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Breeding Biology of Blackheaded Wagtail *Motacilla feldegg* Michahhelles, 1830 (Passeriformes, Motacillidae, Motacillinae) in South of Russia

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Abstract

Species-specific features of blackheaded wagtail *Motacilla feldegg* Michahelles, 1830 (Passeriformes, Motacillidae, Motacillinae) breeding biology were identified in south of Russia. A tendency to current species range shift is traced. Critical estimation of literary information about some peculiarities of reproduction and ecology of black-headed wagtail is carrying out on boundary XIX-XXI centuries, estimation of contemporary quantity, limited factories and regularities of species distribution on research territory of European part of Russia are gived. Distribution and quantity *M. feldegg* are irregular in this region and determine by presence of nesting biotopes and potential forage reserve. General character of distribution of this species estimates as a local and not numerous that gives foundation to include *M. feldegg* to some region Red Data Books of Russia and neighboring countries.

Keywords: population, species, nests, layings, nestlings, nesting biotope, birds, "yellow" wagtails, Russia

1. Introduction

Blackheaded wagtail *Motacilla feldegg* Michahelles, 1830 (Passeriformes, Motacillidae, Motacillinae), that is referred to the group of "yellow" polytypic complex of wagtails *Motacilla flava sensu lato*, just to its west forms, is regarded as a separate species in this study (Red'kin, 2001). This bird is treated like a strictly protected species within Europe according to the Appendix II of the Convention on the Conservation of European Wildlife and Natural Habitats (Genovesi & Shine, 2004). At present, data on possible nesting of the blackheaded wagtail in many habitats (regions) of its range are not available. Moreover, limiting factors of this species populations decline and impairment are unknown.

The objective the work is to study (a) nesting phenology; (b) nidiology; (c) oology; (d) nestlings of *M. feldegg* under environment conditions of southern Russia.

Information on possible nesting black-headed wagtail in a number of regions in the area at the present time are sketchy, based on the individual (sporadic) cases, the overall picture of the nature of the distribution of populations of the species in the area is missing. Unknown causes of downsizing and deterioration of populations, the exact data on the number and distribution of species, some aspects of biology. *M. feldegg* narrow local view is extremely demanding on the nesting habitats, which leads to extremely dispersed breeding distribution of this species in the space area. Complex investigations and geographical distribution of populations of the black-headed wagtail *M. feldegg* space area in the south of Russia (Figure 1).

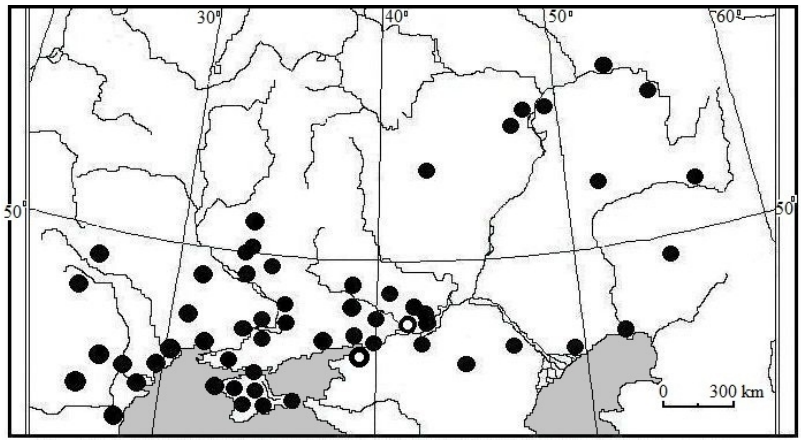

Figure 1. Location of revealed *Motacilla feldegg* in the south of Russia and neighboring countries in 2000-2013 and according to the literature (unshaded poissons shown find nests)

Shown to reduce the boundaries of the form as a reflection of its vulnerability to the combined effect of environmental factors. Identified potential habitat populations *M. feldegg* in southern Russia. Identified limiting factors and patterns of modern species distribution within the European part of Russia and adjacent territories.

