

ECOLOGY AND ETHOLOGY OF THE COLLARED DOVE (STREPTOPELIA DECACTO) IN THE CITY OF DEBRECEN

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The basis of this study is made of my own observations, being carried out since 15 years in the city of Debrecen. The examined territory lies in the centre of Debrecen, limited by the streets Béke, Vöröshadsereg, Kossuth and Batthyány.

In the past 15 years a considerable reorganisation of the city took place. In the beginning of the 1960's the fine alleys were on both sides of the street Vöröshadsereg cut, the road was enlarged, the rails of the tram came to the middle of it. After this the modernisation and reconstruction of the quarter in question could begin, first in the south near to the Béke út (street). During this operation all the family houses between the streets Vöröshadsereg and Batthyány were demolished and while constructing the new block-houses, even the remaining old poplars, acacias, nut-trees were destroyed till 1965. Now in the study area the city-picture of past and modern times can be seen together side by side. In the northern part of the quarter, from the Gambrinus passage to the Kossuth street the old-fashioned one-floor and two-floor tiled-roofed buildings remained. In the south the modern, five-six storey buildings with flat roof made up the Jászai Mari square and street. There few trees in the whole quarter. There are only in the Jászai Mari street, on the park-area some lime-strees, alders and birches, which reached 6—10 ms during the past 10 years. In the old part of the quarter there are only some smaller deciduous trees or bushes in the courts.

Nest sites of the Collared Dove in the city

The Collared nested between 1959—62 in the city en mass, in the alleys, in the canopy of the high lines, not rarely just above the conductors of the tram-line, without being disturbed by the trams, running and spark-shooting below. In the courts of family houses on some giant old acacia-, nut- or poplar-tree sometimes more nests could be seen simultaneously. Nowadays in Debrecen the remaining old alley rests, trees in the Péterfia, Simonyi, Béke streets, Bem square mean the preferred nest-sites of the Collared. After the trees were fell they searched for new nesting possibilities, driven also by the increasing numbers and the population density. The first attempts of Collared I observed in 1964 to conquer the buildings, when one was nesting on the modern building of the Count Municipality, using the ornamental opening under the eaves and remaining there two years. In these years the Collared attempted without success to build nests on the TV aerials. The new houses

failed to support the Collard and after the trees were also failing they began to settle on the old tiled buildings, besides the quarter. The first nest appeared in the dead-end of the rain-pipe in 1965. As they are poor nesters and bring only few material, their nesting was of no success first. The nest was watered after the summer showers, the eggs were destroyed. For all that they held ground trying doggedly on the old site. During every nesting cycle the birds brought some nest-material lifting the base of the nest so much that it became fit after one year. The effect of storms and showers added also some gravel, tile-fragments etc. to the nest bringing it to the dead-end of the nest, lifting it and adding to security.

In this territory the preferred nest-sites of the Collard are these rain-pipes. Some pairs have place here, sheltered by the eve from the climatic influences. They settle only on more-storey buildings, not on single-floor ones.

In the 1970's they increased their numbers in this territory so much that they were looking for new nest-sites, as there remained no more free-places in the rain-pipes. 1973 one pair nested on a chimney of small diameter, of artificial stone, with a rain-shelter above it. Next year another pair followed their example. Parallel to this, from 1971 onwards some pairs look for nest-sites once again on the modern buildings. I observed it more times that the birds inspected the flower-boxes of an outside corridor on the 5. floor of a high building. They bred first on the 5. floor in a flower-pot, later in 1972, 1973, 1974 they nested regularly on the 6. floor and occasionally on the 7. and 4., they prefer the flower-pots with high and dense vegetation, where they can hide and feel themselves more secure. Lower than the 5. floor they do not nest having no free onlook and the buildings on the court or the old ones disturbing free- in-flight and departure. Besides these two nest-sites there were occasionally nests in broken bell-glass of street lamps (Jászai M. St.), behind grate of a show-window and between a light-advertisement and the wall, on the letter-holders (Kossuth St.).

Main features of the nesting cycle

Start of the nesting — The Collared Dove is a well-known. resident bird in Hungary. It was observed a lot of times that their activity begins anew on warmer winter days. Calling, displaying, sometimes pairing, rarely breeding can be observed (KEVE, 1959, own observations). For all that their reproduction has a seasonal rhythm. According to our observations the begin of the spring activity is determined not by the duration of insolation, but by the daily temperature, like the moult, studied by KOTOV (1974). In Debrecen it takes place at daily averages of +9—10 °C. Therefore the start of the reproduction cycle may change every year due to the weather. Thus 1973 the sexual activity began to show from early March, in 1974 even from 15. February. On February 16th, 17th 1974 the daily maximum was 17.2—17.3 °C. Due to its influence on February 18th one of the observed pairs repaired its nest on an eternit chimney and began to sit. Though this breeding ceased after 3 weeks due to the returned frosts, also another case shows that it was not exceptional. The crop of a bird shot the March 10th 1974 in Debrecen was full of crop-milk, showing that it laid also in February.

