

MEDICINE

Real Broken Heart From High Blood Pressure

► THE TYPE of person likely to suffer an actual broken heart was described by Drs. Stanford Wessler, Paul M. Zoll and Monroe J. Schlesinger of Boston at the meeting of the American Heart Association in Cleveland.

He, or she, is the kind of person who has high blood pressure or makes excessive exertion and suffers a particular kind of heart damage.

They made a careful study of 20 broken hearts, or ruptured hearts to use the medical term. The causes they found had no apparent connection with the romantic or sentimental causes popularly said to break hearts.

Rupture, or break, of the heart usually comes, they found, between the fourth and eleventh day of an acute attack of the kind of heart damage called myocardial infarction. This means an area in the heart muscle has solidified and died from anemia because of obstruction of the blood supply to that area.

When a heart blood vessel gets an acute block and infarction develops across the heart wall in a region poorly supplied by other blood vessels and unprotected by scar tissue, the groundwork is laid for rupture. But even with this ready-to-break state, the heart may not break unless high blood pressure or excessive effort occur during the acute infarction. The reverse is also true, the doctors found. High blood pressure and excessive effort do not produce rupture unless the heart has already suffered the damage readying it for a rupture.

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AERONAUTICS

Jet Propulsion Goes From Military to Civilian Use

► JET PROPULSION of airplanes passed from military to civilian use in London on May 2 when the British Comet Jetliner went into regular service. This 36-passenger transport is the world's first airliner powered with turbo-jet engines, the type now used in the speedy fighters and bombers of military services.

Over two years have elapsed since a British airliner propelled by jet power started flight tests. British engineers now feel assured that jet propulsion is suitable for civilian planes, particularly for long flights where speed is an essential. Over a year ago a British jetliner made a non-stop flight of 2,200 miles from London to Cairo in 5.5 hours, half the time required for piston-type transports.

Canada also has a jetliner which has made many test flights during the past year, including several to cities in the United

States. The United States has no jetliner although several airplane manufacturers have developed designs and are ready to begin construction when the proper moment arrives. It does have several heavy bombers already in service which are propelled entirely by jets.

The British jetliner now going into regular service will be used on the route from London to Johannesburg, South Africa. It cruises at 500 miles an hour, or 50% faster than conventional liners now in service. Speed is not its only advantage. Its lack of vibration gives passenger comfort not to be found in airplanes with conventional engines. Lack of noise in its passenger cabin is another advantage of the new jetliner.

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CHEMISTRY

War of Fibers Pits Synthetic vs. Natural

► A WAR of the fibers is on. New synthetic textiles have their backers. Traditional cotton, wool and silk have theirs. Unique usefulness is claimed for the new fibers. Champions of cotton, wool and silk say these old, dependable fibers will always meet the major needs of most people.

Dacron, orlon, nylon, acrilan and dynel are the truly synthetic fibers, Joseph B. Quig, manager of textile research for the Du Pont Company's Textile Fibers Department, reported to the American Chemical Society in a recent round-up of information.

Vicara, said Dr. Quig, the fiber made from zein, the protein of corn, has many qualities which relate it to that group.

Dynel resists chemicals and flames. Acrilan and orlon resist sunlight, and have exceptional bulk. Dacron's resilience and nylon's strength will win special places for them in clothing, said Dr. Quig. He believes that the new synthetics have introduced a new dimension into fabrics.

"Viscose rayon is still king of man-made fibers," said Julius B. Goldberg, director of research of J. P. Stevens and Co., New York. The fact that about a billion pounds of viscose rayon were used in the United States in 1951 is proof in his opinion that in both quality and price this material meets the needs of the people.

Acetate enjoys a price advantage among textile fibers, said Ashton M. Tenney of A. M. Tenney Associates, New York. There have been recent improvements in dyeing and finishing acetate fiber.

