

Bird eggs

The eggs of birds are among the most complex reproductive cells achieved in the evolution of animal sexuality. The spectacular diversity of egg sizes, shapes, textures, colours and patterns have long fascinated ornithologists and people in general.

The main function of avian eggs is to protect and nourish the embryo inside it. The egg contains all the nutrients, especially water, required by the embryo for its early development. The albumen (egg white) is composed mostly of water (90%), but besides being the embryo's water supply, the albumen is an elastic, shock-absorbing cushion that protects the embryo. The yolk (egg yellow) is the primary food source for the growing embryo, constituted by lipids, proteins and water. It also contains maternal antibodies that strengthen the immune responsiveness of the chick.

The percentage of yolk content in one egg is related with the maturity of the chick at hatching: eggs with smaller amounts of yolk usually generate very dependent, poorly developed (altricial) chicks, whereas mobile and sometimes independent (precocial) chicks result from eggs with lower amounts of yolk.

The embryo inside the egg is not isolated from the external environment, and breathing occurs through the eggshell. The eggshell is mainly composed by calcium carbonate, which provides resistance and protection to the embryo, but is permeated by thousands of microscopic pores.

Bird eggs vary in size from the tiny (0.2 g) eggs of hummingbirds to the enormous (1.4 kg) eggs of ostriches. Generally, egg size increases with body mass, but small birds lay proportionally much larger eggs.

Egg shapes also vary enormously. Owls, for instance, have almost spherical eggs. Conversely, murrelets have extremely pointed eggs, which cause them to spin in a tight circle, thus preventing them from falling from the cliffs where they breed.

Bird eggs range in colour from uniformly white to brightly coloured and/or densely speckled. The roles of egg coloration are yet poorly known, but camouflage from predators and avoidance of brood parasitism by other birds are certainly important driving factors.

The number of eggs that a bird lays, called the clutch, is related with the species' life-history. Short-lived species, such as small songbirds, tend to have larger clutches, while long-lived species, such as albatrosses and other seabirds, frequently lay a single egg.

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