

PSYCHOLOGY

Tests Show Allergy, But Emotions Cause Reaction

► A PATIENT may have asthma and show by skin tests that he is allergic to foods or pollens and dust. Yet his asthma symptoms may be due to emotional upsets and have nothing to do with the allergic reaction in tests.

This situation, frequently confusing to patient and doctor, appeared in the case of a three-year-old boy reported by Drs. Hyman Miller and Dorothy W. Baruch of Beverly Hills, Calif., at a meeting of the American Academy of Allergy in Houston.

This little boy had repeated attacks of asthma. Skin tests showed he was allergic to numerous foods and inhalants, such as house dust or cat hair or the like. His attacks came and went, however, although he continued to be exposed to the inhalants that gave positive skin reactions. And he had attacks even when the offending foods were kept out of his diet.

Play psychotherapy with the child and psychoanalytically oriented treatment of the parents was then started. This showed that the interplay of feelings between father, mother and child was responsible for either setting off or, at times, stopping attacks of asthma in the child, regardless of when or to what degree he was being exposed to the foods or dusts to which he was allergic.

Science News Letter, February 13, 1954

TECHNOLOGY

Heavy 3-D Reels Blamed for Injuries

► THIRD-DIMENSIONAL MOVIES may be light entertainment, but the heavy reels of Natural Vision and Cinerama have been blamed with causing a rash of hernias and strain injuries among projectionists who show you the pictures.

Shortly after the new kind of entertainment came out, a nation-wide flareup in hernias among projectionists began spreading from New York as the 3-D pictures came to more and more cities.

An investigation by an executive of one of the largest theater chains led to the conclusion that the Natural Vision movie reels, weighing from 35 to 40 pounds each, were to blame. Cinerama's reels, three feet in diameter and weighing 50 to 60 pounds, also were indicted. In contrast, the standard reel of "flatty" movies weighs only about five pounds.

The projector operators must lift these heavy reels to small spindles at eye level on the projector. This strain was too much for many of the men, particularly the older ones. They were hospitalized, bed-ridden and unable to work for months.

Only the wide-screen CinemaScope ("The Robe") movies, which are viewed without glasses, were exonerated.

Robert L. Moore, a safety engineer in the Kemper insurance group, was called in to work on the problem. Within a month, he

solved it. He developed a special spring-loaded hook balanced with a counterweight for projector operators to use. Attached to the heavy reel of film, the hook permits the operator to load the film magazine without bodily strain.

To reduce the number of intermissions required, more film is wound on the Natural Vision and Cinerama reels than on standard reels. In the polarized Natural Vision, both projectors are needed at once to show the picture. Big reels permit the average-length movie to run through with only one intermission. Standard reels would necessitate several intermissions.

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SURGERY

Premature Baby Survives Operation, Sets Record

► A BABY boy born in Glendive, Mont., has set a surgical record, it appears from a report to the *Journal of the American Medical Association* (Jan. 30).

Born prematurely and while barely up to the nine months age at which most babies are born, this infant, weighing two pounds, 12 ounces, survived an operation for removal of a tumor blocking the outlet from his stomach.

He is the smallest baby to survive such an operation, his physicians and surgeons, Drs. Paul Sullivan and Harry Lawler, Billings, Mont., and Dr. Richard Chambers, Glendive, Mont., believe.

The tiny boy survived not only this operation, but also a second one that had to be done nine days later because the wound of the first began to separate and internal organs bulged through.

Although born at the Northern Pacific Hospital, Glendive, the baby was taken to St. Vincent's Hospital, Billings, for the operation. He was then 47 days old. He left this hospital aged three months in good condition and weighing five pounds, eight ounces.

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DENTISTRY

Terramycin Helps Stop Trench Mouth

► THE ANTIOTBIOTIC, Terramycin, is an effective aid in treatment of Vincent's infection, or trench mouth, Drs. Harry Shpuntoff and William Shpuntoff of Jackson Heights, N. Y., report in the *Journal of the American Dental Association* (Feb.). They used the antibiotic mixed with zinc oxide and eugenol.

