

PEDIATRICS

Child-Rearing Book Gives Advice on TV

► THE QUESTION of television for children is discussed for the first time in the new edition of "Your Child From One to Six" (see p. 252), U. S. Children's Bureau companion book to the Government's long-time best-seller, "Infant Care."

Parents have no way as yet of judging accurately just what watching TV programs does to their children, the book points out. Very few of today's parents have had the experience of seeing their fantasies come alive on the screen while they were mere babies.

Without advising against TV for young children, the Children's Bureau authorities point out that it should not take the place of active play. Play is the child's main way of growing and learning.

"Curiosity and action are the heart of play, so lively first-hand experience encourages learning," the book states.

"Children of preschool and early school age need a setting in which so many of their real interests clamor for attention that they have little time for just sitting as onlookers. Action of their own is what they want.

"Climbing, throwing, rolling, banging, splashing, running, performing feats of skill with increasing agility—these are the things natural for young children to do. They want, if they have a chance, to do them a good share of the time."

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TISSUE CULTURE

Cancer Chemical Affects Embryo Nerves as Venom

► A CHEMICAL from animal cancers and one from rattlesnake and other snake venoms have the same growth-stimulating effect on nerves of chick embryos. The only difference is that the snake venoms are about 1,000 times more active than the chemical from the animal cancers.

These findings were reported by Dr. Rita Levi-Montalcini of Washington University, St. Louis, at the Decennial Review Conference on Tissue Culture in Woodstock, Vt.

Dr. Levi-Montalcini said the findings give "a promising lead" to solution of one of the most basic problems of how embryonic cells take on their form and character, becoming nerve cells or skin cells or some other kind of cell.

The animal cancer chemical and the snake venom chemical each seems to be a protein or a particle bound to protein. It is possible that both these nerve growth stimulators act through the same enzyme chemical.

The chemical from the animal cancers (mouse sarcomas 180 and 37) stimulate growth of the nerves in chick embryos and make the nerve fibers grow bigger and make the neurons, or nerve cells, differentiate into different kinds of nerve cells faster.

Organs of the developing embryos not only got their full supply of nerves at a much earlier age than normal, but were "literally flooded" with nerves as a result of stimulation by the cancer chemical.

Nerves of the sympathetic system were found not only in the organs but also inside veins, where they gave rise to large nerve tumors that bulged into the blood stream and partly obliterated the circulation.

The snake venom chemical had the same effect.

Some perplexing features of the processes were found in further studies. These were the possibility of "speeding" some normal events in cell differentiation and of channeling nerve fibers into abnormal and devious routes.

Questions to be answered, Dr. Levi-Montalcini said, are how to visualize the way these stimulating chemicals act on the process by which nerve cells differentiate, and what mechanisms are set in motion in the same cells.

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PATHOLOGY

Need Medical Eye At Crime Scene

► NEEDED at the scene of the crime is a "skilled medical eye," declared Dr. Alan Moritz of Western Reserve University, Cleveland, at the meeting of the American Society of Clinical Pathologists in Chicago.

"In cases of many deaths by unexplained violence," he said, "the full significance of autopsy findings may depend on evidence that can be obtained only at the scene and before the body has been moved."

This evidence may be apparent only to a trained pathologist, he pointed out.

Pathologists, accustomed to the precise examination of organs and tissues in autopsy on dead bodies, should not overlook the obvious external clues to cause of death manifest in the position of the body, condition of clothing and other telltale signs, he advised.

They should not leave these up to the police, since frequently only the skilled medical eye can make accurate deductions from such clues.

The practiced medical eye can detect useful information even in the most mutilated, putrified or burned body, stated Dr. Moritz. It is a mistake ever to advise that an autopsy is not worthwhile. Many insurance claims have revolved around identification of charred remains. Usually some clue is available that will help make final determination.

Putting the finger on the party who caused death is as important as diagnosing its precise cause, he said.

He pointed out in this connection that the fact that a man died in a tavern brawl from lacerated liver and internal hemorrhage is insufficient when lawyers are fighting over how the liver was lacerated—whether by a blow delivered by another or falling against a table.

