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Uses Of Feathers :

They serve a varied array of functions which have been summarised below:

1. Protection: Feathers form a lightweight, impervious, flexible, durable and waterproof body covering. They protect the underlying tender skin from all kinds of mechanical, chemical, pathological and environmental injuries.

2. Heat Retention:

The birds have a constant body temperature which commonly remains in between 104° and 112°F, even in subzero weather. Thus, the feathers serve the most important function of retention of heat because the plumage forms an efficient, non-conducting covering with its innumerable dead air spaces, useful as insulation. In cold weather the heat loss is reduced to minimum by fluffing out the feathers, which increases the depth of insulating material by adding to the air spaces within the feathery layers. In warm weather, the feathers are often held close to the body to allow some escape of body heat.

3. Flight Adaptation:

Feathers make the bird's body well adapted for aerial mode of life. They are light, elastic, horny structures which make the body of birds of quite light weights. Further, the thin, flat and overlapping wing and tail feathers, with their close almost airtight linkage due to the interlocking arrangement of barbules, form surfaces to support the bird in flight.

4. Camouflaging (Protective Colouration):

The feathers of different birds have quite characteristic protective colouration like the colouration of their surroundings, which make them indistinguishable from their habitual surroundings and, thus, serve to protect them from their enemies.

5. Sexual Dimorphism:

Feathers provide protective colouration and also sexual display. Sexual dimorphism is common in monogamous as well as polygamous species. Colours and erectile plumes become sign stimuli which evoke or release specific reactions and whole pattern of behaviour in rivals and mates.

Ornaments like bars and spots on the wings and tail, fully exposed only during flight in many gregarious birds, and often widely different in closely allied species, are probably recognition marks which enable stragglers to distinguish between a flock of their own and other species.

For example, on many birds the crown feathers are modified into crests (peacock), topknots (tufted titmouse), ornamental plumes (California

quail), etc. Some birds have special ruffs (ruffed grouse) or pinnae (prairie chicken) about the neck. Breeding plumes (cigarettes) in certain herons and egrets, upper tail, coverts in peacocks and elongated decoration in the streamers of some birds of paradise, serve the similar secondary sexual function.

6. Formation of Nest:

Some birds such as eider-duck and long-tailed-tit, use the feathers of other birds in the formation of warm and comfortable nests for their nestlings.

7. Other Uses:

The powdery secretions of powdery down feathers of many birds (e.g., herons, bitterns etc.) help in keeping the plumage clean and free from ectoparasites. The feathers also provide a characteristic individuality to each species of bird, thus, have significant role in speciation. The spine-tipped rectrices of chimney-swifts and woodpeckers help them in clinging to vertical surfaces. Markings on feathers are recognition marks to their fellow birds.

Feathers are used for stuffing cushions and mattresses. In some birds patches of special feathers without a rachis break up to make a greasy “powder down”.