Display flight, territory

The spring activity begins simultaneously in the Collared. The settlement begins to boil from the call of many birds, from their turtling. The pairs fly over the houses in very direction. They are most active at 6 o'clock in the morning. The display takes place on TV aerials, chimneys, eaves and on other high buildings. The male attempts to near the female with blown crop, turtles steadily, bowing. After pairing the female not rarely escapes from its mate, but the male flies after it and keeps on courting. Even now the birds take up quarters in their territory and begin to defend it from other pairs. If more pairs live on the same house, then they occupy counter-lying roofs or rain-pipes far from each other. The territory has in every case at least one high point from where the male observes it and defends its part near to the nest. The observation point can be the top of the roof, or an aerial, or the lift-house. The form of the territory is near to an ellipse with 10—15 m length and it might be as long as 20 ms.

The Collared Dove drives away from its territory the other doves and the Jackdaw, but does not react to other smaller birds as, House Sparrow, Redstart, Starling. The driving away consists of stoops, calls, repeating till the alien departs. Sometimes I observed that alien females were driven off in the way that the male alighted on her and after mating the female left hurriedly. This may be an other factor initiating the exceptional reproduction of the Collard.

The defence of territory lasts till end of season but end of summer this instinct decreases somewhat in the birds and these times the old ones tolerate for long the own and alien young sitting about on the roof or elsewhere.

Nest construction, breeding

The Collard, nesting on the buildings, as they breed more times or every year in identical nests, build it really only once, later it will be only repaired. They are poor builders and so it will be reduced for some shafts. In Window-boxes there were occasions that the female laid her eggs directly on the bare earth. They hurry with the egg-laying and so the nest-building does not last longer than 1—3 days. Many times the twigs, collected in the courts, are pushed by the male directly under the female. In the city wire is not rarely used for nest material.

The dead-ends of the rain-pipes are very much in favour. Every spring there are conflicts here for the place. 1974 April 12th I observed that in a great heap of a dead-end bred the House Sparrow, some day a Startling pair wanted to drive it away. By their lengthy quarrel a Jackdaw was attracted and took it at last. After some days it left, however this for it was an unsuitable place and the nest was occupied by a pair of Collard Doves. At the same time came the Sparrows back, but as a saw it during the summer they lived with each other quite friendly.

The Collard settles into the window-boxes only later in April-May, when the flowers, plants are already planted in. It is also quite possible that those pairs come here which could not acquire any place on the old houses. On the outside corridors they do not like the side boxes and mostly the center boxes

are preferred. Probably the sight is better here and the defend possibilities as they visual field is not shaded by any part of the house and the sudden appearance of man does not jeopardises the birds.

During incubation I observed the following remarkable things. Both parents take part in the breeding, though the male sits less and generally cares for the defence of the territory.

During the first week after the young appear, the female sits on the nest, brooding the young. Later it flies off more often, but during the night the young are never left alone as well as in cold, rainy weather even the almost fledged young are brooded to hinder their flying away before time. The young leave the nest generally 20—21 days old, but in the window-boxes they do not remain longer than 19—20 days, because of disturbance and leave in less mature state. After leaving the nest the young Collard live 5—7, sometimes 10 days in the nest area and spend the night in the nest. Those living on the balconies return no more to the nest. Sometimes birds flying poorly remain in the nest for 2—3 days, in the window-box or on the corridor, but later they will not return. One of the young ringed on the balcony remained two days near the nest.

Number of reproductions

As told already the Collard Dove is a conservative bird in respect of the nest site, remaining there, in the same nest, the whole summer. I stated this without ringing from the fact that after the young were fledged they remained on the roof, defending their area and after 3—7 days they laid eggs once again. Between two incubation the two young even roosted with the female more times in the nest — they lived practically in the nest for many months. I observed at the pair which nested also in winter that they bred two years in the same nest. In other cases the individual behaviour gave information that the same bird returned to the nest. In the window-box of the 6th floor the female came to nest only from a certain side on a small path, it was also very trusting, remembering some people, all these let the specimen to identify. These observations enabled me to count exactly the reproduction cycles.

