MEDICINE

Malady of Our Times

High blood pressure personalities are characteristic of the era in which we live. Such persons need to find their individuality and adjust in the best way to demands.

➤ THE HIGH blood pressure personality is "characteristic of our times," Dr. Robert Sterling Palmer of Massachusetts General Hospital, Boston, declares in a report to the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION (Sept. 23).

"Practicality, objectivity and adaptability" are the chief characteristics of high blood pressure personalities, he finds from a study of 50 patients. The study, he points out, was made by a physician specializing in internal medicine, not by a psychiatrist.

"Originality, special skills and even special interests are conspicuous by their absence," he reports.

The personality pattern he found in the 50 high blood pressure patients is not specific for high blood pressure. It is the "personality's protective coloring induced by the prevailing normal climate."

"Tension results when this outer coat does not fit the patient's inner disposition," he states.

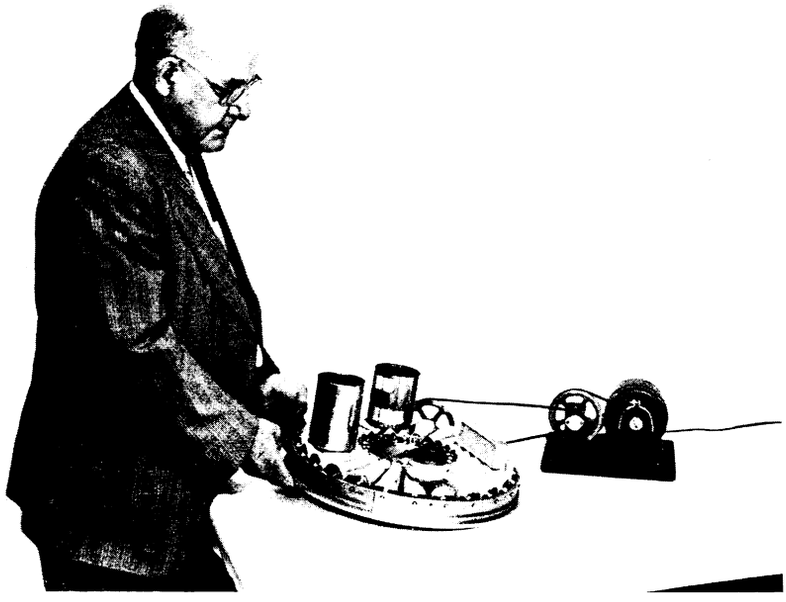
This tension is not specific for high blood pressure, either, but "contributes importantly to the development of other diseases of civilization.

"The task is first to assist the patient in finding his own inner individuality and second, to adjust it as best he can to current demands. This cultural factor in the causation of the disease presents a problem, doubtless insurmountable in one or several generations. This is not a reason for failure either to state the problem or to attempt to do something about it."

Dr. Palmer worked out a technique for inducing strain in patients with high blood pressure. It consisted in having the patient leaf through a 45-page loose-leaf notebook. On the first pages of the notebook are given simple statements about heart disease, high blood pressure and the outlook for patients with this condition. On each of 20 pages is printed the statement of a painful life situation or event from the history of an actual patient with high blood pressure. Outlines of 11 brief case histories of patients, especially in their psychosomatic aspects, are then given.

The patient reads, comments and asks questions. The blood pressure is taken at one or two minute intervals. When a rise in blood pressure, a telltale change in expression or position or some comment shows that something in the booklet has struck home, the doctor and patient can discuss it. In this way the doctor and patient both learn what emotional disturbance may be causing the high blood pressure in this particular patient. From this, methods of relieving the stress and the anxiety about the high blood pressure may be worked out.

Science News Letter, September 30, 1950



DEFIES GRAVITY—By a 20-degree uptilt of his circular conveyor model, E. T. Lorig defies the laws of gravity. Inventor of the self-centering roll, he demonstrates the strong centering action on objects of various sizes, shapes and weights. The conveyor consists of a nest of split conical rolls individually driven.

