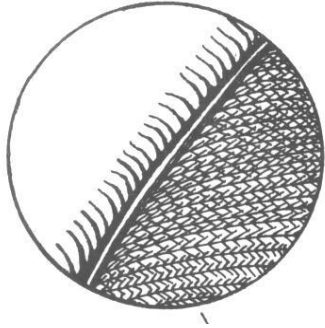
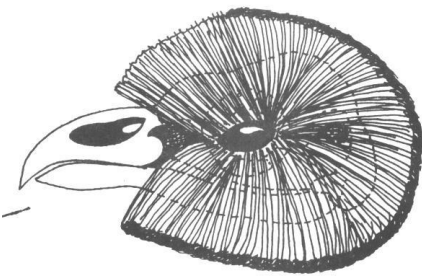


BARN OWL ADAPTATIONS

Flight



Compared to most birds Barn Owls have a very low wing loading (large wings supporting a lightweight body) this means they are able to fly very slowly without stalling and hover in only the slightest lift (rising air). Slow flight gives the birds ample time to locate and pinpoint prey on the ground below, and the low wing loading enables them to pass through the air very gently and hover with minimal effort. The owls' feathers are very soft - another adaptation for quiet flight. The flight feathers are covered in a layer of tiny hairs that trap air within the feather surface and the foremost wing feather also has a row of tiny hooks that help to deaden the sound of air hitting the wings' leading edge. Almost-silent flight enables the birds to hear the tiny sounds produced by their small mammal prey and approach them undetected.



Eyesight

No creature can see in complete darkness but Barn Owl eyes are (on average) twice as light sensitive as human eyes. In addition, the owl's low-light vision is highly movement sensitive. In near-darkness humans may see areas of dim light and shadow but little detail. In the same conditions a Barn Owl has a brighter image and can see detail within the shadows. Anything small that starts to move is instantly noticed by the owl but is unseen by most humans. However, anything that keeps absolutely still (even a human at close quarters) is usually ignored by the owl. Amazingly, the Barn Owl's dark-adapted eyes also work well in full sunlight. Barn Owls take little notice of artificial lights that keep still (road lighting, security lights etc.) and may even use this light as an aid to hunting.

Facial Disks:

Special feathers around each eye form shallow tunnels called facial disks. These funnels direct light into the eyes of the owl and allow the owl to see in almost total darkness.

The facial disks also direct sound into the ears. This allows the owl to find its prey by following any noise it is making, even if the prey is hidden under leaves and snow.

Hearing

The Barn Owl's heart-shaped face works in a similar way to our outer ears - collecting and directing sounds toward the inner ears. The ear openings are situated inside the facial disc just behind the eyes. They are shaped differently and placed asymmetrically (one higher than the other). As a result, sounds reaching the two ears are heard very differently. By analyzing these differences the owl's brain automatically calculates the exact position of the sound-source. Experiments with captive owls have confirmed that they are able to locate and capture prey in total darkness - using their hearing alone. Barn Owls are especially good at detecting the high frequency sounds emitted by small mammals moving in vegetation, vocalizing and chewing. Sensitive hearing is important even when a Barn Owl is hunting in daylight - their prey is often hidden in deep vegetation.



Legs, toes and talons

Barn Owls have remarkably long legs, toes and talons enabling them to catch prey at the base of deep vegetation. The talons are extremely sharp and prey is thought to be killed by foot clenching rather than a peck.



Answer the following questions completely.

List all of the special adaptations owls have to help them survive in their environment.

How does having large wings and a lightweight body help an owl?

What covers the flight feathers on an owl?

What are two advantages that silent flight gives an owl?

Explain how facial disks help the owl see and hear.

In what way are owls able to see better than humans? Give a **detailed** answer.

Why is it important that an owl's ears are placed at different levels on the head?

Explain two advantages that that legs, toes and talons give to an owl.