The good results obtained with the mixture in this condition have led them to try it in other dental procedures, such as pulp capping and prevention of dry sockets after difficult operations for extracting teeth. Because of the difficulty of applying controls in these conditions, they state that they cannot yet evaluate the antibiotic with this use.

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IN SCIEN

MEDICINE

Hydrocortisone Salve Helps Skin Allergies

► HYDROCORTISONE, OR Compound F, close relative of anti-arthritis cortisone, is good medicine for allergic skin eruptions. Made into an ointment, it brought an "immediate" favorable response in the great majority of some 100 patients, Drs. Sidney Friedlaender and Alex S. Friedlaender of Detroit, Mich., reported at the meeting of the American Academy of Allergy in Houston.

Cortisone itself, applied to the skin in the same way, had previously failed to help the patients.

Best results were obtained in oozing blisters, scaly, lichenified and excoriated skin. The medicine was least effective in cases where the skin had not been scratched or blistered open.

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ENGINEERING

Solar Heat to Relieve Future Fuel Shortage

► MAN WILL have to depend upon energy in sunlight for fuel in the year 2114, the American Society of Heating and Ventilating Engineers meeting in Houston, Tex., was told.

Profs. R. C. Jordan and J. L. Threlkeld, both of the University of Minnesota, estimated that existing coal and oil deposits will be consumed in about 160 years.

"Since man, in the last 53 years, has consumed more than 85% of all the fossil fuels used, a new inexhaustible source of energy like the sun is necessary," they reported.

The professors suggested that solar energy can be obtained during all days on the earth's surface, including cloudy days. Solar heat-gathering systems are affected by the earth's position relative to the sun, solar constants and depletion of radiation by the atmosphere.

The two experts worked out the details for a model house in Lincoln, Nebr., where winters are relatively severe. They determined that a house designed for a heat load of 62,000 Btu per hour can be heated during variable winters by a system equipped with a 700-square-foot solar-energy collector, a four-horsepower heat pump and a heat storage "sink" using 400 cubic feet of a heat-of-fusion material.

In many localities, solar energy heat pump systems would result in lower heating costs than those of conventional fuel-fired systems. No serious architectural problems exist in providing for solar energy storage, the men reported.

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CE FIELDS

GENERAL SCIENCE

FTC Cracks Down On Battery Additive

► THE FEDERAL Trade Commission has cracked down on another battery additive, stating that advertisements claiming the chemical would end need for recharging and lengthen battery life were "false and misleading."

The battery additive contains mainly magnesium and sodium sulfates, chemical salts that have been tested for over 30 years at the National Bureau of Standards and found ineffective.

Last year a different battery additive for which similar claims were made figured prominently in the firing and subsequent reinstatement of Dr. Allen V. Astin, director of the National Bureau of Standards where tests on both battery additives were run. (See SNL, Sept. 5, 1953, p. 148.) The Bureau's work in storage battery testing was upheld by a special committee of the National Academy of Sciences which found the battery additive to be "without merit." (See SNL, Nov. 28, 1953, p. 339.)

The initial decision by the FTC is based not only on tests by the Bureau but also by the Midwest Research Institute of Kansas City, Mo., both of which failed to confirm the advertising claims for the additive, Sav-A-Battery.

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PHYSICS

Baby Atom Smasher Uses New Design

► A BABY brother to the giant particle accelerators of a few years from now is being given preliminary tests at Cornell University, Ithaca, N. Y.

It is the first atom smasher built using the new, "strong focusing" theory, and is planned to speed up electrons to energies of one and a half billion electron volts. Electrons, fundamental particles of the atom, are the smallest known units having a negative charge.

The tests are expected to answer many questions puzzling physicists, both in the U. S. and Europe, who are now designing gigantic atom smashers to hurl particles at 25 billion electron volts, or Bev in the scientists' shorthand. (See SNL, Jan. 16, p. 39.)

Within the past three weeks, Dr. Robert R. Wilson of Cornell revealed at the American Physical Society meeting in New York, bunches of particles have been kept in focus for 100 turns around the circular path. Ultimate goal is 100,000 turns before the particles are speeded up to their energy high of one and a half Bev. Dr. Wilson

hopes, however, that the first 100 turns are the most difficult, and that the machine will soon be working at peak energy.

