

MEDICINE

Three Signs of Pain Showing Heart Trouble

➤ PAIN IN the chest must have three or more characteristics before it can be taken to mean heart trouble or no heart trouble, Dr. Arthur M. Master of the Mount Sinai Hospital, New York, told members of the American College of Physicians meeting in Chicago.

Heretofore, doctors have considered chest pain to come from the heart if it had any one of six characteristics.

Dr. Master and Drs. Harry L. Jaffe and L. Pordy of the Mount Sinai Hospital investigated 200 patients with coronary disease and angina pectoris, all with abnormal electrocardiograms; 100 patients who had recovered from a coronary occlusion; 25 patients with rheumatic heart disease, and 200 patients with non-cardiac pain.

"We found there were numerous exceptions in each of the six criteria used," Dr. Master said.

Consequently, they believe doctors need three or more signs about chest pain before making a diagnosis. Three or more of the following may mean the pain is from the heart:

1. The pain is located below the breast-bone.
2. It is constricting or oppressive.
3. It is brought on by effort.
4. It radiates into the left arm.
5. It lasts only a short time.
6. It is relieved by nitroglycerin.

Non-heart pain must have three or more of the following characteristics: location in the left chest, aching quality, long duration, occurrence at rest, absence of radiation and failure to be relieved by nitroglycerin.

Science News Letter, April 17, 1954

NUTRITION

New Milk Drink Adds Diet Protein

➤ DEVELOPMENT OF a new non-fat-tening but high protein milk drink is announced in the *Journal of the American Medical Association* (April 3).

Babies and old people who need extra protein, patients with heart, kidney and liver diseases, and very fat people on reducing diets may all benefit from this new milk product.

It is called Kralex. Its advantages as a protein supplement to be eaten or drunk instead of injected are reported by Drs. Gilbert H. Marquardt, George M. Cummins Jr. and Charles I. Fisher of Chicago, and Dr. Lloyd A. Riggs of New York.

Kralex differs from the milk for heart patients announced by the Los Angeles County Heart Association (see SNL, April 3, p. 215), which is regular fluid milk from which the salt has been removed.

Kralex is made from skim milk, so it lacks the fat of regular milk. It is low in salt content, also lacks other minerals and

vitamins, and is not considered or meant to be used as a balanced food. Reportedly very palatable, Kralex can be served hot or cold, flavored with fruit flavors, or it can be used as a base for puddings or cream soups. The milk drink is expected to be a relatively low cost source of protein.

It is made by passing skim milk through ion exchange columns. This process, done continuously, reduces the mineral and vitamin contents of the milk. It is then pasteurized and concentrated by evaporation under vacuum. Casein, a milk protein, is then added in amounts enough to double the protein content of the skim milk. The material is either spray dried into a powder or poured into cans and sterilized.

Science News Letter, April 17, 1954

BIOCHEMISTRY

Wood Pulp May Yield Blood Pressure Remedy

➤ CHEMICALS FROM wood pulp and soy bean plants may be future medicines for patients with high blood pressure.

This appears from a report by Drs. Maurice M. Best, Edward J. VanLoon, Charles H. Duncan and Joan D. Wathen, all of the University of Louisville Medical School and the Veterans Administration Hospital, Louisville, Ky., at the meeting of the American Heart Association in Chicago.

These plant chemicals, the Louisville group found, lowered the amount of cholesterol in the blood of normal persons and of those who had abnormally high amounts of cholesterol in their blood.

Too much cholesterol is believed by some to play a role in hardening of the arteries and subsequent high blood pressure.

The plant chemicals are called sterols. They brought down the amount of cholesterol in the blood without any special diet being given to the patients. So far no toxic effects have been observed.

Science News Letter, April 17, 1954

PSYCHOLOGY

Intelligence and Hand Dexterity Go Together

➤ THE IDEA that pupils who fail in the three R's will excel in the use of their hands is wrong, Dr. Maurice H. Fouracre of Teachers College, Columbia University, New York, declares.

Contrary to popular opinion, he finds that the correlation between intelligence and manual dexterity is exceedingly high.

"Consequently, the mentally retarded are usually not as capable manually as their non-retarded peers," he states.

One of the most important ways a teacher can help a retarded child is to teach the child good work habits, which are closely linked with success in doing a task. Directions should be given orally and repeated as often as necessary, he advises in the *Journal of Home Economics* (April).