In most previous studies on the biology and ecology of *M. feldegg* were delineated boundaries of the historic and current range and abundance of the species identified, but almost nothing was known about the reliability of the findings of nests of this species in the study area, so this study is necessary and urgent. Despite the findings of adult in nature, discover the nest is not simply due to violation of conservation of habitats and nesting behavior of birds breeding complex in modern conditions altered human habitat. Therefore, the existence and condition of populations of *M. feldegg* raises serious concerns in southern Russia. Presented in this study finds nests made for the first time in last 50 years.

2. Materials and Methods

Field studies were carried out during seasons 2000-2010 in the south of Russia and neighboring countries and 2011-2013 in the Rostov oblast of Russia: in the Aksai district, in the vicinity of the Bolshoe Mishkino station, the Don-Aksai water-meadow, from the 4^{th} to 11^{th} of June, 2011 and from the 1^{th} to 10^{th} of May, 2013; and in the Azov district, in the vicinity of the settlement of Kagalnik, maritime meadows of bottomland and mouth of the Kagalnik river, from the 13^{th} to 18^{th} of June, 2012. Nidicolous material (nests): n = 3. Oological material (layings , eggs): n_1 = 3, n_2 = 13. The material on nestlings: n = 4. The work was done using the following methods: mapping of nesting settlements and meetings, survey of plots according to traditional techniques, ringing, the study of the diet of adults and nestlings. The diets were examined by imposing cervical ligature chicks (were analyzed food samples chicks), as well as by analysis of stomach contents of dead birds.

3. Results

The range of *M. feldegg* extends by a broad band in steppe and desert zones of the Northern Palaearctic: from southern Europe (Balkan Peninsula) to the river Volga delta and further to the east up to the south-east of Kazakhstan (Gladkov, 1954; Dolgushin et al., 1970; Abdusalyamov, 1973; Stepanian, 1990; Gavris', 2003). The species occurs on the territory of Russia in the Rostov oblast, Stavropol' and Krasnodar kray, the Northern Caucasus, comes up over the steppes to the Orenburg oblast, the Krasnoyarsk kray and the Irkutsk oblast. It is found outside of Russia in the southern Ukraine, Crimea and Moldova (Figure 2).

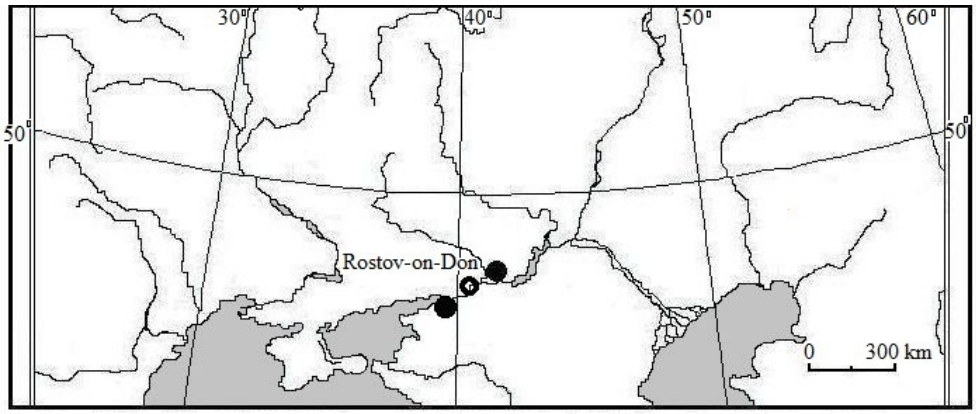

Figure 2. Location of revealed *Motacilla feldegg* nests (nesting sites) in the Rostov oblast in 2011-2013

Two subspecies forms, *Motacilla feldegg* f. *feldegg* Michahelles (1830) and *Motacilla feldegg* f. *melanogrisea* Homeyer (1878) are represented on the territory of Russia and CIS. The blackheaded wagtail subspecies *M. feldegg* f. *melanogrisea* inhabits the delta of the Volga river, the Caspian Sea coast, the Orenburg oblast, the Krasnoyarsk kray and the Irkutsk oblast in the Volga Region (eastern part of the range); the nominative subspecies *M. feldegg* f. *feldegg* lives in the Rostov oblast, on the Black Sea coast, in Crimea and in the Caucasus (the western part of the range) (Zarudny, 1897; Stepanian, 1990; Koblik et al., 2006). It hybridizes with *Motacilla flava* f. *flava* L., 1758 on the southern boundaries of the distribution (Bakhtadze, 1987; Gavris', 2003).

