CARDIOLOGY

President's Heart Doctor Writes Book

➤ PRESIDENT EISENHOWER'S special doctor for his heart attack, Dr. Paul Dudley White of Boston, has written a book for other heart patients. In it he makes the following points:

1. An individual's own "zest for living" and intelligent cooperation with his doctor can tip the scales in favor of recovery after a heart attack.

2. If no complications develop and the patient faithfully follows the routines set forth by his doctor, he can generally expect to "get fully back into the swing of things again" in three or four months "and that means back to the job."

3. "Eighty percent survive their first heart attack and most of them recover enough to enjoy many years of productive activity."

4. Angina pectoris, an "ache of the heart muscle itself," occurs because the heart muscle is not receiving sufficient oxygenated blood as a result of atherosclerotic narrowing (rather than complete blocking) of the coronary arteries. This condition can be helped, by careful regulation of habits of life and the use of blood vessel-dilating drugs. Frequently angina disappears or becomes greatly lessened as new "collateral" blood vessels develop in the heart to compensate for those impaired by disease.

Dr. White's 16-page booklet is issued by the American Heart Association and can be obtained from local heart associations.

Science News Letter, May 19, 1956

PUBLIC HEALTH

Publish What's What Of Food Additives

➤ A WHAT'S WHAT of chemicals added to processed foods has been compiled by the Food and Nutrition Board of the National Research Council. It is the most complete available tabulation of chemical additives in processed foods.

It lists some 550 chemicals, giving the level or percentage used, the kinds of foods in which each is used, and the purpose of the additive.

Of the 550, some 300 are flavoring ingredients. The rest are coloring agents, nonnutritive or noncaloric sweeteners, nutrients for food fortification such as vitamins and certain minerals, preservatives, antioxidants, emulsifiers and bleaches.

All these are what the committee calls "intentional additives."

At the hearings held by the Delaney Committee of the House in 1950, it was estimated that 704 chemicals are used in food production. This estimate, however, included "incidental additives" such as detergents, weed killers, pesticides and the like. These are not included in the Food Protection Committee's list.

Inclusion of chemicals in the list compiled by the Food Protection Committee does not imply approval or disapproval of the National Academy of Sciences-National Research Council under which it operates.

The list was compiled as part of a study of technological benefits from using the chemicals and to help determine the additives' health significance.

From the health standpoint, it is necessary to consider not only the additive itself, but the amount in a food and the quantity of such food in the daily diet.

For example, the amount of an additive in dairy products would be more significant in terms of the amount actually consumed than the amount in such things as catsup and pickles.

The U. S. Department of Agriculture reports that a household of 3.42 persons consumes 26.7 pounds of dairy products per week, compared to 1.9 pounds of catsup, chili sauce, pickles, olives, soups and prepared dishes.

Science News Letter, May 19, 1956

ENTOMOLOGY

Spotted Alfalfa Aphid Hits for Third Year

➤ SPOTTED ALFALFA APHIDS are heavily damaging alfalfa crops in many states for the third consecutive year, the U. S. Department of Agriculture reported.

Worst infestations are in Utah, Arizona, New Mexico, Texas, Oklahoma, Kansas and Missouri. For the first time, the aphid has been found east of the Mississippi, in Aluchua county, Fla., and has also spread into Louisiana and California.

The insect caused economic damage in this country in 1954 for the first time, costing alfalfa growers an estimated loss of at least $5,000,000.

In some fields as many as 1,000 spotted alfalfa aphids may be obtained from plants at one sweep of a net, compared to four per sweep in 1955.

Aphids suck the juices from alfalfa leaves, causing them to curl, yellow and drop. At the same time, they may inject a toxin that interferes with plant growth.

Science News Letter, May 19, 1956

PSYCHOLOGY

Playing With a Ball Is Reward to a Kitten

➤ KITTENS can learn a trick when their only reward is the chance to play with, or manipulate, a rubber ball or a small box, Dr. Raymond C. Miles of the University of Wisconsin told the Midwestern Psychological Association meeting in St. Louis, Mo.

Dr. Miles reported experiments with eight kittens, born and raised in the laboratory and given no chance to play with anything until it became the reward for their learning.