The machine is so sensitive that it has to be shielded from the effects of the earth's weak magnetic field. It measures about 25 feet across, but the "racetrack," or path around which the particles are hurled, is only one inch high and three inches wide.

The particles are kept in focus by many small magnet sections, so arranged that they cause the beam first to focus vertically, then radially around the racetrack. Thus the small magnets act on the bunches of electrons in the particle stream much like a convex-concave mirror system acts to focus light rays.

The accelerator was originally designed as a synchrotron, and was later modified to use the strong focusing principle.

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SURGERY

High Speed Collisions May Rupture Diaphragm

► SURGEONS SHOULD be on the alert for symptoms of ruptured diaphragm in victims of auto accidents involving collisions at high speed, Dr. Joseph L. Lucido of Saint Louis University School of Medicine warned at a meeting of the trauma (injury) committee of the American College of Surgeons in St. Louis.

The diaphragm is the major muscle that separates the abdominal organs from those of the chest.

Dr. Lucido reported 15 cases of ruptured diaphragm from auto accidents, which he believes the largest number of such injuries ever reported. This, he said, "might very well mean that many such injuries have gone undiagnosed."

The victim in these accidents is most often the driver of the car.

To be sure that a ruptured diaphragm does not exist in suspicious cases, Dr. Lucido advises a chest X-ray. This would show the abdominal organs, such as stomach and even intestines, pushed up into the chest if the diaphragm has been ruptured.

Surgery to correct the ruptured diaphragm was performed on 12 of the 15 cases, nine of whom lived. Two of the three who died after surgery died of head injuries, while the other died of an embolism. Of the three who died without surgery to correct the ruptured diaphragm, one was suffering from severe tuberculosis, another died of severe head injuries before the operation could be performed, while the third died of internal injuries before reaching the operating table.

He said four of those successfully operated on also had ruptured spleens that were removed, while in three other cases it was necessary to repair torn linings of the heart.

Injuries to the abdomen have been increasing, although deaths from such injuries have been decreasing, Dr. Gene B. Starkloff of Saint Louis University School of Medicine told the committee.

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DENTISTRY

Replace First Molar With Wisdom Tooth

► MORE THAN 100 teen-agers have had a developing but unerupted wisdom tooth transplanted to replace a lost first permanent molar "with satisfactory results," Dr. Harland Apfel of San Pedro, Calif., reports in the *Journal of the American Dental Association* (Feb.).

The 100 or more tooth transplantations have been done over the last seven years.

The first permanent molar is so important that its untimely loss is often responsible for diseases of the gums, tooth decay, crippling of the dental arches and painful trouble in the joint between the jaws, Dr. Apfel points out.

These first molars are often lost during the teens, when the wisdom teeth are at the stage of development best suited for transplantation. They are encased in their sac in the jaw as a complete unit, their crowns have become mineralized and their roots have started to grow, but they have not yet established any definite artery, vein or nerve. After transplantation they will grow and function as a first molar.

Usually patients have been able to return to school on the second day after operation, Dr. Apfel reports, and there are no serious complications.

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TECHNOLOGY

Nylon Parka Replaces Mounties' Buffalo Coats

► THE HEAVY buffalo winter coats worn for many years by the Royal Canadian Mounted Police will be replaced soon by a nylon parka with zipper fasteners.

The famous scarlet-coated Mounties will discard their bulky winter garb in favor of the more effective protection of the lightweight modern cover-all.

This new nylon parka resembles those developed after much research and testing for the Canadian Army and Air Force. It is light khaki in color and protects the face and head with a zippered hood. A number of RCMP detachments are giving it field trial this winter.

Since 1873, the year when the old Royal Northwest Mounted was formed, the Mounties have fought off bitter cold and stood exposure to high windchill with aid from animal products. Early-model cowhide or horsehide overcoats were followed by the familiar, huge fur coats that took one buffalo hide for each. Animals culled each year from protected herds in national game preserves supplied the hides. A woolen cloth of close weave, or caribou skins, were used to make parkas for far northern posts.

Now, research for defense has given environmental protection that is impervious to wind, rain and cold. It has only one-third the weight, is less bulky, and gives more freedom of action than the old coat.

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