On the side of traditional textiles, Werner von Bergen of Forstmann Woolen Co., Passaic, N. J., defended wool as essential for winter-weight fabrics. L. K. Fitzgerald of Dan River Mills, Danville, Va., praised cotton as the "work-horse" among fibers, and W. S. Kilborne of William Skinner and Sons, New York, outlined the way scientific thinking should be applied to the problems of silk.

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MEDICINE

Leukemia and Abnormalities Show in A-Bomb Children

► A DEFINITE trend toward more leukemia, and slightly more mutational abnormalities in children of those residents of Hiroshima and Nagasaki who got large doses of irradiation from the atomic bombs has been found in studies of the Atomic Bomb Casualty Commission.

A marked increase in cataracts occurred in persons who were within 1,000 meters, or about two-thirds of a mile, of the bomb's hypocenter.

These findings were reported at the Industrial Health Conference in Cincinnati by Dr. John C. Bugher, deputy director of the Atomic Energy Commission's division of biology and medicine.

No noteworthy effects on general fertility of the bombed populations were recorded once the immediate period of radiation sickness had passed.

Several years will be required before final conclusions of the effects of the irradiation on the atom bombing survivors can be drawn, Dr. Bugher said. Many more years, he added, will be needed to determine the effects on longevity and genetic changes.

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PUBLIC SAFETY

New Insecticides Held Safe When Properly Used

► BANISH YOUR fears about getting sick from the new insecticides and learn to use them properly, is the advice of Dr. William F. Durham, biochemist of the U. S. Public Health Service Communicable Disease Center at Savannah, Ga.

The newer insecticides have not proved any more poisonous than nicotine under practical conditions and have a good safety record when compared with the older poisons still in use, he reported at the Industrial Health Conference in Cincinnati.

Current evidence shows that "human poisoning by modern pesticides, or insect poisons, always involves extensive exposure," he stated.

"Considering that insects cause an annual loss of four billion dollars in the United States alone and that \$54 are saved for every dollar spent on insecticides, pesticides are here to stay and we would do well to learn to live with them safely," he stated.

"The hazards presented by the new insect poisons are not alarming but deserve our best efforts toward reduction."

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CE FIELDS

GENERAL SCIENCE

Fitting Men to Machines Creates Science Frontiers

► BUILDING MAN up so that he can keep pace with the machines he operates has opened new frontiers in modern science, Dr. Hugh L. Dryden, director of the National Advisory Committee for Aeronautics, told the American Philosophical Society meeting in Philadelphia.

He stated that man's unchanging performance creates new problems as the performance of machines increases. Man's vision is not adequate and must be extended by electronic radar-eyes. His physical strength must be supplemented by mechanical or electrical power.

His body must be protected from thin atmospheres by pressurized suits or pressurized airplane cabins. He must be kept within tolerable limits of temperature and humidity. The noise level that surrounds him must not get too high, or else his efficiency will be impaired.

With the coming of faster-than-sound aircraft, man's ability to react to sudden unforeseen crises has become inadequate in many cases. Mechanical aids have been developed to help him under these conditions.

Man's own limitations have led to new developments in technology and in the physical and biological sciences, Dr. Dryden said. His limitations have created new frontiers to be crossed.

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GENERAL SCIENCE

Youthful Scientists Exhibit Next to Famous Collections

► EXHIBITS of a new kind will be installed in the Smithsonian Institution's National Museum May 8, 9, and 10.

Between 30 and 40 high school age boys and girls from all over the nation will display the results of their scientific endeavors. Geological, insect and other collections which won for the boys and girls the right to come to the National Science Fair will be set up where similar, but world-famous, collections have been gathered together through the years by leading scientists. In addition, exhibits embracing physical and chemical concepts will be shown by some of the boys and girls.

Their presence will be as a result of victory in local science fairs all over the nation. The National Science Fair is sponsored by leading newspapers from Los Angeles to Providence, together with Science Clubs of America and SCIENCE SERVICE.

The Smithsonian's retiring secretary, Dr. Alexander Wetmore, himself an outstanding ornithologist, welcomes the boys and girls in these words:

"The Smithsonian Institution welcomes the youthful exhibitors to this year's Science Fair, fully realizing the need for encouraging high school students to develop their interests early in life.