Perennial dense nesting settlements of *M. feldegg* f. *feldegg* are observed in the Rostov oblast: in lowlands of the Don delta, floodplains of it tributaries (as the Aksai river) and interfluve of the Don and Manych rivers, up to the Manych-Gudilo lake. This area could be considered a real refugium of the species where it reaches enough high abundance and could be a background species; *M. feldegg* f. *feldegg* is registered sporadically and is quite rare on other territories within the range.

Joint nesting settlements of *M. feldegg* f. *feldegg* numbered up to 45 breeding pairs in the Rostov oblast, Aksai district, in the Don-Aksai water-meadow, floodplain of the Aksai river (4-10.06.2011). *M. feldegg* f. *feldegg* density was on average 8.51 specimens/ha at $M = 8.51 \pm 0.21$ within this area of floodplain of the Aksai river. Nesting sites of *M. feldegg* f. *feldegg* are sufficiently dispersed in the Don-Aksai water-meadow and floodplain of the Aksai river.

Four nesting pairs and their first broods were registered over the study area of 0.75 ha in vicinity of the settlement of Kagalnik, the Rostov oblast. From 6 to 7 males and 4 females of *M. feldegg* f. *feldegg* were observed and recorded during two counts on 15-16.06.2012.

According to long-term survey, population density of *M. feldegg* nesting settlements in the Kagalnik bottomland on the maritime meadows of the Azov Sea might exceed 160 specimens/km^2.

4. Discussion

4.1 Nesting Habitats

In the Rostov oblast of Russia blackheaded wagtail *M. feldegg* f. *feldegg* prefers to nest in halophytic mesophilic habitats of the river lowland floodplains. The nesting sites are usually removed at 100-300 m from the forage resources (shores of water reservoirs, reed beds, agrocoenoses). The nests are built in a sparse grass cover on the ground, forming small clustered settlements of 3-5, 8-9 breeding pairs or dense colonies on relatively small nesting sites (up to 100-500 m^2).

The nesting settlement of *M. feldegg* f. *feldegg*, that we discovered and studied in the Aksai district, in the vicinity of the Bolshoe Mishkino station, the Don-Aksai water-meadow, floodplain of the river Aksai on 4-10.06.2011, occupied the following plant formations: bottomland steppe-meadows, halophytic suffrutescent meadow-steppe with echinoid licorice, halophytic dry grass meadows with spurge, sedge-grass meadows. Adult birds feed in meadow parcels near water reservoirs, wetlands around eriks (creeks, channels). Males jointly patrol the nesting sites from possible occurrence of birds of pray (kestrel, red-footed falcon, harriers, etc.) (Muraviev & Artemieva, 2012).

Inhabiting the Don-Aksai water-meadow (floodplain of the Aksai river, the Rostov oblast) the blackheaded wagtail mostly prefers plant associations that are attributed to echinoid licorice – meadow brome, meadow brome – Seguier's spurge, Austrian wormwood – meadow brome, downy brome – common wormwood, Kentucky bluegrass – Austrian wormwood. Echinoid licorice (*Glycyrrhiza echinata* L., Fabaceae) is an important part of the *M. feldegg* nesting microbiotopes due to formation of typical microlandscapes in halophytic suffrutescent steppe and bottomland dry meadows. Birds tend to build nests at the base of the plant *G. echinata*, in the thick turf of grasses.

Large nesting colony of diffuse type was found near Kagalnik, in the mouth of the river Kagalnik, the vicinity of Azov from the Rostov oblast on 15-16.06.2012. This nesting settlement occupies the maritime halophytic mesophilic water meadows along the Azov Sea coast and the delta of the Don.

