

Blank books with crayons are better than the usual type of drawing book which has pictures to be copied or outline drawings to be filled in by the child. Children like to make up their own designs or to choose themselves the subjects to paint or model.

Modeling clay will bring much happiness to small patients. Another favorite and approved plaything at Children's Memorial Hospital is a bean bag game consisting of a cat's head on cardboard, with cut-out mouth forming a hole to throw the bean bags through. Very small patients amuse themselves by just putting the bags through the mouth, without using any throwing motion. Larger ones throw the bags, and the exercise incidentally may be made part of the muscle treatment in certain cases. The bean bags should be small, fairly light weight, and of course made of washable, durable material.

Playthings must be selected with regard to the young patient's particular ailment or state of progress on the road to health. Balls cannot be given to heart disease patients because the throwing

motion is forbidden to these children.

Heavy pull toys, wagons, tricycles and the like, are entirely unsuitable for bed patients and even for some convalescents. For children recovering from broken bones or joint operations—what the doctors call orthopedic cases—these toys may, on the other hand, be helpful in that stage of the treatment where muscles are to be strengthened and muscular control regained.

Another bit of advice: if you are giving toys to hospital children on any extensive scale—taking enough for a number of children rather than for the one small patient you may be interested in individually—get in touch with the director of the hospital before you make your selections. Some institutions might not welcome modeling clay, for example. Other institutions, such as an eye and ear hospital or an orthopedic hospital, would be delighted with heavy pull toys.

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PSYCHOLOGY-PHYSIOLOGY

## Cats Have Two Kinds of Sight; Brain Cortex Needed for One

**C**ATS have two kinds of sight. When they use their eyes to make a "forced landing" on all four feet as an obstacle is shoved at them, that is one kind of vision. They have to use their brains for that—the special part of the brain cortex known as the visual area.

They have another kind of sight when a menacing paw makes a pass for their eyes. The quick natural blink that follows when bright light on the eye is interrupted by a threatening shadow does not depend upon the brain cortex. This almost instantaneous signal from sense organ to muscle may be short-circuited through a more primitive part of the nervous system.

That these two kinds of seeing are entirely different and are controlled by

different parts of the nervous system, Dr. Karl U. Smith, of Brown University, Providence, R. I., told members of the New York Branch, American Psychological Association.

This intricate division of labor in the nervous system was revealed by experiments on cats that had lost the parts of the brain cortex which control vision. Although nothing was wrong with the eyes of these cats, they might be considered blind as judged by ordinary standards. They could not find their way to food. They could not climb stairs, or jump from a table.

But these "blind" cats would still blink at a threatening movement near their eyes, provided, however, that the cats were in a bright light. The opening of the pupil of the eye is made still smaller when the cats are brought from dim light into a bright glare, just as it is in normal animals. They still make compensating movements of their eyeballs when they see objects revolving around them.

But these "blind" animals could no longer place their legs to jump or land on an approaching surface.

Apparently there is a critical division of labor between the nervous mechanisms controlling the eye movements alone and those controlling the body and legs in response to objects seen, Dr. Smith concluded. In the normal cat, these mechanisms work together in perfect harmony and cooperation. But cats lacking entirely the visual cortex of the brain keep a rudimentary capacity to avoid objects and threatening gestures.

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ASTRONOMY

## Solar System Unstable After Great Lapses of Time

**T**HE solar system, idealized, was looked upon with the eyes of a mathematician, Prof. George D. Birkhoff of Harvard, who told members of the National Academy of Sciences that "ultimate instability is highly probable." He reassured his listeners, however, with the statement that "this instability would only arise after enormous lapses of time."

Applied to the solar system in which we live, this would mean that even if the sun does not hit another star or burn itself out, it and its family of planets will probably fly asunder in the remote future.

Prof. Birkhoff is not concerned with the real solar system, however, but with the problem of "the general formally stable motion of a dynamic system" which he concludes in the general case must be that of actual instability.

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MEDICINE

## Pioneer in Lung Surgery Wins Trudeau Medal

**F**OR introducing the life-saving chest operation, thoracoplasty, into America, Dr. Edward A. Archibald of McGill University, Montreal, was awarded the Trudeau Medal of the National Tuberculosis Association.

The operation which Dr. Archibald introduced is the most drastic of the procedures used to treat tuberculosis by "lung collapse therapy." The operation consists of removing all or nearly all the ribs on one side as close to the spinal column as possible. The result is that the chest muscles of the side and back, formerly held in place by the arch of the ribs, contract and compress the afflicted lung so that the patient cannot breathe with it. This places the lung at complete rest and closes up the tuberculous cavities, thus speeding the cure.

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## 23 LANGUAGES

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