Science News Letter, April 17, 1954

IN SCIENCE

STATISTICS

Life as Long for College Athletes as Intellectuals

➤ SPORTSMEN AND "intellectuals" live about the same length of time. A study of 834 Cambridge University rugby football players, cricketers, track men and crew men, and 761 fellow students who were not athletes, shows this, Sir Alan Rook, senior health officer, Cambridge University, reports in the *British Medical Journal* (April 3).

The athletes and the non-athletes whose histories were studied were at the University between 1860 and 1900.

Heart and blood vessel diseases did not kill significantly more of the sportsmen, nor take them at earlier ages than intellectuals.

Sir Alan found some evidence that the heavily built men did not have as good prospects for a long life as the more lightly built men.

Science News Letter, April 17, 1954

BIOCHEMISTRY

Female Hormones For Artery Disease

➤ FEMALE SEX hormones are now being tried as a possible medicine for coronary artery disease, Dr. Irvine H. Page of the Cleveland Clinic Foundation revealed at the meeting of the American Heart Association in Chicago.

Dr. Page called this a "promising lead," but said that there is no convincing evidence yet that they are of practical value.

When given to chickens in which the heart's artery has been damaged, these female hormones make the damage disappear. They are now being tested with some men who have suffered heart attacks.

A second important lead reported by Dr. Page is from research with the anti-clotting chemical, heparin. Heparin also has the ability to combine with other substances in plasma to clear fatty particles from the blood.

This research, Dr. Page said, may eventually give a technique for detecting persons with early stages of artery hardening, which doctors call atherosclerosis and in which fatty substances carried by the blood are deposited in the artery linings.

At present, there are no practical ways of preventing or curing this artery hardening, Dr. Page said, although there may be ways of slowing its development. Because of the current interest and research on this disease, he said, "We must expect atherosclerosis to be 'cured' and its 'cause' proclaimed at least twice a year for the next ten years or so."

Science News Letter, April 17, 1954

CE FIELDS

PHYSIOLOGY

"Catch-Trap" in Lung Arteries Holds Clots

► DISCOVERY THAT the tips of lung arteries act as "catch-traps" was announced by Drs. William H. and Melvin H. Knisely of the Medical College of South Carolina at the meeting of the American Association of Anatomists in Galveston.

After a burn, these lung catch-traps catch large and small masses of blood cells that are stuck together. They hold them until the masses of sludged cells have slowly broken up.

The discovery, made under an Office of Naval Research grant, may lead to improved treatment of burns, particularly those affecting the lungs. The lung artery catch-traps were discovered by examining trans-illuminated living lungs of old and young cats and dogs and mature rabbits. The animals were all anesthetized and their lungs supplied with oxygen.

The living artery tips were found to be wide and rounded. For long distances, the walls of the sides and ends of the blunt artery tips consist largely of the rims of openings from tiny blood vessels into the artery tips.

At the instant of burning many of the visible lung artery ends shut completely. Most of them reopen in a short time. Within 30 seconds to one minute, the masses of stuck-together blood cells come down into the artery tips. There the largest masses are trapped immediately. Meanwhile blood continues to flow down and around the largest masses.

Gradually, perhaps affected by chemicals from the blood, the trapped masses disintegrate.

Science News Letter, April 17, 1954

GEOLOGY

Movement of Glacier 1,000 Feet in 5 Years

► IF YOU should thumb a ride on a glacier, do not expect to break any speed records. Ice on mile-wide Highway Glacier on Baffin Island was clocked by members of the Baffin Island Expedition and is now reported to the Arctic Institute. It had moved about 1,000 feet in five years.

However, not all parts of the glacier moved at the same rate or even in the same direction, Dr. W. H. Ward, English glaciologist, said in his report in *Arctic* (December, 1953).

Measurements were made by triangulation of the absolute movement of eight points on the surface at an elevation of about 2,500 feet where the surface slope is about three degrees. The points were ob-

served on July 7, 1953, and 38 days later. Horizontal movement of the points parallel to the lengthwise direction of the glacier varied from 10 to 52 feet.

This irregular movement causes strain in the glacier, confirmed, Dr. Ward said, by the rate at which "crevasses adjacent to the steep rock walls visibly opened and closed around" one of the tents.