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IN SCIENCE

MEDICINE

Anti-Cancer Drugs Halt Spread After Surgery

► SPREAD OF CANCER after operation to remove it may be checked by treatment on the day of operation and for three days after with anti-cancer nitrogen mustard, Drs. Ernesto P. Cruz, Gerald O. McDonald and Warren H. Cole of the University of Illinois College of Medicine, Chicago, reported to the American College of Surgeons meeting in San Francisco.

Finding that this drug, used in treating Hodgkin's disease, stopped the spread of cancer injected into the liver vein of rats, the Chicago surgeons are now using it for patients operated on for cancer of the breast, colon, rectum, stomach and other sites from which spread of the cancer by veins and lymph channels is "notorious."

Injections of radioactive phosphorus 32 followed by insertion of tiny Geiger counters into the stomach, esophagus and rectum may help diagnose cancer of the stomach and intestinal tract, Drs. Donald B. Shahon, J. Bradley Aust and Harlan Root of the University of Minnesota Medical School, Minneapolis, reported.

The cancers take up the radioactive phosphorus at a greater rate than adjacent normal tissue, thus telling the surgeon where the suspected cancer is located.

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CARDIOLOGY

Stick Six-Inch Needle Into Heart for Test

► A SIX-INCH NEEDLE is stuck directly into the heart chambers as part of an X-ray examination reported by Dr. J. Stauffer Lehman of Philadelphia at the American Roentgen Ray Society meeting in Los Angeles.

The patient is conscious during the procedure. He is cautioned against taking a deep breath while the needle is being inserted. Then, during the two seconds while an opaque fluid is run through the needle, he is told to stop breathing.

As soon as the injection is completed the needle is immediately pulled out.

Just before the fluid is injected, a series of rapid X-ray pictures of the heart chambers is started. Their outline is shown by the opaque material injected into them.

From the pictures doctors can tell whether blood is flowing through the heart's mitral valve and to what degree. If the valve is diseased and permits backflow of blood, the doctors can also get from the X-ray pictures important information for planning an operation to correct the condition.

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CE FIELDS

SURGERY

Link Hip Fractures With Blood Group, Heredity

► THE PERSON belonging to blood group A is more often victim of a broken hip bone than persons of other blood groups, a study of all patients with broken hip bones at the University of Iowa hospitals during the last 15 years showed.

The study, which included several hundred patients over age 60, was reported by Drs. Joseph A. Buckwalter and Robert T. Tidrick of Iowa City, Iowa, at the meeting of the American College of Surgeons in San Francisco.

Persons with blood group O were less likely to have broken hips. A possible role for heredity in the cause of broken hips was suggested.

Paralyzing the heart by a nerve chemical, acetylcholine, gives the surgeon a chance to operate on the heart without interference by its motion. The heart beat is started again by running blood through the heart arteries to wash out the paralyzing chemical.

The technique succeeded in six of eight children undergoing heart repair surgery, Drs. Charles K. Sergeant, Thomas Geoghegan and Conrad R. Lam of Henry Ford Hospital, Detroit, reported.

Discovery that if a small piece of bladder tissue is left in the body, the bladder will regenerate to a functioning organ, was announced by Drs. M. K. Than, J. Brunson and C. D. Creevy of Minneapolis.

The finding, made in experimental animals, suggests that it may no longer be necessary to remove the entire bladder when part of it is diseased.

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DENTISTRY

Finds Ultrasonic Dental Drill Injures Some Teeth

► AN ULTRASONIC DEVICE for drilling teeth with less pain, heat and vibration produced severe damage to the growing teeth of guinea pigs as compared to the rotary drill, Capt. Arne G. Nielsen of the U. S. Naval Dental School, Bethesda, Md., reported at the American Dental Association meeting in Atlantic City.

He said it was significant that the injuries did not begin to appear until 30 days after the teeth had been treated.

The injuries to the teeth included enamel defects, discoloration, fractures, looseness and subsequent loss.

Only 12% of the teeth treated by the ultrasonic instrument could be considered normal at the end of the observation period of 58 to 85 days, Capt. Nielsen reported.

In teeth of guinea pigs treated by the

rotary method, changes were limited to minor enamel defects in only four percent of the teeth.

