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FEATURES OF ANNUAL CYCLE IN THE LIFE OF BIRDS

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Abstract:

This article describes the period of existence of birds and their relationship with the environment. The life of a bird changes every year, just like other animals. And this is associated with a change in external factors, conditions of existence and has an important adaptive value. The life of a bird is in many ways different from the life of other animals. The body temperature of birds is higher than that of mammals (40 ° C and higher). This is due to the great mobility of the class of birds and causes a high metabolic rate.

Keywords: seasonal phases, non-nesting, breeding, nesting, post-nesting migrations, preparation for winter, wintering, molting, crepuscular, diurnal and seasonal cycles.

INTRODUCTION:

Each bird species has its own biology. No two species have exactly the same lifestyle. These differences are mainly in the peculiarities of the relationship of the organism with the environment. In general terms, the life of even the most diverse birds during the year consists of a certain chain of successively replacing each other phases or phenomena characteristic of each season. These seasonal phases add up to the annual biological cycle, which has many stages common to all birds. Common phases only appear differently in individual species. The annual biological cycle is divided into 5 large periods - non-nesting, breeding, nesting, post-nesting migrations, preparation for winter, wintering. Molting, as an integral part of a complete biological cycle, occupies, as it were, an intermediate position between these periods.

Out-of-breeding period

Cyclicity is a set of interrelated phenomena, processes that form a complete circle of development over a period of time. The class of birds is characterized by a high level of biological activity and a clear distribution of it by the hours of the day. Most of the birds are active during the day, however, there are species, the activity of which is confined to the dark time of the day (owl, etc.). In contrast to mammals, among birds there are relatively few forms with round-the-clock activity (for example, ducks); this type of activity can manifest itself in special conditions (for example, during migrations).

The main factors determining the evolutionary formation of the specificity of the diurnal rhythms of various bird species can be combined into the following groups: 1) the nature of the activity of food objects; 2) a set of conditions most convenient for obtaining food; 3) food competition within the class.

Daily cyclicality is typical for the vast majority of birds, which are guided by vision when obtaining food and feed on plant food or daytime animals. In this regard, the vast majority of birds are strictly diurnal animals, falling asleep at sunset and waking up at sunrise. Due to the change in the duration of daylight hours, the time of daily activity also changes. Relatively few nocturnal birds are active at night or at dusk; when searching for prey, they are guided not only by sight, but also by hearing or touch. Nocturnal (dusk) birds include all owls, many herons and a number of waders, with the exception of the snowy owl and the little owl. The daily rhythm of birds changes greatly during the breeding season, when males of many diurnal species sing almost around the clock, and during the flight, which is performed at night by many strictly diurnal birds.

The seasonal cycle in birds is also different from that in representatives of other classes of terrestrial vertebrates. At the onset of a season unfavorable for feeding conditions, birds do not reduce their vital activity and do not hibernate, like many animals, but, on the contrary, react with increased activity. The most striking expressions of this phenomenon are seasonal migrations, or migrations, of birds.

Breeding period

Bird behavior during the breeding season. In preparation for breeding, pairs are formed. For successful pairing, ritual behavior is important: gagging and chanting. In most species, mating is expressed in tournament competitions for males. So, in the spring, males of wood grouses and black grouses gather together on clearing freed from snow, walk on the ground in circles, fluffing their wings and tails, demonstrating bright areas of plumage, and emit gurgling sounds. Females, being in the neighborhood, choose the most active males.

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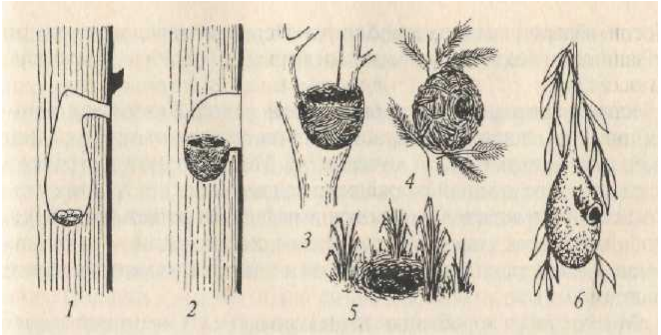
It is customary to distinguish four main types of relations between sexes: promiscuity - a free, unregulated change of sexual partners by both males and females (chicken, crane-like, some waders); polygyny - free change of partners by the male, but not by the female (peacocks, some bustards, passerines); polyandry - a free change of partners by the female, but not by the male (crane-like, charadriiformes) and monogamy - the union of a male and a female for one reproductive season (this is not a typical way of sex relations). In birds, this classification of sex relationships is rather arbitrary.