Summers are short on Penny Icecap, Drs. Svann Orvig and B. H. Bonnländer, meteorologists on the expedition, report. There were only 14 days with maximum temperatures above freezing. The highest was 38.5 degrees Fahrenheit on July 25. Melting occurred only a few interrupted periods counted in hours.

Fog occurred almost constantly during the summer—on 25 days in June, 27 in July and eight of the first nine in August.

Wind speeds, however, were surprisingly low. In fact, blizzard conditions occurred on only nine days out of 85.

Seventeen new geographical names were assigned by the expedition and have been approved by the Canadian Board on Geographical Names, among them the Highway Glacier, Penny Icecap, and Mt. Battle after a young geomorphologist of McGill University who lost his life in the icy waters of a glacial stream while on the expedition.

Science News Letter, April 17, 1954

NUTRITION

Urge Doctors to Try Diets Themselves First

► DOCTORS SHOULD be made to try new diets themselves before prescribing them, Dr. Irvine H. Page, director of research at the Cleveland Clinic Foundation, declared at the meeting of the American Heart Association in Chicago.

His advice came after his own trial of the kind of low-fat diet some doctors advise for atherosclerosis, or hardening of the arteries.

When he reduced the fat content of his own diet to about 15% of the total calories, Dr. Page said, there was a sharp fall in blood fat levels, sharp loss of body weight, marked gastrointestinal disturbance, "an impairment of my disposition and a contraction of my circle of friends." When he added enough fat to overcome the ill effects, the blood fats quickly returned to previous levels.

"The experiment was ended after a year," Dr. Page said, "with the firm conviction that diets should be changed with the greatest caution and that physicians should be required to try their diets before prescribing them."

It remains to be seen, Dr. Page said, whether diets with a minimum amount of fat necessary for good health, but still low according to ordinary American standards will maintain a normal blood fat level. If the answer involves almost complete fat starvation, then, Dr. Page declared, "the problem seems to me almost insoluble in terms of diet."

Science News Letter, April 17, 1954

PHYSIOLOGY

Old Theory of Hair Growth Incorrect

► THE OLD theory that hair grew because the hair follicles in the "quiet" state set aside a "hair germ" to begin the process of new growth is not correct, Drs. William Montagna and Herman B. Chase of Brown University, Providence, R. I., told members of the American Association of Anatomists meeting in Galveston, Texas.

The outer sheath of the upper part of the hair follicle, they found, is most important for regenerating new hair.

The two scientists from Brown traced the pattern of hair degeneration and regrowth on the human scalp after treatments with X-ray. After the X-ray treatment, the entire matrix of the follicle bulb degenerates. This is followed by more gradual degeneration of the upper bulb, then by shedding of the hair. At this point, the remaining follicle becomes a solid core of cells from the outer sheath of the follicle.

At the same time this degeneration is taking place, the base of the follicle is retreating further into the skin. After five to seven weeks, the base of the follicle is resting half way up in the scalp skin.

Now the process of regrowth begins to take place. The first sign of this is an increase of the cells at the base of the follicle cord to make contact with the skin bud adjacent to them. After growing around this bud, the follicle continues to re-form and eventually grows a new hair.

Science News Letter, April 17, 1954

PSYCHOLOGY

Child Molesters Are Sexually Childish

► THE MALE sex criminal who molests little girls does so because he feels himself to be psychosexually childish, Dr. Emanuel F. Hammer of the New York Psychiatric Institute told the Eastern Psychological Association meeting in New York.

Dr. Hammer reported a study of 31 inmates of Sing Sing Prison convicted of rape, and compared them with another 33 Sing Sing inmates convicted of a sexual offense against a little girl.

A test designed to measure indirectly the psychosexual age of the men was given to both groups. Each man was asked to draw a tree. Then he was asked to tell the age of his drawn tree. Psychologists theorize that the age ascribed reflects the felt psychosexual age of the individual. The average age given by the rapists was 24.37 years; the average given by the sex offenders against children was 10.62 years.

The mental childishness of the child molesters is also reflected by the nature of their offenses, Dr. Hammer said. The overwhelming majority of them were guilty of peeping, exposing themselves, and feeling of their victims. These are childish expressions of the sexual urge, he explained.

Science News Letter, April 17, 1954