

Infants See Shape Early

The belief that infants' eyes are too immature to see patterns has been overturned

► THE MOTHER who insists her newborn baby can see shape and form, despite all she has been told to the contrary, now has the backing of two studies on infant development.

From birth, babies consistently choose to look at patterns rather than at blank squares or colors, which means they can see them, reported Dr. Robert L. Fantz of the Western Reserve University in Cleveland.

His study of hundreds of infants overturns the long-held belief that infants' eyes are too immature to see anything but brightness, color and size.

In a separate study, Dr. Peter H. Wolff of Harvard University Medical School has demonstrated that infants are capable of fixing their attention, even in the first week after birth. Together the two investigations point up how infant capabilities have been underestimated in the past.

They reveal an innate human interest in the complex and the novel—an interest which is evident from birth.

To collect his data, Dr. Fantz devised an ingenious method of peering into the pupils of babies' eyes and observing the reflections there. When he saw an image fixed directly on the pupil, he surmised the baby was seeing that picture.

Whether or not the picture means anything to the infant is irrelevant said Dr. Fantz. The important point is that he has an innate, unlearned interest in patterns.

Newborns appear to be most attracted by linear arrangements—checkerboards or stripes, Dr. Fantz found. At three months of age, their interest shifts to a more complex, random pattern, probably due to learning or maturation of the brain.

This preference for patterns makes sense, said Dr. Fantz, when one considers that the child later finds his way around the environment by the shape of things, not by their color. Thus, the early visual interest in patterns might mark a preparatory step.

In another test, Dr. Fantz found that newborns strongly prefer to look at the complete human face rather than at a blank oval or one with just the eyes. At two months, they sud-

denly develop an interest in the solid head, he said.

Dr. Wolff's intention was to discover whether the newborn has anything that could be called an "attention span." He found that it does. Of 30 hours of wakefulness a week that he observed, the psychiatrist clocked about three hours of intermittent attentiveness. By the fourth week of life, attention time has doubled.

That the week-old infant really does explore his surroundings visually is indicated by his quiet alertness. Though he is fully awake with eyes wide open, he is neither fussy nor moving around. He seems to be looking at things.

Dr. Wolff emphasized that such attentiveness comes only after feeding, not before. Evidently hunger and other physical discomforts interfere with it.

The two studies were published in the *Annals of the New York Academy of Sciences*, 118:793, 1966.

GENERAL SCIENCE

National Net to Monitor Human Pesticide Levels

► A NATIONAL network to monitor pesticide levels in the general population is being established by the Office of Pesticides of the U.S. Public Health Service.

The increasing use of pesticides in the United States means that human exposure to them through food and air is also on the rise. Just what kinds and amounts of these potential toxins are retained in the body and what harm they may do to health during the course of time is still undetermined.

However, medical research has shown that certain widely used pesticides definitely are held in body tissues and organs.

In order to establish and maintain broad surveillance of the amount of pesticides in people, a nucleus of 10 stations will be set up within the year.

Human fat, liver, kidney and brain tissues as well as blood and urine samples will be collected and analyzed with the help of physicians, hospitals and medical examiners in the urban centers where the monitoring stations will be located. The network will be expanded to eventually include 135 stations.

Operating criteria for the monitors will be established by the Midwest Research Institute, Kansas City, Mo., which has been awarded a \$59,500 grant by the Office of Pesticides.

SCIENCE NEWS

SCIENCE NEWS LETTER

Vol. 90 August 20, 1966 No. 8

E. G. SHERBURNE JR., Editor

Watson Davis, Director Emeritus, Editor, 1922-66

The Weekly Summary of Current Science, published every Saturday by SCIENCE SERVICE, Inc., 1719 N St., N.W., Washington, D. C. 20036. NORTH 7-2255. Cable Address: SCIENSERV.

Subscription rate: 1 yr., \$5.50; 2 yrs., \$10.00; 3 yrs., \$14.50. Special trial offer for new subscribers only: 41 weeks, \$3.13. Ten or more copies in one package to one address, 7½ cents per copy per week; single copy, 15 cents, more than six months old, 25 cents. No charge for foreign postage. Change of address: Three weeks notice is required. Please state exactly how magazine is addressed. Include zip code.

