flying squirrels; a potto, which is a big-eyed, nocturnal lemuroid, among the lowest of the ape-monkey tribe; and a number of duikers, which are tiny antelopes believed by the natives to possess four eyes apiece. The extra "eyes" are really slit-like glands near the nostrils.

THEY'RE called both May-beetles and Junebugs: you may take your choice. Naming anything by the calendar is bound to result in inaccuracy, if the organism is at all widely distributed, for it is bound to appear through a range of several weeks, as spring moves up the map. These beetles appear in May, or even earlier, in part of their range; farther north not until June. May-beetles may seem to be rather harmless, if blundering, creatures. But in their infancy they constitute a major pest, for their larvae are the terrible white grubs that are the ruin of lawns, golf greens, strawberry patches and gardens generally.

DISCOVERY of 7,000 crude stone tools made by unidentified American aborigines, who used the same techniques as Europe's Stone Age people of half a million years ago, is reported by Dr. E. B. Renaud, of the University of Denver. Dr. Renaud found the rough chopping and scraping implements during his archeological survey of the High Plains in Wyoming. European archeologists, to whom he has sent samples of the American stone work, agree that the work is strikingly like early stone industry of Europe's Old Stone Age. Dr. Renaud reports that he has no evidence yet as to age of the American finds, and that he has no reason to think they are as old as Europe's Old Stone Age. The bulk of the collection was obtained on the surface at three sites in a terraced river valley.

A COMBINATION of a chemical used during the World War as a high explosive, dinitrophenol, and the drug sulfanilamide is prolonging the lives, with possibilities of permanent cure, of guinea pigs having tuberculosis. These animal experiments, indicative of a possible method of treating human tuberculosis, were reported to the American Chemical Society by N. L. Howell and E. C. Link, of Memphis, Tenn., who said: "While the experimental work is only preliminary, it is extremely significant that of the experimental animals treated all, with the exception of one animal, lived from five to 15 months after date of infection. This is a ripe old age for tuberculous guinea pigs." The use of the dinitrophenol is based on the idea that some chemical is needed to penetrate the bacillus causing tuberculosis so that entry can be made for the sulfanilamide. This idea, they added, is not new and is frequently necessary to stain certain micro-organisms in the laboratory. Carbolic acid, they said, is often used for this purpose.