Nesting biotope of *M. feldegg* f. *feldegg* in the Kagalnik river bottomland and delta of the Don, in the vicinity of Azov, is a maritime halophytic mesophilic water meadow with marsh mallow (*Althaea officinalis* L.), Siberian statice (*Limonium gmelinii* (Willd.) O. Kuntze), high goniolimon (*Goniolimon elatum* (Fisch.) Boiss.), Tatar seakale (*Crambe tataria* Sebeók), tufted hair grass (*Deschampsia caespitosa* (L.) P. Beauv.) on meadow parcels, couch grass (*Elytrigia repens* (L.) Nevski), saltpeter wormwood (*Artemisia nitrosa* Weber) on alkaline lands, curly dock (*Rumex crispus* L.), etc. Nesting microstation (plant association) of *M. feldegg* f. *feldegg* composed of Siberian statice (*Limonium gmelinii*) high goniolimon (*Goniolimon elatum*), tufted hair grass (*Deschampsia caespitosa*) on meadow parcels, saltpeter wormwood (*Artemisia nitrosa*) on alkaline lands. Shrub forming sparse thickets in the Kagalnik bottomland and on the coast of the Azov Sea is wolf-willow (*Elaeagnus commutata* L.). Marsh mallow is a key plant species of the nesting microstation, which is a dominant of the characteristic dwarf subshrub halophytic community. Unlike the yellow wagtail that is common in dry meadows and agrocoenoses in the Rostov oblast, the blackheaded wagtail nests in lowland areas with relief depressions, preferring grasslands of floodplains and on the coast of the Azov Sea.

Nesting communities of the birds from the Don-Aksai water-meadow and the Kagalnik bottomland composed of the next indicator species for the *M. feldegg* f. *feldegg* nesting settlements (N. = nesting bird): great cormorant (*Phalacrocorax carbo* L.) inhabits overflow lands, N.; great egret (*Egretta alba* L.) inhabits overflow lands, N.; little egret (small white heron, *Egretta garzetta* L.) inhabits overflow lands, N.; purple heron (*Ardea purpurea* L.) inhabits overflow lands, N.; glossy ibis (*Plegadis falcinellus* L.) inhabits overflow lands, N.; tawny eagle (*Aquila rapax* Temminck) inhabits steppe, N.; red-footed falcon (*Falco vespertinus* L.) inhabits floodplain, N.; common pheasant (*Phasianus colchicus* L.) inhabits meadows, N.; lesser grey shrike (*Lanius minor* J. F. Gmelin) inhabits thickets in bottomland, N.; stonechats (*Saxicola torquata* f. *torquata* L.*, S. t.* f. *maura* Pallas) inhabits meadows with echinoid licorice and marsh mallow, N.; corn bunting (*Emberiza calandra* L.) inhabits meadows with echinoid licorice and marsh mallow, N.

Blackheaded wagtail specializes feeding mainly on representatives of Acridoidea, Sphaerininae, Histeridae (*Saprinus*), Chrysomelidae, Psylloidea, *Noctuidae*, Curculionidae, Ichneumonidae, Arachnida (Aranei), species of *Messor* and *Musca* (Gladkov, 1954; Dolgushin et al., 1970, Gavris', 2003). In food samples chicks and when opening the stomachs of dead birds were found next insect species and spiders in the diet of these birds *Ligus pratensis* L. (7), *Helophorus griseus* (Herbst) (4), *Sphaeridium scarabaeoides* L. (1), *Phyllobius oblongus* L. (1), *Pachybrachis tesselatus* (G. A. Olivier) (2), *Philidrus* sp. (1), *Stenus* sp. (1) and various Arachnida (4), Ephydridae, Cicadellidae (2), Muscidae (2), small Diptera (20) and pupae of Diptera (3), larvae of Aradidae (9) (Gudina, 2009). As part of the stomach contents from 09.06.2011 individuals *M. feldegg* detected: the male – Mollusca (Gastropoda: Planorbidae: *Planorbis spitorbis*; Lymneidae – *Galba glabra*) – 19.1%; Diptera (Chironomidae: *Chironomus* sp.) – 14.8%; Homoptera (Aphirophoridae: *Lepyronia coleoptrata* L.; *Philaenus spumarius* L.) – 13.7%; Odonata (Coenagrionidae) – 11.3%; Aranea – 11.6%; Hemiptera (Rhopalidae: *Corizus hyosciami* L.; Pentatomidae: *Aelia acuminata* L.) – 10.9%; Coleoptera (Carabidae: *Amara* sp.) – 10.2%; Hymenoptera (Formicidae) – 4.3%; Neuroptera (Chrysopidae: *Chrysopa* sp.) – 4.1%. Accordingly, the female: Lepidoptera – 32.2%; Orthoptera – 27.8%; Diptera – 15.4%; Homoptera – 14.6%; Hemiptera (Miridae) – 6.3%; Aranea – 3.7%. Adult birds readily collected herbaceous plants chironomid (*Chironomus* sp.) after their mass breeding along the shoreline of Taganrog Bay. Diet chicks includes the following groups of invertebrates (n=4): Aranea – 1.8%; Orthoptera – 28.2%; Homoptera – 11.4%; Hemiptera – 2.0%; Coleoptera – 2.3%; Lepidoptera – 2.7%; Diptera – 24.7%; aquatic invertebrates – 2.9%.