The relationship of partners during the breeding season can be reduced to two main types: monogamy and polygamy.

Polygamous birds do not form pairs even for a short period: during the laying period, the female can mate with different males; nest building, incubation and care of chicks fall only on the female. Most of the grouse birds (except for hazel grouse and ptarmigan) and other chickens, some bustards, some waders (turukhtan, etc.), most of the birds of paradise belong to polygamy. The differences between polygamy and monogamous with a short period of retention of a pair are very conditional. In monogamous birds, the male and female form a pair. In some species, pairs persist for a long time - sometimes until the death of one of the partners. More often, a pair is formed only for the breeding season. With repeated breeding in the same season, some pairs are preserved, others are formed anew (great tits, sparrows).

Nest building. A well-built nest is of great importance for successful breeding. Nests come in a variety of designs (fig. 170). Most waders lay their eggs on the ground in a small hole and do not make any special nests. Larks, skates, buntings build bowl-shaped nests on the ground, reinforcing the walls and lining the tray with dry blades of grass.

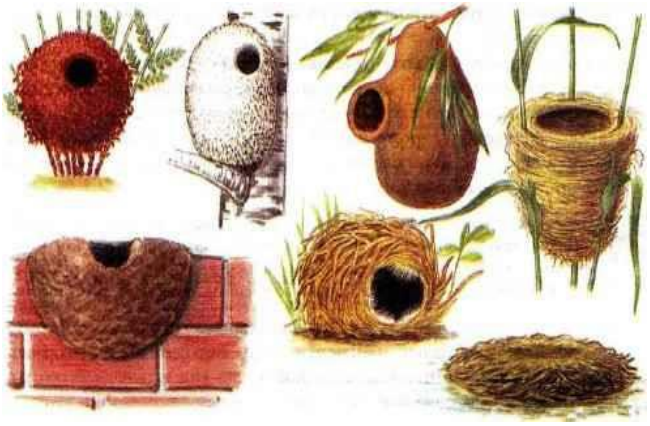


Types of nest : 1, 6 - closed; 2, 4 - half-open; 3, 5 – open

Solitary nesting is typical for most bird species. The size of the protected area depends on the absolute size of the bird and the total number (density) of the population, on the nature of the landscape and the availability of places suitable for nesting; in some cases, the size of the occupied territory also depends on the availability of food. In large birds of prey (many eagles, large chippings, etc.) the nesting area occupies several square kilometers, in the ptarmigan and the great spotted woodpecker - several hectares, in small passerine birds (warblers, warblers, tits, finches, etc. .) - 1000-8000 m2.

In the group type of nesting, the nests of individual pairs are located farther from each other than in the colonial type (from one to several tens of meters); a relatively small area near the nest is protected from individuals of its own species, and when approaching the nest of a predator, all members of the group actively attack it. Such groups nest field thrushes, many starlings (including common), red fawns, sometimes kites, vultures, etc. These birds collect food outside the protected area.

Few birds do not build nests. Guillemot lays an egg on open rocky ledges; small auks nest in rock crevices and under stones, slightly clearing the area where eggs are laid. Many nightjars, avdotki, plovers and some other waders only clear the nesting area without building a real nest.



Different types of nests

Post-nesting time

Phenological groups of birds. By the nature of seasonal migrations, birds can be divided into three categories: sedentary, nomadic and migratory (Mikheev A.V., 1981).

