

PSYCHOLOGY

Infants Need Companions

HUMAN INFANTS need more for survival than a succession of warm bottles and regular diapering. The need for companionship is inborn and is even more important than the need for food and warmth, Dr. Hilda S. Rollman-Branch of the University of California at Los Angeles School of Medicine and Westwood Hospital, Beverly Hills, told her colleagues at the meeting of the American Psychoanalytic Association in New York.

What she said is in conflict with what has been generally accepted in psychoanalysis. It has been taught that a baby's nursing from breast or bottle establishes its first relation to another human being and this satisfying and pleasurable experience is a forerunner of the later capacity for love and friendship.

The new emphasis on the importance of infant companionship is supported, Dr. Rollman-Branch indicated, by recent experiments with animals of several species. The companionship need may be satisfied even by inanimate, artificial mothers, the experiments show.

A duckling 13 to 16 hours old will run around and around an experimental runway in close pursuit of a mechanically-operated wooden object. If it loses contact with this object, the duckling will "peep a desperate lost call" until they are brought together again. It continues to follow this first "object of attachment" as if it were its mother and prefers its company to any other.

On the other hand, if the duckling is

isolated for the first three to four days after birth, instead of following, it runs as if in terror from every object, including its own mother.

Although well-fed and kept warm, other experiments have showed, a baby monkey sickens and may die if it is raised by itself in a bare cage. It grows normally if it has the company of even a cone-shaped metal object to which it can cling. If given the choice between two "mothers" constructed of wire, one covered with terry-cloth, the other of bare wire, the baby monkey prefers the softer one even if it has been "nursed" only by the bare wire one.

A high death rate among human infants in foundling homes was at first attributed to malnutrition or infection. But it was found that these babies suffered from a hunger for human companionship. As long as they remained isolated except for brief attention when they were fed or diapered, the most hygienic and nutritious regime was of no avail.

Some mental patients, Dr. Rollman-Branch pointed out, are as eager to form intense attachments as the 13-hour-old duckling. Others avoid closeness, seemingly terrified of any but the most superficial interpersonal relations. Case histories suggest that these two types of patients both received adequate physical care in infancy, but their mothers were as different as the monkey "mother" of cloth was different from the bare wire "mother."

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high circular orbit for this satellite.

ARPA also will attempt to put three 260-pound Transit navigation satellites into orbits in an experimental program aimed at developing the full potential of satellites for precise navigation on earth.

The Air Force is understood to be readying four to six shots in its Midas series. These will be polar-orbiting satellites aimed at providing early warning against missiles fired at the U. S. The satellites may be equipped with infrared detector devices.

The Air Force also is expected to fire about a dozen Discoverer shots in its continuing effort to develop recovery systems for ejected satellites and manned space capsules.

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PHYSIOLOGY

Noise Causes Breakdown Of Defense System

NOISE can really upset a guinea pig.

Subjected to high intensity noise for a long period of time, laboratory rodents suffer breakdown of their normal endocrine defense system, a team of researchers at the Pennsylvania State University reports.

The scientists found evidence of disease in the adrenals and other organs following weekly exposure of 20 to 40 hours of high intensity noise for two to nine weeks. However, response to relatively low frequencies was very different.

The animals huddled together, Drs. Adam Anthony, Eugene Ackerman and James A. Lloyd report in the *Journal of the Acoustical Society of American* (Nov.). Rats and mice freeze into a rigid, motionless stance; increased washing and grooming was also observed in the rats and mice. The fact that guinea pigs did not resume their normal activities as quickly as the other animals indicates they are more sensitive to noise than either rats or mice.

"Intricate automatic endocrine mechanisms which constitute the defense reservoir of the animal are being mobilized" when noise reaches the stress level. In these studies, the scientists conclude, it is apparent that there is increased activity of the adrenal cortex following intense low-frequency noise.

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METALLURGY

Stronger Steel Developed For Navy Missiles

A STRUCTURAL steel that is seven percent stronger for its weight has been developed for use in airplanes and missiles.

Shown at the U. S. Navy's Aerial Weapons Meet, Yuma, Ariz., the steel will enable designers to cut the weight of certain plane and missile parts seven percent at no sacrifice of strength.

"Strux," developed by U. S. Steel Corporation metallurgists, can be heat treated to develop tensile strengths up to 300,000 pounds per square inch. A user reported it posed no manufacturing problems.

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ASTRONAUTICS

Cite 1960 Space Goals

ONE OF America's seven astronauts will get his first trip into space in 1960.

This will be one of about 25 space shots the United States has scheduled for the coming year.

The brief jaunt will forerun a later attempt, perhaps in 1961, to launch a man into a low orbit for several passes around the earth.

The brief flight next year will be part of the ballistics flight training program being planned for the astronauts by the National Aeronautics and Space Administration. Other major NASA plans for 1960 include space probes to the moon about mid-year, to Mars around October and to the sun late in the year.

The purpose of the space probe to Mars will be to study its atmosphere for hints as to whether life exists on the planet. The Mars shot also is expected to carry instruments for measuring gravitational and magnetic fields of the planet, as well as nearby radiation.

A space probe to Venus is nearing readiness ahead of first estimates. It is expected that the civilian space agency will attempt early in December, 1960, to send a probe

out to intersect the orbit of Venus. No attempt will be made to impact Venus as the planet is not in a favorable position.

Among more than a dozen satellite and space probe shots scheduled for 1960 by NASA will be experiments aimed at gathering scientific data about high-energy space particles, atmospheres, the earth's ionosphere, and gravity and magnetic fields around the earth, moon and in space. A 100-foot balloon satellite, an experiment in communications, also is to be launched. It should be visible as a "bright star" as far north as Seattle.

NASA also hopes to complete in 1960 its world-wide tracking network for the man-in-space program, and to fly the new four-stage, solid-propellant Scout rocket, the so-called "poor man's rocket" costing \$350,000 a copy and capable of orbiting 200 pounds.

For 1960, the Advanced Research Projects Agency has booked launching of a Courier-type satellite. It will be similar to but more complex than the Project Score satellite that broadcast President Eisenhower's 1958 Christmas message. ARPA scientists will strive to achieve a 500-mile-