

# natural sciences

## WOOL PRODUCTION

### Chemical diet cuts shrinkage

A method of reducing the shrinkage of wool after washing has been developed by Prof. A. Johnson of the Department of Textile Technology at the University of New South Wales.

By adding small quantities of sodium molybdate and sodium sulphate to the diet of a sheep in the final months of growth of its fleece, the shrinkage factor in the fleece is lessened. Prof. Johnson says the sodium molybdate weakens the root end of the wool fibers and the sodium sulphate strengthens the tip end. This tends to strengthen the fibers, he says.

Prof. Johnson has not carried out large-scale tests because of shortage of funds, but the technique has been demonstrated to the wool industry and more funds are being sought.

The process would save thousands of dollars which are now spent on shrink-resistance treatment after weaving.

## OIL SPILLS

### Recovery centers for birds

Emergency plans to counter the growing problems involved in rescuing wildlife from seashore oil pollution are being drawn up by British animal welfare organizations.

Under these plans, rehabilitation centers are to be established for birds considered to have a chance of survival, and provision is to be made for the humane killing of heavily polluted animals.

A spokesman for the Royal Society for the Prevention of Cruelty to Animals says: "The plans are now in the course of completion. They are being prepared by a working group set up by a meeting of all interested parties. The problem of oil pollution has been taxing our brains and resources to an increasing extent. Our greatest fear is that the Torrey Canyon disaster will be repeated."

Already this year widespread beach pollution has brought headaches to those whose job it is to rescue and treat injured birds. One Sussex sanctuary has been forced to launch a major appeal for funds to keep abreast of the work. Birds from there are shortly to be transferred to a sanctuary at Portland, Dorset, where "very valuable work is being done" under the supervision of a local RSPCA inspector.

## SALAMANDERS

### Adapting to extra legs

The ability of the central and motor nervous systems to adapt to additional, new body members was the subject of a study conducted by Dr. Kurt Braendle of the School of Technology of the Karlsruhe, Germany, Institute of Zoology. Two extra legs were grafted onto salamanders, giving them six, instead of the normal four.

Salamanders have been used for years in experimental embryology because they demonstrate the phenomenon of tissue regeneration. This differs from simple healing in the completeness with which an amputated limb is replaced by cells differentiating into all required tissues.

Dr. Braendle took two embryos of his amphibians, removed the head and front portion of the body from one, the rear part of the body from the other and let them grow together in a special medium. He hoped to establish that vertebrates specifically are able to adapt rapidly to new limbs just as six-legged insects, for example, have been found capable of doing. The results he obtained confirm his theory.

Within a very short time, the amphibians were operating on all six legs. Their forward movements used this step pattern: One step with the left front, middle left and rear right foot, the next step with the other three feet.

## NUTRITION

### Fertilizer hits cows

Heavy fertilization of pasture may result in lusher greenery but poorer health for the cows, reports Dr. A. J. Mudd of the British Institute of Research on Animal Diseases.

A lowered level of calcium absorption was noted in dairy cows fed in the spring on grass treated with heavy dressing of potash or nitrogen plus potash. The potash treatment apparently inhibits calcium uptake by the grass. In the fall, as a result of heavy nitrogen-plus-potash applications earlier in the year, the grass contains 10 percent more moisture than grass treated with potash alone or untreated.

Because of this dilution the total mineral intake of cows eating the lusher grass is lowered.

## LIVESTOCK

### Vampire bat eradication

Rabies has been established in the bat populations of Mexico and parts of South America for hundreds of years. The earliest reports go back 450 years to the time of Balboa's explorations of the Panama Isthmus which culminated in his discovery of the Pacific Ocean.

The United Nations Food and Agriculture Organization estimates a current annual loss of \$350 million in cattle due to vampire bat transmission of rabies in Latin America. The task of trying to exterminate vampire bats is the object of a special study supported by FAO, and initially begun at a field laboratory of the Mexican Ministry of the Agriculture Experiment Station near Mexico City.

The studies are centered around a night-vision device loaned by the U.S. Army through an arrangement made by the Smithsonian Institution. The electronic light amplification instruments, also used in Vietnam for the detection of nocturnal enemy activities, are expected to facilitate the studies of feeding habits and other vampire bat behavior which may provide clues as to the most effective means of extermination.

The difficulty has always been in devising selective control methods which do not destroy other species of bats considered useful in helping to maintain a balance in the insect populations.

The night-vision devices, which were developed by the Army, use the reflected faint glow of starlight, intensified many times, to provide almost daytime vision at night.

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