The whole breeding period lasts in the city population 6—7 months, with favourable periode even 8. 1973 the nest-constructing began from March loth, the last feldging en masse happened on October 20th, so the reproduction period lasted appr. 190 days. 1974 I registered the first breeding on February 18th, the last young fledged on October 9th, i. e. the reproduction period was 230 days. One reproduction cycle means on the roofs 34 days in average, on the balconies 32. Under normal circumstances the birds nesting on the roofs have yearly 4—5 breedings, but under favourable circumstances 7, even 8 are possible. In the case of one pair nesting during two years on the eternit chimney I observed the following cycles. In 1973 the birds bred 5 times and on December 25th (one of the shortest days of a year) on influence of a sudden warm period when daily maximums were around +10 °C, they began to bred the 6th time. It lasted till 1974 January 4th when the frost came back. In 1974 this pair nested 8 times and 5 were successful.

It was of interest that the 6th breeding took place not on the chimney, but in a rain-pipe of their area, beginning when the young had already three

days till fledging. For all that the laying began and the two young spent the following days in the nest of the rain-pipe together with the female. Judging by the date the 7th breeding, once again on the chimney, were also began before the former ended.

On the balcony there were no more breedings than 4 because of the late spring start. Between two breeding the birds generally rest 3—7 days, but sometimes they lay next day.

Nesting success and enemies

To show the nesting success of the Collard Dove, nesting on roofs is an irreal thing by numbers. It would be needed to control the reproduction cycles in the whole population, all nesting on high buildings, being an impossible task technically. But according to my observations of many years most breedings are successful.

The Collard nesting in the city has few natural enemies. There are hardly any cats in the area, but even they do not climb to the roofs and they can catch only the poorly flying young. This happens rarely, however, as most bird fledge not from the window-boxes, but from the roofs. Then they remain so long there that when they have to descend to the earth they fly already excellently and do not fall into the claws of cats.

Its sole real and important enemy in the city is the Jackdaw, which began to specialise for nest-robbing in Debrecen before some years already (Bozsko, 1971). In the city it lives almost exclusively on Collard Doves in the spring months. In early spring, when the Collard begins to nest, the Jackdaw groups arrive late afternoon into the city, they land to rest on the TV aerials and on these occasions they destroy the Collard Dove nests. From mid April remain only two pairs of Jackdaws here to nest, but they know the nests all, inspect the whole territory and rob. The losses are especially important between March and May. Later the Jackdaws leave the territory together with their fledged young and return only in September to jeopardise the last nests of the Collard. Especially great damages are to be awaited in 1975, as the number of Jackdaws increased this year to a great extent not only in the city, but in whole Debrecen. The Collard Doves breeding between February 20th and April 15th lost more times their clutches and they could not arrive to the feeding stage. Because of this in the spring of 1975 in half of the rain-pipes, used for more years for nesting, there were no nests and the stock seemed to be reduced, in comparison to former years.

In the city humans rarely disturb the Collard. Only on the balconies are the nests partly destroyed, but not due to wrong will, rather due to ignorance. Generally people try to help and defend the birds from troubles, a fact which can lead to other results. In one of the nests maize and water was put, in the other barley, so that it covered the eggs totally, in one case an artificial nest was made of a broom and the eggs laid on the bare earth were transferred into it, there was also the case of a nest where a big PVC-pholia was laid above the nest, to cover it against rain. All cases resulted in abandoned nests. On an other occasion the Collard family remained in life through human help. On 1973 October 1st somebody frightened the female from the nest after 7 p. m. and it left the fresh young one. The Collard fled and could not

find its way back in the darkness. The weather was cold, the thermometer showing only +4 °C, with stormy wind. At 9 p. m. the young and the eggs were quite cold, the young one hardly moving, poorly breathing. We took them into the flat holding them on hot thermophor the whole night. The young regained its reflexes in an hour already. Before dawn at 4,15 we put them into the nest and at 4,30 the female already appeared breeding them as if nothing happened. Later the breeding ended successfully.

Relation of the Collard to Man

It was interesting to observe the behaviour of the Collard in close proximity of humans. Though this bird became fully urbanised, it is not yet so trusting as the Feral Pigeons and is so wary as the House Sparrow. E. g. even nesting close to man on the balconies it interrupts its display when close to humans noticing if observed through curtains and flies away. If breeding it gets frightened on the balcony of neared from behind and flies away from the nest on every occasion. If it looks to the balcony corridor, however, and sees there is no harm then it lets itself and its nest to be observed, from quite close quarters. Generally is frightened by the loudly and quickly coming humans, is afraid from those clothed in dark, is more frightened by bigger ones than by smaller ones and tolerates small children quite calmly near its nest. Its waryness varies individually. E. g. one female became so much accustomed to humans during incubations, that at the third nesting it let itself caressed by well-known people. At the same time the male never let it done and on each occasion lifted its wings or flapped in defense. Generally the birds living on the balconies can recognise people passing regularly before them and to react to them individually.

