

hydration process," he says, "appears to make this material almost sterile." While copper in excreta might be toxic for chickens, Fontenot says, the amounts in the excreta shouldn't be toxic for cattle. Calvert does worry, though, that by using bacteria to convert waste nitrogen into protein, some harmful bacteria might get into cattle.

And what do animals think about feed made from wastes? "Fermented manure," Anthony attests, "smells good. Cattle eat it well."

Might feeding recycled wastes to livestock jeopardize the health of people who eat the livestock? Only a few experiments in recycling animal wastes as feed were conducted before 1966. That year the USDA and the Food and Drug Administration set up a task force to consider recycling animal wastes. The agencies decided recycling was not a good idea from the human health viewpoint and refused to fund recycling research. "But things have changed since then," says J. C. Taylor of the FDA in Rockville, Md., "We have recently been through a week where people refused to buy meat because of its high price." So the FDA is now setting standards that will enable it to evaluate the quality and safety of livestock feed. The FDA wants to know whether such products are really good sources of nutrients, whether they are safe for animals to consume, whether they contain any toxins that might end up in edible tissues of livestock. Taylor is confident that safe ingredients can be made from wastes. He is especially encouraged by some scientists' attempts to upgrade waste materials so they are better sources of nutrients than are the raw products.

The big question is whether the public will buy meat that has been nurtured on excrement. People have been reluctant to buy artificial beef made from soybeans, so it's unlikely that they'll go hog-wild over any product that has any association, however indirect, with manure. Blair is not very optimistic about public acceptance of recycling. However Fontenot and his co-workers rallied 60 courageous persons to eat steaks from cattle fed manure and steaks from cattle that had been fed commercial feed. The subjects did not know which steaks were from which cattle. The steaks from the manure-fed cattle generally received higher ratings from the viewpoint of aesthetics and taste.

As far as nature is concerned, waste recycling is nothing new. Livestock often eat their own manure. Chickens grub along behind cattle, pecking corn from piles of manure. However more research, FDA scrutiny, economic analysis and a strong public relations campaign are probably in order before waste recycling into livestock feed becomes widespread commercial practice. □

films OF THE WEEK

BIRDS IN THE CITY: A FIRST FILM. 16mm, color, sound, 10 min. Many birds are adapted to life in the city. Some build nests in hollow spaces in signposts or in crevices in buildings. Others nest outside the city and visit the city to feed on debris left by man. Ducks, sparrows, swifts, hawks and robins are examples of birds that can be seen in the city. Audience: primary. Purchase \$135 or rental \$8 from BFA Educational Media, Dept. SN, 2211 Michigan Ave., Santa Monica, Calif. 90404.

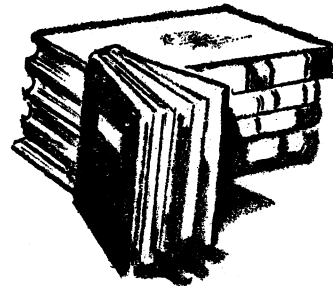
COMPUTERS AND YOU. 16mm, color, sound, 14 min. Through the use of an advanced type of educational computer, the film first introduces us to computers—what they are, their operational functions, and what they can do. It then presents "general purpose computers" and "special purpose computers" and shows applications of each—from calculating the interest on a savings account to navigating a trip to the moon. The film then shows how information is fed into a computer and how this information is translated into computer language. Audience: intermediate, junior high. Purchase \$175 from Journal Films, Dept. SN, 909 W. Diversey Parkway, Chicago, Ill. 60614.

THE LIVING FILTER. 16mm, color, sound, 17 min. Shows how, in the face of severe eutrophication and the resulting pollution of waters, Penn State scientists began experimenting with spray irrigation in 1963. Film shows how the system works, shows advantage obtained in enriched crop and tree growth, effects on animals, and laboratory techniques used to analyze water samples. A spin-off project, now three years old, demonstrates that the living filter can rejuvenate strip-mine soil, getting lush growth of grasses and trees in one growing season in the worst soil in the world. Audience: high school, municipal water authorities, water pollution consultants, environmental protection organizations, general adult. Purchase \$200 from Hornbein-Wood Films, Box 174, Lemont, Pa. 16851 or rental \$5 from Audio-Visual Services, Pennsylvania State University, Dept. SN, Willard Building, University Park, Pa. 16802.

MAKING A SOUND FILM. 16mm, color, sound, 13 min. Shows the different kinds of sound tracks, and explains some of the procedures followed in recording, editing and mixing sound. Synchronized dialogue, voice-over narration, music and sound effects are discussed. The effects of each of these types of sound are illustrated in scenes from a film about a blind woman and a deaf man, and a film editor is shown putting together each track. The film then concludes with an explanation of how the master mix is made. Audience: high school or college beginning filmmakers, general adult. Purchase \$165 or rental \$10 from International Film Bureau, Dept. SN, 332 S. Michigan Ave., Chicago, Ill. 60604.

STRIKING AGAINST OBJECTS. 16mm, color, silent with captions, 3 min. Depicts ways in which workers may injure themselves in striking-against-object accidents. This is made clear in the film, without spoken commentary, as the viewer sees one of the office workers trip up the steps, drop her papers into a fan, fall over several boxes and slip on the floor. Thinking these accidents are the fault of the company rather than the employee, she takes her complaints to the manager's office where she trips over the rug, rests her hand in an ashtray where a cigarette is burning, and hits the wall as she pulls her hand out of the ashtray. She continues this type of accident until she falls on the floor in the arms of another employee. Audience: All types of employees. Purchase \$55 or rental \$7.50 from International Film Bureau, Dept. SN, 332 S. Michigan Ave., Chicago, Ill. 60604.

Listing is for readers' information of new 16mm and 8mm films on science, engineering, medicine and agriculture for professional, student and general audiences. For further information on purchase, rental or free loan, write to distributor.



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