

stirring with a fine glass rod. As soon as the material dissolves, instantly dilute with a large volume of cold water, and transfer the milky fluid, making to 15 ml. with water (6.67 mgm. yeast/ml.).

It will be seen that the alcohol precipitation steps of the previous procedure<sup>2</sup> have been eliminated, saving time; and that the glucan is obtained in aqueous solution or fine suspension, which is more easily pipetted than the anthrone reagent used in the original method<sup>2</sup>. Results obtained by the two procedures are in agreement.

*Note added in proof.* A simpler method of treating the glucan precipitate is to add a few drops of potassium hydroxide solution (300 gm./lit.) and stir with a glass rod, when the glucan disperses and can be diluted to give a stable suspension suitable for direct pipetting.

W. E. TREVELYAN  
R. S. FORREST  
J. S. HARRISON

Research and Development Department,  
Distillers Co., Ltd., Epsom, Surrey.  
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<sup>1</sup> Fales, F. W., *J. Biol. Chem.*, **193**, 113 (1951).

<sup>2</sup> Trevelyan, W. E., and Harrison, J. S., *Biochem. J.*, **50**, 298 (1951).

<sup>3</sup> Trevelyan, W. E., Gammon, J. N., Wiggins, E. H., and Harrison, J. S., *Biochem. J.*, **50**, 303 (1951).

prior to refection are directed towards sampling the rectal contents.

Harder<sup>2</sup> reviews present knowledge of refection in rodents, and proposes the term 'cæcotrophy' to replace 'coprophagy', in view of the cæcal origin of the ingested material. While refection in the shrew may imply analogous nutritional consequences, the mechanism involved must be quite different as no cæcum is present. The process may be a relatively simple one, brought about by a periodic cessation in the flow of digestive fluids. Its occurrence in recently weaned juveniles and in adults soon after capture suggests that it is a normal physiological process rather than one occasioned by diet deficiency in captivity.

These observations were made while engaged on an ecological study of the species at the Bureau of Animal Population, Department of Zoological Field Studies, University of Oxford.

PETER CROWCROFT

Infestation Control Division,  
Ministry of Agriculture and Fisheries,  
Tolworth, Surbiton,  
Surrey.

<sup>1</sup> Taylor, E. L., *Nature*, **143**, 982 (1940). Eden, A., *Nature*, **145**, 36 (1940). Southern, H. N., *Nature*, **145**, 262 (1940); **149**, 553 (1942).

<sup>2</sup> Harder, W., *Verh. d. Dtsch. Zool. in Mainz*, 1949, 95.

### Refection in the Common Shrew

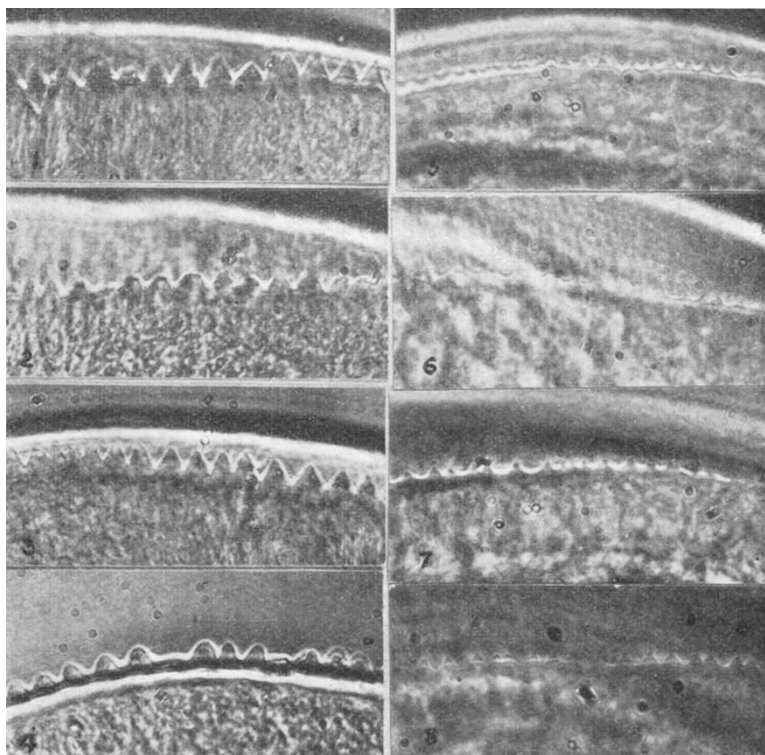
REFECTION or 'coprophagy' has been observed in the rabbit<sup>1</sup> and in certain other rodents, including the house-mouse and brown rat<sup>2</sup>; but there appear to be no records of its occurrence in the Insectivora. The habit has now been observed in juveniles and adults of both sexes of the common shrew, *Sorex araneus* Linn.

The animal adopts a curled-up position upon its side or back, within the nest, parts the hind-limbs and begins to lick the anus. Some individuals grip the hind-limbs with the forefeet in order to maintain this attitude. After a few seconds a rapid series of abdominal contractions brings about the gradual eversion of the rectum. It emerges as a stout firm tube, 5-10 mm. long, which curves slightly forward towards the mouth. The open end of the everted rectum is nibbled and licked for a period which has not been observed to exceed ten minutes. Inversion into the body, like eversion, is effected by abdominal movements. If the animal is picked up without warning, the everted rectum may lose its 'erected' condition and become flaccid.

When the animals are dissected immediately after refection, the stomach and the first few centimetres of the intestine are found to be filled with a milky fluid containing numerous fat globules and small fragments of undigested food. The remainder of the intestine and the rectum are completely empty. It is evident that refection does not commence until the gut is entirely free of faecal matter. Possibly the brief anal lickings frequently observed

### Anatomical Distinction between Human and Pig Strains of *Ascaris*

It has long been a matter of uncertainty whether the *ascaris* parasite of the domestic pig is specifically identical with *Ascaris lumbricoides* L. 1758 from the



Pig

Man

Denticles of *Ascaris* of pig and man. × 750