Far from nest, when feeding or collecting nesting-material are they much more trustful.

During 15 years the behaviour of the Collard Dove changed slightly in the city. Its adaptation to the anthropogen life increased and the man himself the birds tolerate more. E. g. 1959—60 I observed many times in the streets Kossuth, Péterfia and Béke that the Collard dared not to land in the small courtyards for collecting twigs, or to the poultry-feeder, if humans were in the nearny. Now with the Collard feeding almost under one's feet and collecting nesting-material, it is hard to imagine it. The nesting behaviour of the last period at the birds of the city population show the same urbanisation.

The city population in autumn and winter

With the end of the reproduction cycle, in late autumn, the number of the Collard reduces perceptibly in the city. Lot of the birds settle in the green area and on the agricultural territories near to the city where they find more food. The number of the birds in the center depends also on whether is there any snow-cover in winter or not. If the earth is black they find food easily in the courtyards, parks and they emigrate in smaller numbers.

Conclusions

1. The Collard Dove became by now in Debrecen a full urbanist, accomodating perfectly to the city circumstances. It uses al ecological niches easily, which can be found in the center and it became a real euritope in the city.

2. The adaptation form quickly and become easily of a masse character (e. g. in realising new nestingsites).

3. The reproduction rata of the Collard Dove in the city is very great, as the the warmer microclimate enables 4—5 broods regularly, even theoretically 7 broods. The polocyclical reproduction and the great increase connected to it ensures farther grow of the city population.

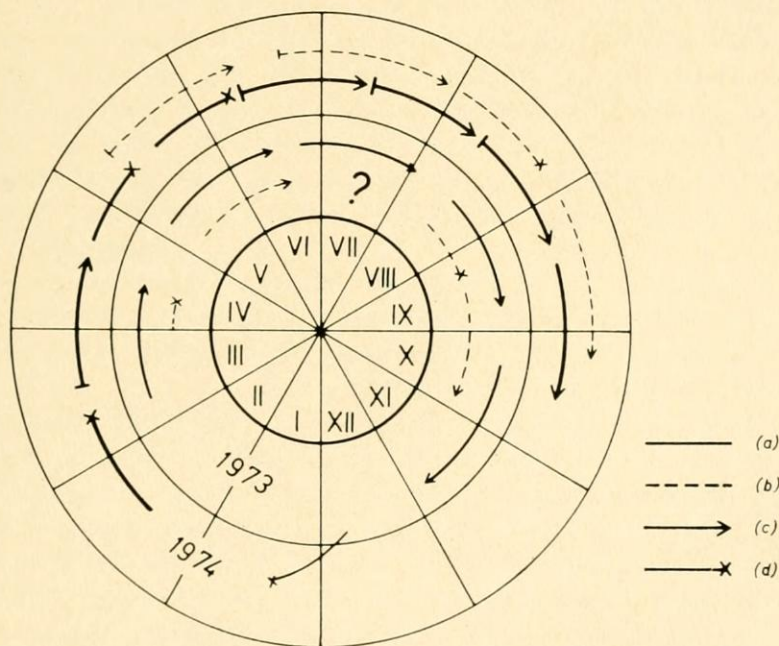
4. One has to take into consideration, however, the regulating influence of the quickly growing Jackdaw population to the Collard Dove's city population. As the Jackdaw has no enemies in the city their number will probably increase in coming years and so the Jackdaw will be able to regulate the rapid spread of the Collard.

Irodalom

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13. *Reproduction cycles of Collard Doves nesting on roofs and in window-boxes in 1973 - 74 - A háztetőn és a virágládban fészkelő gerlek szaporodási ciklusainak összehasonlítása 1974-és 1975-ben, (a) pair nesting on house - házon fészkelő pár, (b) pair nesting in flower - box on balcony - virágládban fészkelő pár, (c) successful breeding - sikeres költés, (d) breeding interrupted - a költés megszakadt*

**A balkáni gerle (*Streptopelia decaocto*) ökológiája
és etológiája Debrecen belvárosában**

Dr. Bozsko Szvetlana

A dolgozat 15 év megfigyeléseit ismerteti a Debrecen város belterületén fészkelő balkáni gerlek ökológiájáról és etológiájáról. Foglalkozik a fészkelőhelyekkel, a fészkelések időpontjával, a nászrepüléssel, revirfoglalással, a fészkeképítéssel, költéssel, a szaporodási ciklusok számának alakulásával, mortalitásproblémákkal, a madár és az ember kapcsolatának problémáival és a populációk teelésével.

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