

## INVENTION

## Christmas-Use Devices

► WITH CHRISTMAS and the winter season both approaching, several patents issued by the Government recently are particularly appropriate.

To hold Mother's Christmas parcels as well as her money and other necessary items is a combination shopping bag and purse, roomy enough to serve as an overnight bag. Elizabeth Alleah Ingram of Cincinnati, Ohio, received patent No. 2,771,112 for this carry-all with a secret compartment.

To help Dad clean off winter's snow, Joseph H. Jacobs of Minneapolis, Minn., has designed for sidewalk and driveway use a rotary snow plow that throws the snow with a shoveling action rather than blowing it. He claims the machine will remove crusted as well as extremely wet snow without clogging, and is easy to operate and maneuver. Mr. Jacobs was awarded patent No. 2,770,893, and assigned rights to the Jacobs Wind Electric Company, also of Minneapolis.

For Junior is the "inexpensive, yet useful and novel toy" made by adding wheels, axles, head, neck and tail to used tin cans after puncturing suitable openings. George L. Hicks of Prairie Village, Kans., claims his invention will provide manufacturers with an added inducement for people to purchase their merchandise, since the auxiliary parts needed to make the toy can be packaged to accompany the canned goods.

For the idea and method of linking several such toys together, Mr. Hicks was granted patent No. 2,770,915, half rights to which he assigned to Roy E. Weinzettel, Overland Park, Kans.

Teen-age girls who use nail polish may want to try the finger nail paint guard devised by Miriam J. Sawyer of Los Angeles, Calif., which was awarded patent No. 2,771,082. It consists of a circular disk made of a flexible material and having various-sized recesses along the rim. The disk is separated from the base by a compressible material. Downward pressure of the fingernail when a finger is placed in the recessed space causes the disk to bend upward, thus pulling the flesh away from the edge of the nails to prevent any smearing of nail polish.

A Christmas tree stand that can be "quickly erected to supporting position by the very unskilled without use of tools other than the hands" has been devised by Carl W. Thom of Seattle, Wash. Most stands, he says, are either expensive or have too many parts for an amateur. Mr. Thom's stand is initially pressed out and cut as a blank from a single sheet of material, thus can be mass produced by conventional means. All parts required to support a Christmas tree firmly are provided by the single unit, for which Mr. Thom received patent No. 2,771,260.

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*DIET FOR BATS—One of the vampire bats in a Cornell University research project gets part of his daily blood ration. Prof. William A. Wimsatt, left, and graduate assistant Frank C. Kallen, are trying to learn how bats can live on nothing but blood.*

## ZOOLOGY

### Lizard Eye Pigments Clue to Evolution

► HOW GECKOS, a group of lizards, evolved from day-loving to night-loving creatures can be told through changes in the visual pigments of their eyes.

Dr. Frederick Crescitelli, zoologist at the University of California at Los Angeles, reports in the *Journal of General Physiology* that the primary pigment of visual chemistry in the nocturnal geckos is considerably different from that of other terrestrial animals, including rattlesnakes and alligators.

While well adapted to night vision, the geckos' visual chemistry is still partly suggestive of a creature of daytime activity.

From this pattern the following picture of evolution in the gecko is suggested. Eons ago, either for reasons of climatic changes or to escape predators that were thinning its ranks, the gecko, then active only by day, changed over to the "night shift."

In the course of evolution, visual chemistry adapted to daylight was transmuted to that required by night vision in association with the development of the secretive, nocturnal habit. Such a theory for the visual cells had been proposed by Dr. Gordon L. Walls, professor of optometry at the University of California, Berkeley, and this experimental evidence seems to support the theory from the chemical point of view.

The nature of visual pigments in geckos suggests the evolutionary process may still be going on.

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## MEDICINE

## Mental Illness Process

► THE MECHANISM of sudden death by anaphylactic shock, which sometimes hits allergy patients, and the process governing mental illness may be linked.

Evidence for this possibility comes from studies by Dr. Mary Alexander Fink of the University of Colorado Medical School. The findings were announced by the American Cancer Society, which supports Dr. Fink's research.

A body chemical called serotonin is 1,000 times more powerful than histamine in inducing the violent muscle contractions of anaphylactic shock in the mouse, Dr. Fink found.

Anaphylactic shock strikes when a person who has developed special sensitivity like an allergy to a substance, such as egg white or horse serum, gets another dose of the same substance. The shock can be fatal.

Serotonin is found in the brain, intestines and blood platelets. It stimulates voluntary muscle, including the muscles of artery walls, and may raise blood pressure and body temperature.

Some scientists believe serotonin acts as a switch connecting nerve pathways for the passage of stimuli to and from the brain. Some tranquilizing drugs have been reported to release serotonin from storage

depots to flood the system. Scientists have also reported that a drug bringing on symptoms of temporary insanity, LSD, short for lysergic acid diethylamide, blocks serotonin.

Dr. Fink has shown that a tiny trace of serotonin will produce shock reactions in mouse smooth muscle suspended in laboratory dishes, and that it takes 1,000 times as much histamine to produce a similar reaction.

She showed further that the reaction is completely abolished by adding to the tissue either the madness-inducing drug, LSD, or the tranquilizer, reserpine.

Implications of Dr. Fink's findings are given by the American Cancer Society as follows:

"They show that serotonin is probably the key substance in anaphylactic shock in the mouse. They confirm others' findings that reserpine and LSD act through serotonin. And they open the door to speculation as to the existence of a biological and chemical link between allergy and chronic mental disease."

Dr. Fink's findings are a by-product of her development of techniques for testing for the presence of anti-cancer antibodies in mice tissues.

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