Copyright © 1966 by Science Service, Inc. Reproduction of any portion of SCIENCE NEWS is strictly prohibited. Newspapers, magazines and other publications are invited to avail themselves of the numerous syndicated services issued by Science Service. Science Service also produces and distributes THINGS of science (monthly), \$5.00 per year; produces and publishes books and conducts the National Science Youth Program.

Printed in U.S.A. Second class postage paid at Washington, D. C. Established in mimeograph form March 13, 1922. Title registered as trademark. U. S. and Canadian Patent offices. Indexed in Reader's Guide to Periodical Literature, Abridged Guide, and the Engineering Index. Member of Audit Bureau of Circulation.

SCIENCE SERVICE

The Institution for the Popularization of Science organized 1921 as a non-profit corporation.

Board of Trustees—Nominated by the American Association for the Advancement of Science: Wallace R. Brode,*** Washington, D.C.; Bowen C. Dees, National Science Foundation; Athelstan F. Spilhaus, University of Minnesota. Nominated by the National Academy of Sciences: Harlow Shapley, Harvard College Observatory; Detlev W. Bronk, Rockefeller Institute; Henry Allen Moe, The Clark Foundation. Nominated by the National Research Council: Leonard Carmichael, National Geographic Society; Eric A. Walker, Pennsylvania State University; Glenn T. Seaborg*, U.S. Atomic Energy Commission. Nominated by the Journalistic Profession: Gordon B. Fister, Allentown (Pa.) Call-Chronic; Ralph B. Curry, Flint Journal; O. W. Riegel,**** Washington and Lee University. Nominated by the Scripps Estate: Ludwell Denny, Scripps-Howard Newspapers; Edward W. Scripps II,** Edward W. Scripps Trust; Edward J. Meeman, Memphis Press-Scimitar. *President, **Vice President, ***Treasurer, ****Secretary.

Staff—Director: E. G. Sherburne Jr. Assistant Director: Dorothy Schriver. Writers: Barbara Culliton, Jonathan Eberhart, Ann Ewing, Faye Marley, Patricia McBroom, Barbara Tufty, Judith Viorst, Ruby Yoshioka. Science Youth Division: Joseph H. Kraus, Lloyd Ulmer. Photography: Fremont Davis. Production: Marcia Nelson. Syndicate Sales: Forrest L. Snakenberg, Librarian: Margit Friedrich, Interlingua Division in New York; Alexander Gode, 80 E. 11th St., GRamercy 3-5410.

ADVERTISING

Louis D. Young, Advertising Director, SCIENCE NEWS, 1719 N St., N.W., Washington, D. C. 20036. Telephone 202-667-8945.

Advertising Representatives: SCRIPPS-HOWARD NEWSPAPERS. General Advertising Department: 200 Park Ave., New York, N.Y., TN 7-5000; 400 N. Michigan Ave., Chicago, Ill., SU 7-3355; 800 Broadway, Suite 1100, Cincinnati, Ohio, 721-1254; Suite 211, Braniff Building, Dallas, Texas, FL 7-3847; 908 E. Northland Tower, Southfield, Michigan, 444-4595; 6363 Wilshire Blvd., Los Angeles, Calif., OL 3-0026; Room 1522, Philadelphia National Bank Building, Philadelphia, Pa., LO 3-6275; Central Tower Building, 703 Market St., San Francisco, Calif., GA 1-5187.



Free Catalog of 3000 Novelties

Send for amazing catalog of novelties, gifts, live animals, hobbies, fun makers, planes & boats, magic tricks, joke articles, unusual seeds, gadget timesavers, cameras, optical goods, projectors, movies, jewelry, disguises, stamps, coins, puzzles, radios, auto & bike accessories, banks, smokers' gadgets, artists' supplies, printing sets, motors, knives, billfolds, guns, sports, books, games, music, scientific supplies, plants, fireworks, office & household items, etc., from all over the world. Rush name, address.
JOHNSON SMITH CO., Dept. 120, Detroit 7, Michigan