"The work of SCIENCE SERVICE is vital to the future of science. It produces a two-fold effect as it encourages many eager young minds to enter advanced studies in science and, at the same time, increases the larger number of those who understand it and can intelligently support its programs.

"We are pleased to have your exhibitors as guests in our Museum."

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PUBLIC HEALTH

Special Study Will Help Stop Colds

► IF YOU "catch cold" this spring, as many persons do, better see your doctor.

For one reason, your sniffles and stuffy head may be early hay fever or rose fever as it used to be called. For another reason, if it is a cold your doctor can help you.

To be sure, there is no single, sure-fire medicine or treatment that will prevent or cure all colds. But one physician, Dr. Marshall C. Cheney of Berkeley, Calif., thinks it is not necessary for doctors or patients to take a defeatist attitude about colds. Writing to fellow physicians in GP (March), published by the American Academy of General Practice, he says:

"With attention and careful follow-up until colds are controlled, it is my experience that complete freedom from colds can often be provided. Certainly their severity and duration can be reduced to the point where occupation and everyday life are not discommoded and no special treatment is needed as long as the individual adheres to his own special regimen."

Dr. Cheney points out that there are many causes for the symptoms labeled as "common cold." He states there are "57 human varieties of infection," ranging from viruses through bacteria such as pneumococci and streptococci to fungi.

For some of these infections there are remedies. The wise doctor will not prescribe antibiotics or sulfa drugs at the first sign of a cold, but he will be alert to signs of other infections where they may be useful.

Finally, Dr. Cheney says, the person who is especially susceptible to colds can be helped to avoid many of them if his doctor studies his case carefully and prescribes for him as an individual. The same methods will not help all people with colds but your own doctor, Dr. Cheney thinks, can find the ones that will help you even if they are different from the ones that help your neighbor.

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VETERINARY MEDICINE

Cattle Disease Flare-Up Shows Need of Research

► THE LATEST outbreak of the dread foot and mouth disease of cattle in Ormiston, Saskatchewan, hit within less than 50 miles of the U. S. border, closer than any previously known occurrence to the north.

Discovery of 22 virus-infected cattle so near the U. S. emphasizes the constant danger to which this country is exposed from the plague, yet no research work is being done here to fight the disease.

Cattle raising and dairying are multi-billion dollar industries, and disease knows no borders, but suitable facilities for learning more about the virus to insure that it never does strike within the U. S. are lacking.

A law authorizing construction of a virus laboratory was passed four years ago, but so far no funds for building have been appropriated by Congress, although three bills to provide the money have been introduced.

Estimated cost of such a laboratory is \$25,000,000. Although Canada has not required financial aid in the current slaughter-and-eradicate campaign, the U. S. has spent over \$100,000,000 cooperatively with Mexico in bringing the cattle disease under control there and keeping it out of the U. S.

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ICHTHYOLOGY

Fish Bite—Or Don't Regardless of Weather

► FISH PAY no attention to the weather. Whether the barometer is up or down has nothing to do with how many fish you will catch.

Several scientists have tried to find relationships between weather phenomena and fishing, but none of them have been successful. Dr. George W. Bennett, aquatic biologist, State Natural History Survey Division, Urbana, Ill., tried to match up a 12-year creel census from a private fishing club with changes in barometric pressures. After about six months of work he found there wasn't any relationship.

Dr. Edwin L. Cooper, of Michigan's Institute for Fisheries Research, after looking over the results of 4,000 individual fishing trips, said that "fishing was about as good when the barometer was falling as when the barometer was rising."

James G. Sieh and John Parsons made an attempt in Iowa to correlate wind direction, wind velocity, sky cover or cloudiness, and thundershowers or rain with fish activity. They couldn't do it.

This meteorological report to the nation's Izaak Waltons appears in the BULLETIN OF THE AMERICAN METEOROLOGICAL SOCIETY (April).

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