

behavioral sciences

PALEONTOLOGY

The fossils flew

The *Pteranodon* of the Cretaceous period was the largest known flying animal, but researchers examining *Pteranodon* fossils have often wondered just how the vertebrates managed to fly.

With a wing-span of 25 feet, but an average body weight of only 40 pounds or so, the *Pteranodon* must have been a weak and fragile creature. Most authorities assume *Pteranodon* was primarily a glider, and have suggested it could get airborne only by jumping from cliffs.

However, say two scientists from the University of Reading in England, when the standard formula for flying speed is calculated for *Pteranodon* specifications, it becomes obvious the animal could fly quite well. The minimum flying speed for *Pteranodon*, Drs. Cherrie D. Bramwell, a geologist, and G. R. Whitfield, a physicist, calculate, was a mere 15 miles per hour. In stronger winds, "*Pteranodon* would only have needed to spread its wings to become airborne."

Thus, Drs. Bramwell and Whitfield find, "many of the problems envisaged by paleontologists for the pterosaurs did not exist for the pterosaurs themselves."

ANIMAL BEHAVIOR

Industrious rats

A few years ago psychologists began taking note of the fact that laboratory animals seem to prefer food obtained by performing work, such as pressing a lever, to food presented freely. Experiments demonstrating this preference have so far been ambiguous, however.

Drs. Brooks Carder and Kenneth Berkowitz, psychologists at the University of California at Los Angeles, report in the 27 Feb. *SCIENCE* an experiment that clearly indicates such a preference.

Working with laboratory rats accustomed to receiving free food, Drs. Carder and Berkowitz offered their animals the alternative of obtaining food pellets by pressing a lever. When the rats were able to earn food by pressing the lever twice, they would even push their free-food dish out of the way in order to reach the lever.

When the number of lever-pressings required to earn food was increased to 10, the rats returned to the free food.

"As long as the work demands are not too high," the researchers conclude, "rats prefer earned food to free food."

SOCIOLOGY

Race in advertising

For years civil rights groups have complained about the stereotyping of Negroes and other minority groups in advertisements. According to Dr. Keith K. Cox, a marketing analyst at the University of Houston, the stereotype by which blacks in advertising photographs could be portrayed only as unskilled laborers like servants and chauffeurs is rapidly vanishing.

An analysis of advertisements in major national magazines, Dr. Cox reports in the winter 1969-1970 *PUBLIC OPINION QUARTERLY*, shows a major shift in the occupational stereotyping of blacks. Two decades ago, 75

percent of all Negroes in general advertisements were cast as unskilled laborers; only 8 percent are now cast in that way.

Most whites in advertisements, Dr. Cox says, are portrayed as idle. In 1949, only 1.4 percent of blacks were portrayed as idle, as compared to 14.2 percent in 1967.

In advertisements, Dr. Cox concludes, it has become "almost taboo to portray American Negroes as manual laborers or personal service workers."

EDUCATION

The value of Head Start

Ever since the Westinghouse Learning Corp. and Ohio University released an evaluation study of Head Start last spring (*SN*: 5/3, p. 424), a major controversy has been brewing among social scientists over the effectiveness of the program. Head Start was designed to ameliorate the educational and social environment of preschool children from poor families.

According to the Westinghouse-Ohio report, the intellectual and emotional gains demonstrated by children participating in Head Start are transient, disappearing as the children move into normal elementary schools.

In the February *HARVARD EDUCATIONAL REVIEW*, two Harvard University education researchers, Dr. Marshall S. Smith and Joan S. Bissell, severely criticize this negative evaluation of Head Start. The Westinghouse-Ohio report, they claim, has numerous methodological shortcomings.

Evaluation should be built in to social programs, they say, because it is hard to find a valid control group later: "Ex post facto studies of voluntary social action programs are doomed to failure."

"There is," say Dr. Smith and Bissell, "no 'typical' Head Start program," and over-all conclusions about Head Start are dubious. The fact that the children's gains fade by the time they are in second grade, they say, argues "for continued intervention into the elementary school years."

SOCIOLOGY

No labor saved

In spite of the many advances in labor-saving technology, housewives today spend just as much time on household tasks as did housewives half a century ago. Very little has changed except the proportion of time spent on different tasks, Drs. Florence Hall and Marguerite Schroeder of Washington University's School of Home Economics report in the February *JOURNAL OF HOME ECONOMICS*.

By comparison to statistics compiled in 1920 by the U.S. Department of Agriculture, Seattle housewives in 1968 were spending less time on clothing care and shopping, a survey conducted by Drs. Hall and Schroeder demonstrates. But, they note, "The time spent on food preparation and dishwashing has increased from 13.3 hours in 1920 to 18.5 hours per week in 1968." And the time spent on house care has gone up about three hours.

The authors speculate that "Children may be helping less at these tasks than formerly, and perhaps household help is less available."

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