ENGINEERING

Develop New Type Conveyor Belt for Industry

➤ U. S. STEEL rolled out a new type of industrial conveyor on which loads move automatically to dead center and stay there.

Invented by E. T. Lorig, chief engineer of Carnegie-Illinois Steel Corp., a U.S. Steel subsidiary, the conveyor is a pathway of steel rollers. On each axle are twin rolls, each tapered slightly from the center out, but tilted so their working surfaces form a straight line.

The net effect is a "toe-in" force toward the center of the conveyor. As an object moves along the rolls, friction centers it exactly. The engineers dubbed the principle "planar action." Conveyors based upon this principle are already at work in several U.S. Steel plants. The rolls are being manufactured by Carnegie-Illinois in Johnstown, Pa.

Science News Letter, September 30, 1950

ARCHAEOLOGY

Monks Slowly Rebuild Destroyed Monastery

➤ THE SOUND of the pick and shovel are familiar to any archaeologist. Those who have dug up ancient cities know the task of trying to assemble broken pots, cuneiform tablets, stone inscriptions, life-size marble statues or mosaics.

At Monte Cassino, of World War II fame, emerges a new romance to archaeology. On top of this mountain overlooking the plains across which American troops fought for merciless weeks, the sound of the stone hammers beats a tatto. The monks are rebuilding their monastery according to ancient plan. Here lie thousands of fragments made by recent steel shells and explosives—all being restored like a giant mosaic.

In one corner of a courtyard a black-robed monk is assembling carved marble blocks according to his pen and ink sketch of the way they were before the bombs came.

The chapel was demolished by shell-fire, but the tomb containing the bones of the monks' patron, Saint Benoit, was unharmed. A dud landed three feet away; this has been left where it fell, its nose buried in the ground. A passer-by might

refer to this as a miracle.

In the local museum reconstruction drawings of sections of the Monastery by the monks have been framed. These are the working models.

As soon as hostilities ceased, the rebuilding of the Monastery at Monte Cassino began. Five years later considerable progress has been made, but it will require perhaps 20 years to complete the restoration.

Those who work on this project, including monks, stone masons and craftsmen, are discovering the romance of modern archaeology.

Science News Letter, September 30, 1950

CHEMISTRY

Alkali in Fine Varnish

The silicon in the varnish used by Stradivarius came from wood ashes. Now the secret of the "lost art" is solved, and this fine varnish can be duplicated.

➤ ALKALI extracted from wood ashes is part of the "lost art" of making old Italian varnish used centuries ago by Stradivarius, the Amati and other famous violin makers, Joseph Michelman of Cincinnati, Ohio, discovered.

Following this method, Mr. Michelman has been able to recreate a varnish similar both in appearance and chemical composition to the old Italian varnishes.

Through spectrographic analyses of samples of the old varnishes, made with the aid of Alan Goldblatt of Chicago, Mr. Michelman had previously discovered the principal elements in the brown varnish. These were aluminum, iron, silicon, sodium, calcium, magnesium, lead and manganese, in the order named. Aluminum, iron and silicon were present in all 12 specimens of brown varnish analyzed.

The "unexpected and constant appearance of silicon was perplexing," Mr. Michelman states.

He could account for the presence of the other elements but not for the silicon. And until this was accounted for, rediscovery of the so-called secret of Stradivarius could not be held valid.

By study of methods used by the old alchemists and apothecaries as recorded in writings of the years 1550 to 1750, before and during the period when the old Italian varnish was in existence, Mr. Michelman came on a satisfactory explanation for the silicon in their varnish.

Briefly, this is that the alkali they used to dissolve resin was extracted from wood ashes with water and lime. Silicon compounds are always present in wood ashes, and this, Mr. Michelman suspected, was the source of the silicon in the old Italian varnish.