However, the kitten will learn better if food is the reward.

Science News Letter, May 19, 1956

IN SCIEN

ENTOMOLOGY

Record Boll Weevil Cotton Attack Seen

➤ THE BOLL WEEVIL, America's most destructive cotton insect, has more recruits for its summer offensive this year than ever before.

The weevils are not yet fully developed, so U. S. Department of Agriculture officials are not predicting exactly how many of the pests will strike southern cotton fields, but the National Cotton Council of America says the 1956 boll weevil attack on cotton may be the largest in history.

Department of Agriculture authorities say boll weevils are coming out of hibernation in greater numbers than previously recorded. With normal weather, cotton farmers can look for severe infestations.

Extremely wet weather in June and July would encourage the weevils and cause "unthinkable" losses. Only dry weather during those months would curb the insects. The weather between early May and June will have no appreciable effect.

Hardest hit by increased weevil populations are Louisiana and South Carolina. The most recent increases have been in the Brownsville, Texas, area. Virginia, which does not grow much cotton, has a lower than average infestation.

Science News Letter, May 19, 1956

HORTICULTURE

Plants Grow Faster After Long Drought

➤ SUGAR BEETS grow faster after a long period of drought than similar plants that have not been exposed to drought, even though the amount of rain ending the dry spell may be small.

This discovery, which may mark an important contribution to efficient use of irrigation water, was made by P. C. Owen and D. J. Watson of the Rothamsted Experimental Station, Harpenden, England.

They measured the dry weight and leaf area of beet plants taken from six irrigated plots and from six plots not irrigated. They also measured the assimilation rates of both sets. During a five-week period when no rain fell, the unirrigated beets showed all the symptoms of plants exposed to drought.

During the sixth and seventh weeks light rain fell, not enough to saturate the soil. Despite the inadequate soil moisture, however, the unirrigated plants grew faster than the irrigated ones.

If laboratory experiments confirm their results, more effective irrigation practices may result, the scientists suggest in *Nature* (May 5).

Science News Letter, May 19, 1956

CE FIELDS

ELECTRONICS

New Bomb Systems For U. S. Bombers

➤ AN ELECTRONIC SYSTEM permitting this nation's newest strategic bombers to find and destroy unseen enemy targets with unprecedented accuracy has been announced by the U. S. Air Force and the Sperry Gyroscope Company, Great Neck, N. Y.

It combines an automatic flight control system and an electronic bombing system, both of which are being installed in the new Boeing B-52 Stratofortress.

The flight system provides precision control during long hours of flight to distant targets, supplies automatic control by the bombardier and aids in instrument landing.

The advanced bombing system, using target data obtained either optically or by radar, automatically "feeds" steering information to the automatic flight control system as the bombardier makes the necessary commands. This, in turn, controls aircraft action required to maintain a desired course and altitude.

It also allows a bomber to take evasive action to avoid enemy aircraft and ground fire while on the bombing run, thus eliminating the straight-and-level approach method that once made strategic bombers vulnerable to this type of enemy defense.

Science News Letter, May 19, 1956

PSYCHIATRY

Homosexuals Played With Dolls, Not Baseballs

➤ MEN who became homosexuals played with dolls instead of playing baseball when they were little boys. Only 14 of 102 men studied by a group of New York psychoanalysts played baseball compared to 66 out of 100 other mentally sick patients and perhaps 100% of normal American men.

The psychiatrists, incidentally, could find no evidence that homosexuality existed in any major league ball player although such has appeared in other sports.

In addition to this tendency to stick to feminine games and pastimes as children, the homosexuals studied were sissies in other ways. Their mothers kept them close and had them wear girlish clothing and long curls as small children.

The mothers and fathers did not get along well together. Contrary to general impression, the homosexuals did not love their fathers so much that they tried to remain feminine. Actually the patients studied tended to hate their fathers who had been either hostile or detached.

These trends in the home situation and relations with the parent, the psychoanalysts believe, are significant in leading to homosexuality in men.

The doctors feel optimistic about the chances for homosexual men becoming normal in their sexuality. Of the 102 patients, 15 have recovered in the sense of becoming exclusively heterosexual. Others, the doctors feel, may also recover in this sense when they have had more treatment.

