

PSYCHOLOGY

Little Boys Cry Just As Much as Little Girls

LITTLE boys cry just as much as little girls.

So Dr. Catherine W. Brackett of the Child Development Institute, New York, has learned by timing the crying of pre-school youngsters.

Between the ages of 18 months and four years, the average child spends 2.5 per cent. of his days—or nights—crying. That makes an average crying time of 36 minutes a day.

Small children spend much more of their time laughing. They laugh, on the average, 6.7 per cent. of the time.

A laughing baby is fortunate, for Dr. Brackett says he will become a social child and will get along well with others.

Children cry more when the temperature is low, the study of crying has revealed.

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PHYSIOLOGY

X-Rays Show Stomachs "Froze With Fright"

X-RAY studies showing stomachs of freshmen that "froze with fright" are reported by Dr. T. Wingate Todd, professor of anatomy at Western Reserve University School of Medicine.

The freshmen in this case were medical students confronted with learning anatomy, admittedly the hardest and most discouraging course in medical school.

When he began this work in September, 1924, he said he was surprised by the large size and inactivity of the organs seen by means of the X-ray. By February, 1925, he found that the same stomachs which had been "so large and sulky," a half year before were now smaller and much more active though given the same amount of food. And by September they were still smaller and more active.

But in this second September, Dr. Todd also X-rayed stomachs of the entering freshmen and found them large and languid as had been those of new students of previous years.

So he concluded that stomachs of freshmen confronted by learning anatomy "froze with fright."

Further study devised an ingenious method of estimating the volume of the stomach from measurement of its X-ray shadow. This also revealed that a

stomach which had been fed 12 ounces of milk might secrete gastric juice to make the organ actually contain 20 or 30 ounces of fluid.

At this point, Dr. Todd turned his attention to the outlet from the stomach to the duodenum, where a thick, muscular belt surrounds the orifice or pylorus. He found that in unquiet stomachs this orifice remains closed for a long time after food is swallowed, but in students well accustomed to the investigation, it permitted passage of the contents within two minutes.

Here was the explanation of large, inactive stomachs.

Dr. Todd further found his conclusions checked by the fact that today freshmen who have become accustomed to the X-ray study have more active stomachs than those he studied in 1924 who had not been prepared for the study. But that 1935 stomachs, on the day of a final examination, or under conditions of mental stress, once more relapse into the behavior patterns of 1924.

Similarly, Dr. Todd's study revealed that this condition is apt to follow eating foods to which a person is sensitive and that closing of the pylorus may act as a trigger mechanism which releases all sorts of ill-feelings, drowsiness, and general misery.

Dr. Todd's study has unusual value in that it is the first of its kind ever made with normal, healthy stomachs, practically all previous stomachs observed through the X-ray having been those of patients in hospitals, or at least being known as not behaving normally. His 800 young medical students were probably as healthy a lot of young people as could be found.

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INVENTION

New German Dictating Phonograph Uses Disks

A DICTATING phonograph, for business and other purposes, has been patented in Germany that uses disk records instead of the familiar wax cylinders. The disks are cheaper than the cylinders, and much lighter and less breakable. They are made of a gelatin compound. (*Die Umschau*, Feb. 9).

If desired, a disk can be used as the letter itself, instead of being transcribed by a typist. Large envelopes and backing sheets of stiff cardboard are provided, and the flat shape makes mailing easy.

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IN SCIENCE

ZOOLOGY

Rare Mountain Zebra Is Near Extinction

ONLY fifty or sixty of South Africa's rarest animal, the mountain zebra, are left alive, and no funds are available for the further protection of the two small herds, Dr. E. L. Gill, director of the Cape Town Natural History Museum, has announced.

A strict law for the protection of this animal was passed some time ago, but has never been really enforced, so that hunters have done their worst. There were 2,000 animals a few years ago, only fifty or sixty now, and this small fragment is apparently doomed.

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INVENTION

"Electric Memory" Turns On Driving, Parking Lights

DANGER of driving without lights at night is claimed to be reduced to a minimum by the "fool-proof" automatic control system for automobile lights recently patented by George Paulson, of Erie, Pa.

Turn on the ignition switch and on go the headlights. And as long as the car is operating at night it is impossible to cut the lights in the usual way.

Then there are also these features in the invention: In a city where parking lights are required, it is not necessary to remember to turn them on when it gets dark or snap them off when dawn breaks. The patented control system "remembers" to do all this for car owner.

All that is necessary is to set two clock-like hands on a time dial—one at the time the lights are to go on, the other when they are to be turned off. For example, if the lights are to go on at seven you set one hand at 7:00 p. m. If the parking lights are to go off at 6:00 you set the other hand at 6:00 a. m.

An eight-day clock mounted on the dash operates various mechanisms to open and close a switch in accordance with the setting of the hands. The control clock is automatically wound.