"The results of this study," Capt. Nielsen stated, "suggest the possibility of trauma (injury) to the formative elements of the teeth and supporting structures. The attempt to determine the complete safety of the ultrasonics process in continued studies appears justified."

An ultrasonic dental device said to be in routine use in from one to two thousand dental offices throughout the United States is being shown commercially for the first time in an exhibit at the dental meeting.

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BIOCHEMISTRY

Mother's Milk Good Because of Enzymes

► THE REASON BABIES thrive so well on mother's milk is that human milk contains protein-digesting enzymes, or ferments, it appears from studies reported at a meeting in Carbondale, Ill., of the Illinois State Medical Society's committee on nutrition.

The studies were made by A. B. Storrs and M. E. Hull at the research division of Armour and Co. in Chicago.

Human milk, they found, has four to five times the enzyme activity of cow's milk.

The protein-digesting enzymes can be added to cow's milk through a process developed by Armour and Co. to reduce curd tension. It was thought by many specialists that this mechanical change improved the digestibility of cow's milk for human babies. The good results with this enzyme-treated milk, however, suggested that something more than low curd tension might be responsible.

The Armour scientists investigated the matter. They knew the low curd tension was achieved by adding animal pancreas enzymes to cow's milk. Then they found that enough of the enzyme activity remained in the treated cow's milk after pasteurization to be responsible for its improved quality.

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ENTOMOLOGY

Advances Made by Gypsy Moth Pest

► THE GYPSY MOTH, destructive forest pest, has spread its attack, as shown by an expensive trapping survey for male moths by the U. S. Department of Agriculture. The insect has become established at several points in Sussex County, N. J., and in Pike and Wayne counties, Pa., which are south and west of the present Federal quarantine line.

Long-range plans, made months ago, call for two to four times as much insecticidal spraying in 1957 as in 1956, in which up to 19 airplanes were used simultaneously in Pennsylvania, New York and New Jersey.

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HEMATOLOGY

Destroy Clots in Heart Artery by Blood Enzyme

► LIFE-THREATENING CLOTS in the pulmonary artery of the heart can be destroyed by plasmin, an enzyme from blood plasma, Drs. Michael Hume, William W. L. Glenn, Paul J. Rosenbaum and Paul H. Guilfoil of Yale University, New Haven, Conn., reported at the American College of Surgeons meeting in San Francisco.

The results were obtained with animals. A blood clot containing red blood cells tagged with radioactive chromium was introduced into a vein and then traveled to the heart and pulmonary artery.

Plasmin was then given. Its effect in breaking down the artery-plugging clot was detected by measuring the radioactivity of the clot from time to time.

The value of a nerve-cutting operation done to relieve high blood pressure from artery hardening was questioned at the meeting by Drs. Thomas O. Murphy, John J. Haglin and Davitt A. Felder of the University of Minnesota Medical School, Minneapolis, and St. Joseph's Hospital, St. Paul.

If the patient has the serious artery condition called atherosclerosis, associated with excess fat in the blood, or other signs of a disturbed utilization of fat in the diet, the operation may have a bad effect on the artery condition.

This is suggested by studies on rabbits, although the scientists point out it is difficult to correlate the findings with human artery trouble.

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ENTOMOLOGY

Soil Types Affect Mite Infestations

► SOIL DIFFERENCES can cause ten times as many red spider mites to attack one citrus tree as another.

This discovery by a University of California scientist may lead to effective control of one of citrus growers' worst pests. Red spider mites develop resistance to chemical dusts and sprays.

In doing the research, Dr. Charles A. Fleschner grew trees in soils taken from two different southern California orchards, one near the city of Oxnard and the other near Fillmore.

The trees were all developed from the same parent tree and were raised in a greenhouse where temperature, humidity and sunlight were controlled. Irrigation water was taken from wells in each orchard.

Trees in the Oxnard soil had up to ten times more red spider mites than those growing in Fillmore soil.

Dr. Fleschner is now trying to find out what properties of soil cause this difference. He believes the information will help scientists and orchard growers create a favorable balance between citrus mites and their natural enemies.

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