

## PROJECT 1-2

## FUNGI THAT BREAK DOWN HAIR AND NAILS AND INSECT SKINS

### PROBLEM

Things like sheep horns, wool and hair, bird feathers, animal nails, insect skins etc., are of keratin and chitin. These are rotted away by fungi called keratinolytic and chitinolytic and you can study the abundance and rate of breakdown of such fungi in your local soils. Alternatively, you might want to study how fish scales rot away and do some experiments in fresh or seawater with aquatic sediments.

### INFORMATION

1. You can start with rather exotic material like owl or hawk dung. Place it on soil and proceed as for Project 1-1.
2. Alternatively, you can start with any of the substances mentioned above, sterilized with alcohol and cut into small pieces. Collect soil in a covered glass dish, mix some material into the soil and scatter the rest over the surface. Keep soil damp, preferably using boiled sterile water.
3. You should observe a succession of various fungi so observe the material with a dissecting microscope regularly and sample pieces, mount in water on a slide and use a coverslip for microscopic examination.
4. Using substrates like the sand from the bottom of your budgie's cage or brushing up dust from the dog kennel or shaking out dust from birds' nests might give interesting results.

IMPORTANT NOTE : Keratinolytic fungi may cause diseases like ringworm in people, so handle your material carefully, keeping it under cover as much as possible. Burn material when you have finished and wash your hands after making observations.

### DESIGN OF EXPERIMENT

1. How might you actually measure the rate of breakdown.
2. How will you score the frequency of the various fungi so you can compare the different sources of soil.

### REFERENCES

Hudson, H.J. (1977). Fungal Saprophytism (Studies in Biology No. 32). (Edward Arnold : London).