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E FIELDS

PHYSICS

Supersonic Waves Used In Testing Steel Samples

SOUND waves, vibrating so rapidly that they are far above the range of human hearing, are now being used in a method for testing samples of steel and other metals for flaws.

They belong to the class of vibrations known as supersonics, and are produced from electrically excited quartz crystals. Their rates of vibration can run into scores of thousands, or even hundreds of thousands, of cycles per second. Human hearing stops at about 20,000 cycles per second.

In testing metals, the sample is ground flat on both ends. One end is set against a supersonic crystal, the other against a tiny dish of oil. The vibrations are transmitted through the metal to the oil, and throw its surface into a network of minute waves.

A beam of light is projected through the oil. Striking the minute waves, it is broken up into a rainbow pattern, which can be observed on a white screen laid beneath the dish. If the metal sample is uniform in structure throughout, the pattern is steady and even, but if there is a flaw present the pattern is thrown into disorder.

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SEISMOLOGY-ENGINEERING

Quake-Resisting Strength For Buildings Shown

COULD the building where you work, or the house or tall apartment you live in, stand being banged on one side with a hammer one-tenth as heavy as itself? And the blow repeated on the other side a moment later?

That is how stout the structure has to be, to give it a reasonable chance to stand up against an earthquake, Capt. N. H. Heck of the U. S. Coast and Geodetic Survey indicated. This factor for quake-safety of a building—resistance to a horizontal pressure equal to a tenth of its weight—was first set up by Japanese architectural engineers, and is now used in the United States, Mexico, Italy and Greece.

"This works out excellently for some types of buildings," said Capt. Heck. "It was successful in many cases in the Japanese earthquake of 1923, though in Tokyo some of the buildings were subjected to much greater acceleration than this method takes into account."

Even at that, however, the method is more or less empirical, Capt. Heck suggested. Instruments for obtaining really exact engineering data on the thrust and rack of the earthquake shock did not exist when it was adopted, and have only recently come into use.

The most useful instrument of this type, he indicated, is the one known as the accelerometer, of which several patterns have been invented. Unlike the ordinary seismograph, which runs continuously, the accelerometer does not start recording until the earth begins to shake. The first jolt of the earthquake is the signal for it to start reeling off the recording paper on which its zigzagging pen can write the story of the earth-shaking events. It is thus possible to set up an accelerometer and go away and leave it for months or years, visiting it only after an earthquake of proper magnitude has occurred in its vicinity.

With instruments of this type, it will be possible to gather more exact information, for the building of structures better able to resist the thrust and twist of quakes when they come.

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RADIO

Field Tests On Television Promised Within 8 Weeks

FIELD tests of television will begin in the New York area within eight weeks, states the annual report to the stockholders of the Radio Corporation of America.

The field test, emphasizes David Sar-noff, president of RCA, does not mean that regular television service is at hand. Transmission from studios atop the Empire State building will be pioneering tests to estimate and define the possibilities of the system under actual working conditions rather than the refined and controlled laboratory conditions of the past.

Problems to be solved during the tests will include: determination of how far transmission can be achieved; with what consistency and regularity can pictures by television be transmitted in the present stage of development of the art; and the possibilities of the television camera for indoor and outdoor pick-up.

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GEOLOGY

Caves in Canadian Mountain Have Impressive Forms

See Front Cover

CAVES in the limestone strata of the Canadian Rockies just across the boundary from our own Glacier National Park, have an architecture all their own, different from the stalactite-pillared development familiar in most limestone caverns. While dripstone is not absent, it is not as abundant as it is elsewhere, and the rugged form of the rock itself is more in evidence, as shown here in the cave popularly known as the Dining Hall. Many geologists believe that earthquakes as well as underground running water had their share in the shaping of these caverns.

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MEDICINE

Appendicitis Attacks Men Much Oftener Than Women

A YOUNG man is twice as likely to have appendicitis as is his sister or wife.

This disease that fills the surgical wards of our hospitals is more prevalent among adolescents and young adults than among others, and much more frequent among men and boys than among women and girls. This is one of the conclusions to be drawn from a report of three Cincinnati physicians, Drs. Mont. R. Reid, D. Henry Poer and Paul Merrell, who have recently studied the records of about 3,000 cases of appendicitis admitted to Cincinnati General Hospital. Details of their study appear in *The Journal of the American Medical Association*. (Feb. 29)

It does not pay to trifle with the disease or to delay surgical treatment. These physicians say that the appendicitis death rate is going to remain high as long as persons are not operated on earlier. When there is delay, complications are more frequent and the hospital stay must be longer.

The average time that elapsed in the 2,921 cases studied was 3.8 days between the first symptoms and admission to the hospital—much too long for proper surgical treatment, the doctors state.

It does not pay to wait for a second acute attack, their figures make clear. Of the cases they studied, 60 per cent. were admitted during the first attack, and in about 40 per cent. of all cases admitted the appendix had ruptured.

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