These findings were reported at the American Psychiatric Association meeting in Chicago by the research committee of the Society of Medical Psychoanalysts in New York City, Drs. Irving Bieber, Cornelia B. Wilbur, Alfred H. Rifkin, and Paul Zimmering, all of New York.

Science News Letter, May 19, 1956

ANIMAL NUTRITION

Underfed Beef Calves Retain Market Value

➤ BEEF CALVES can be kept on a reducing diet three to six months of the year and still fatten up to produce good meat, the U. S. Department of Agriculture reports.

The one important qualification is that the animals get enough protein, minerals and carotene (provitamin A) to keep them healthy.

Until now, many animal raisers have thought calves must gain at least half a pound a day throughout the year if they are to produce large amounts of beef.

Because of inadequate and poor quality forage during winter, many beef cattle in the United States stop gaining weight.

Department of Agriculture experiments on identical twin calves show that such temporary diet restrictions will not make them uneconomical beef producers, provided the forage is supplemented with the necessary nutritive elements.

One twin of each pair was kept on a restricted diet between the ages of three to six months or four to eight months. At the end of the dieting period, the underfed calves gained weight and soon caught up with their normally fed twins.

Science News Letter, May 19, 1956

PSYCHOLOGY

Monkeys Can Learn Before Two Weeks Old

➤ BABY MONKEYS can learn before they are two weeks old, Drs. W. A. Mason and H. F. Harlow of the University of Wisconsin reported to the Midwestern Psychological Association meeting in St. Louis, Mo.

The learning that the infant animals mastered was of the simple type known to psychologists as "conditioning." They learned to reach out for a flashing light when the light had previously been shown with their food.

The baby monkeys also learned more complicated tasks of discrimination and of threading their way through a maze to food. They were capable of this before they were 20 days old.

Science News Letter, May 19, 1956

GEOPHYSICS

Antarctic to Have a Permanent Population

➤ THE ANTARCTIC will never again be unpopulated, Dr. Paul A. Siple of the U. S. Army General Staff told the American Geophysical Union meeting in Washington.

He implied that scientific parties and guardian forces would make up the Continent's permanent population as a result of the forthcoming International Geophysical year (1957-1958), despite the fact that nations will fight over territorial rights "for many years to come."

At the close of the IGY, Dr. Siple predicted, most of the Antarctic's major geographic secrets will have been learned. Man will also have seen more than 2,000,000 square miles of the Antarctic "yet to be seen for the first time."

The Continent, he reported, appears to be a "Siamese-like" juncture of two great land masses. One is called East Antarctica and the other, only half as big, West Antarctica. Where these land masses come in close contact, a high-faulted mountain forms a backbone to the whole continental mass.

East Antarctica was described as a massive Precambrian (more than 510,000,000 years old) shield superimposed by a great dome of snow and ice and, toward its center, reaching in excess of 13,000 feet elevation.

West Antarctica is more folded in character and the ice dome nearer its center is probably less than 10,000 feet high.

Science News Letter, May 19, 1956

HEMATOLOGY

Coffee Plant Chemical Revives Stored Blood

➤ BLOOD ready for discarding by blood banks after three weeks of storage can be held another five weeks and "revived" for transfusion by treatment with guanosine, a chemical from the leaves and unripe berries of the coffee plant.

Experiments showing this, including the safe transfusion of six weeks' old blood that had been revived, are reported by Dr. T. A. J. Prankerd of University College Hospital Medical School, London.

Electrocardiograms showed no abnormal effects on the heart action of the patient who got a transfusion of revived old blood. His hemoglobin increased by an amount compatible with complete survival of the transfused red blood cells 24 hours later. After 48 hours, there was no sign of excessive breakdown of red cells.

Guanosine belongs to the class of chemicals called nucleosides. When it is added to old blood and the mixture incubated for an hour at body temperature, it revives the blood apparently by giving the red blood cells a chemical which they can use in their handling of glucose, or sugar.

Dr. Prankerd's experiments are reported in detail in *Lancet* (April 21).

Science News Letter, May 19, 1956