

Trumpeting sorts penguin sexes

Unisex fashion is at its extreme among the tuxedoed emperor penguins. No external features give a clue as to which is male and which is female. While the birds somehow manage to distinguish him from her in the dim, cold Antarctic winter, scientists who want to start breeding colonies have been at a loss.

Eavesdropping on the birds, and monitoring their personal lives, have at last provided a reliable way to distinguish the penguin sexes. The difference, just reported from Hubbs-Sea World Research Institute in San Diego, is in the pattern of vocalizations called trumpeting. In dramatic duets, two penguins trumpet during a ritual of bowing, head dropping and beak tilting. However, penguins also trumpet spontaneously and in response to a chick's call.

Last spring Henning Scheich of Darmstadt, West Germany, recorded the trumpeting of 35 emperor penguins in the Sea World research facility. As in previous studies, two distinct patterns were found: one with long pulses (100 to 500 milliseconds) predominating and the other with short pulses (30 to 100 milliseconds). It had been suggested that the dichotomy might reflect sex, and Scheich tentatively labeled the calls male and female.

Last summer two pairs of penguins in the breeding program, birds that had been captured as juveniles in 1977, finally copulated and each pair produced an egg. The activity was monitored by the research institute staff, and thus the sex of the marked birds was clearly established. Ann Bowles, a researcher from Scripps Ocean-

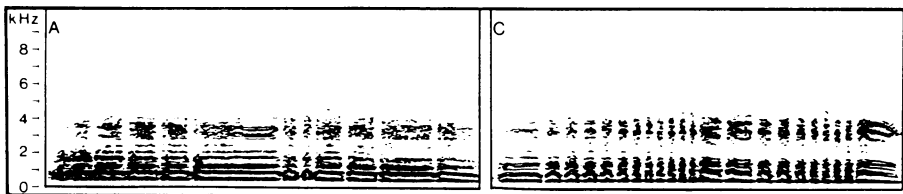


Tuxedoed emperor penguins trumpet with beaks pointing down.

ographic Institution taped the vocalizations of the mated pairs. "In each case, the bird that laid the egg was giving the female-type call," Bowles says.

The calls are quite distinctive; with less than an hour's practice in the field a scientist should be able to identify the sex of penguins, according to Bowles. Considering the effort that goes into sexing the birds by internal examination, distinguishing the vocalization is now the most practical method, she says. The technique is particularly valuable to collectors for breeding programs because it allows determination of the sex of juveniles, too. The young penguins begin trumpeting by the age of six months, Bowles says. □

Vive la difference: Male vocalization has long pulses; female has short pulses.



DES daughters: New studies, same results

One of the most intensely followed groups of women in U.S. society — "DES daughters" — is the subject of two recently released studies. Both studies confirm the previously reported (SN: 2/2/80, p. 69) finding that daughters of women who took DES (diethylstilbestrol), the synthetic hormone once thought to prevent miscarriages, during pregnancy face an increased risk of unfavorable outcome of their own pregnancies.

The National Cooperative Diethylstilbestrol Adenosis (DESAD) Project is one ongoing study examining fertility and out-

come of pregnancy in DES daughters. Preliminary findings of these parameters in a subgroup of DESAD women are reported in the March 13 *NEW ENGLAND JOURNAL OF MEDICINE*. Kenneth L. Noller of the Mayo Clinic in Rochester, Minn. — along with investigators from Baylor College of Medicine, Massachusetts General Hospital, the Gunderson Clinic and the University of Southern California — compared 618 subjects who had prenatal exposure to DES with 618 control subjects (155 sisters and 463 matched controls). Fertility, measured by pregnancies achieved, did

not differ between the DES daughters and the control group. An increased risk (37.7 percent versus 22.3 percent) of ectopic pregnancy, miscarriage, stillbirth and premature live birth, however, was associated with DES daughters.

In a related study, Arthur L. Herbst and colleagues of the University of Chicago compared 226 DES daughters with 203 unexposed daughters whose mothers participated during 1951 and 1952 in a double-blind clinical trial to evaluate DES. The results, published in the February *JOURNAL OF REPRODUCTIVE MEDICINE*, indicate a significantly higher (31 percent versus 3 percent) incidence of nonviable pregnancy outcome in the DES-exposed group.

Furthermore, unlike other studies reported so far, the Chicago report indicates an "apparent higher incidence of infertility among some DES-exposed" daughters. Herbst cites several possible non-DES related reasons for this result, though, including "the fact that the controls for the current study were offspring from a single population." □

Psychosomatic aspect in nutrition

The food we eat does not necessarily end up in our bloodstreams to nourish us. Individual differences in digestive and metabolic processes are among the reasons, but a person's outlook on life may also be involved, say Pamela C. Baird and Howard G. Schutz of the University of California at Davis in the March *JOURNAL OF THE AMERICAN DIETETIC ASSOCIATION*.

Baird and Schutz first explored the food attitudes and diets of 100 female subjects and found that the women fell into four basic categories: persons who were unhappy, lonely, anxious or immature and who ate nutritionally poor diets; persons who were picky, careless or self-indulgent about foods and who sometimes ate nutritionally poor diets and sometimes not; individuals who were obsessed about the health value of foods and who ate good diets; and persons who were concerned, but not excessively, with the health value of foods, and who ate good diets and enjoyed eating with others.

The researchers then determined, with statistical analysis, whether the food attitudes and diets of persons in each of the categories related to the level of nutrients in their bloodstreams. They found that unhappy, lonely, anxious or immature persons not only ate poor diets but had low levels of nutrients in their serum; that the sometimes good, sometimes poor diet of picky, careless or self-indulgent eaters had no relationship to nutrients in their bloodstreams; and that the good diets of health "nuts" were not reflected in their serums, but the good diets of persons who were both rational and emotional about foods showed up in their bloodstreams. □