Nomadic birds: 1 - rook; 2 - blue tit; 3 - jay; 4 - spotted woodpecker

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In the post-nesting time, the birds wander. Wanderings - moving short distances in search of food. At first, broods fly not far from the nest, then families unite in flocks, and then the migrations become more distant. Birds concentrate in places rich in food. By autumn, many birds more often migrate to the south, and gradually migrations turn into autumn migrations directed to the south - long flights. The category of nomadic birds is made up of birds that, after breeding, leave the developed nesting territory and move until spring, moving away for tens, hundreds and even thousands of kilometers. For nomadic birds, the continuity of movements that they make in search of food is characteristic. If they stay in places where food is concentrated, then not for long, since their natural reserves of food in winter are not sustainable and stable, as in the category of sedentary birds.

Resident birds: 1 - house sparrow; 2 - forty; 3 - gray partridge; 4 - black grouse. Migratory birds: 5 - barn swallow; 6 - gray goose; 7 - nightingale; 8 - mallard duck

Sedentary are birds that live throughout the year in the same area and do not make any regular movements around the area. Some of these birds spend within a small nest of the territory, not leaving its borders even in winter. Such birds can be called strictly sedentary. There are very few of them in high and temperate latitudes; live exclusively near human settlements. The synanthropic species include the house sparrow, the rock dove, and in some places the field sparrow, the jackdaw and some other birds. They find enough food near human habitation throughout the year.

The migratory category includes birds that, after breeding, leave the nesting territory and fly to other, relatively remote areas for the winter, lying both within the nesting area of the species, and far beyond its borders. Migratory birds are characterized not only by fixed directions and periods of flight, but also quite definitely delineated wintering areas in which they live more or less settled or undertake minor migrations in search of food.

In true migratory birds, which make up the majority of migrants, partial migrations are never observed, and therefore, partial wintering in the breeding area. All of them fly away for the winter to warm climatic zones. This is due to the fact that real migratory birds cannot tolerate sudden changes in the environment in the autumn-winter period. Flight to other parts of the range is almost the only thing that helps them avoid the negative effects of unfavorable food, temperature and other living conditions that occur in the nesting area in winter.

Molting

Molting is a certain seasonal condition characterized by specific features of morphogenesis, metabolic activity, hormonal activity and a certain adaptive value in the general annual life cycle of birds. Plumage change is the most noticeable phenomenon during molting. However, molting as a seasonal condition is not limited to feather loss and the development of new ones in their place.

The complex system of interaction of different endocrine glands against the background of the seasonally changing sensitivity of the body to different groups of hormones and of the endocrine system itself to the influence of external factors creates the prerequisites for the emergence of a wide variety of molting times, its relationship with other seasonal phenomena and specific mechanisms for controlling its course. This diversity corresponds to a wide adaptive radiation within the class and gives a clear adaptive meaning to the character of molting of each individual species. As a rule, there are seasonal molts (full annual, prebreeding) and molts in the process of ontogenesis of plumage of chicks (breeding, post-breeding).

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During preparation for wintering, the birds feed intensively, accumulating fat, which is necessary for migration and surviving unfavorable weather conditions. Birds overwinter in different ways. Sparrows, magpies, gray partridges, capercaillies, black grouse remain in the same place. Such birds are called sedentary. During wintering, many passerine and grouse birds have to switch to feeding on low-calorie plant foods, which leads to a change in feeding places. Hazel grouse, black grouse, wood grouse, ptarmigan feed on trees in winter, while in summer they usually feed on the ground. In conditions of short daylight hours and low temperatures, the birds begin to intensively use the stored feed.

Conclusion

Research has led to the conclusion that the characteristics of the annual cycle in the life of birds is the life activity of birds. Ornithology is a branch of vertebrate zoology that studies birds, their embryology, morphology, physiology, ecology, taxonomy and geographical distribution. The term "Ornithology" was introduced by the Italian naturalist U. Aldrovandi at the end of the 16th century. Among the tasks of ornithology: the study of species diversity and the number of individuals in the study area, the study of taxonomy, ethology, physiology and ecology of birds (bird ringing, bird migration), bird phenology, problems of protecting rare species. Part of the study of ornithology is the annual cycle of birds. The annual cycle of birds starts from reaching maturity to the death of animals. At the same time, it includes the phases of non-nesting, reproduction, nesting, post-nesting migrations, preparation for winter, wintering.

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