Details of the duplication of the old method of making varnish are reported in the journal, SCIENCE (Sept. 22).

Science News Letter, September 30, 1950

ASTRONOMY

Mars Day Sky Is Deep Blue

➤ AN OBSERVER located on the surface of Mars would find a deep-blue daylight sky, Dr. Donald H. Menzel of Harvard University stated in an address to a special meeting of the Royal Astronomical Society in Dublin, Ireland.

"The polar caps of Mars are not great blocks of ice, but mere fields of hoarfrost, ice crystals like those on a windowpane or in the freezing compartment of an electric refrigerator. Their thickness is probably only a fraction of an inch and, during the long Martian summer, the frost caps slowly evaporate, without melting," he stated.

Unlike the earth, where only a minute fraction of the available moisture occurs as atmospheric vapor, Mars has a very sizable fraction of its moisture in the atmosphere. Even so, the humidity is extremely low—less than one-tenth of one per cent on the average, he said.

Once the polar cap has disappeared, within the season of the midnight sun, the polar caps can become the warmest spots on the surface of the planet. The temperature may rise to 65 or 70 degrees above zero Fahrenheit, Dr. Menzel stated.

He agreed with Dr. G. P. Kuiper of Yerkes Observatory that some simpler forms of vegetation, such as lichens, may be present on Mars. This form of life would account for the dark markings that change their color values with the Martian seasons. He also agreed with Dr. Kuiper in stating that animal life of types similar to those observed on the earth would be unlikely.

To account for the difference in the size of Mars when photographs are taken by blue and by red light, an effect first noted by Dr. William H. Wright of Lick Observatory, Dr. Menzel suggested a thin layer of fine carbon dioxide (dry ice) snow some 60 miles above the surface of the planet.

Science News Letter, September 30, 1950

GENETICS

Study of Genetics Aids Cancer Research

➤ THE science of genetics is helping in the search for causes and cures of cancer, even though heredity is at present a variable and uncertain factor in human cancer, Dr. Clarence Cook Little pointed out at the Golden Jubilee Celebration of the science of genetics in Columbus, Ohio. Dr. Little is director of the Jackson Memorial Laboratory, Bar Harbor, Me.

"Unbalanced growth tendencies introduced from different parental backgrounds may be a potent and basic factor in tumor formation," he said.

In most types of cancer, heredity may be involved, but its effects are complex and often indirect and unpredictable."

"In laboratory animals, however, where the force of heredity can be controlled, concentrated and analyzed, it is a powerful and important element in creating strains which are remarkably free from cancer or those in which its incidence is very high, generation after generation."

The use of genetics, he added, not only aids cancer research but has developed principles applicable in the whole field of experimental medicine.

"The hormones which affect the origin and progress of cancer growth," he said, "are to a large extent controlled in their degree of development of genetic influences."

Science News Letter, September 30, 1950

On This Week's Cover

➤ ARTIFICIAL suns six inches in diameter and comparable in temperature to the surface of the sun in the sky were demonstrated by Dr. Russel A. Miller, project supervisor of the high temperature research laboratory, in Philadelphia at the new Research Institute of Temple University.

Rods of aluminum, magnesium, and other metals are burned in small furnaces made of each metal's own product of combustion. Oxygen under pressure forms the atmosphere in which the six-foot metal rods are burned. Pools of melted metal, their surfaces covered with flames of burning metal vapors, are the "suns," as shown on this week's cover of SCIENCE NEWS LETTER, whose brilliance can be used to measure the temperatures inside the furnace. Materials are studied at the Institute at temperatures up to 7,000 degrees to learn how to make rocket engines and high-temperature turbines of more resistant materials.

Rotating furnaces are among the devices used to get the maximum heat from burning metals. These throw melted metal in thin sheets against the refractory sides of the combustion chamber, allowing it to combine faster with the oxygen supply.

Science News Letter, September 30, 1950