The differences in forage preferences for *M. feldegg* f. *feldegg* males and females were registered. Males mainly collect Mollusca (Gastropoda: Planorbidae – *Planorbis spirorbis* L.; Lymneidae – *Galba glabra* (O. F. Mueller)) – 19.1%; Diptera (Chironomidae: *Chironomus* sp.) – 14.8%; Homoptera (Aphirophoridae: *Lepyronia coleoptrata* L.; *Philaenus spumarius* L.) – 13.7%; Odonata (Coenagrionidae) – 11.3%; Aranea – 11.6%; Hemiptera

(Rhopalidae: *Corizus hyosciami* L.; Pentatomidae: *Aelia acuminata* L.) – 10.9%; Coleoptera (Carabidae: *Amara* sp.) – 10.2%; Hymenoptera (Formicidae) – 4.3%; Neuroptera (Chrysopidae: *Chrysopa* sp.) – 4.1%. Females forages by chasing various Lepidoptera – 32.2%; Orthoptera – 27.8%; Diptera – 15.4%; Homoptera – 14.6%; Hemiptera (Miridae) – 6.3%; Aranea – 3.7%. Adults of *M. feldegg* f. *feldegg* readily utilize as a food supply the mosquito chironomids of *Chironomus* genus during mass breeding, collecting them in the maritime meadows of the Azov Sea. Birds use warmed up by the sun shallow waters, ground roads, pathways as to collect insects attracted by the warmth of the soil and water surface, catching up them in flight.

4.2 Nesting Phenology (a)

M. feldegg f. *feldegg* start to arrive s in early April, nidification is registered at the end of April and in May, juvenile birds are already flying in early June. Counts on the routes (the number of specimens per km^2) during breeding period revealed gradual increase in density of birds along with arrival of wagtails and occupying nesting grounds, it grows from 3 to 174 sp/km^2 in some years.

In the Rostov oblast in late July – early August the broods of blackheaded wagtail migrate to the coast of the Taganrog Bay in the Black Sea along floodplains of the tributaries of the Don and Manych rivers. The first broods of *M. feldegg* f. *feldegg* from the Kagalnik bottomland on the Azov Sea coast appear in mid-June, their number increses by migrating broods from other nesting sites in floodplains of the tributaries and delta of the Don river. Terms of this species nesting period are rather extended. Presence of the first brooms could be simultaneously combined with the second laying of the same female. The second breeding cycle occurs when the weather conditions are favourable in early spring and the forage resources are available.

4.3 Nidiology (b)

M. feldegg builds nests on the ground, under the cover of low shrub or grass stand, sometimes low over the ground in the bush or on clean sand, but under the effuse tuft of grass (Gladkov, 1954; Dolgushin et al., 1970; Abdusalyamov, 1973; Gavris', 2003; Gudina, 2009; Muraviev & Artemieva, 2012).

We found two nests with complete layings in the floodplain of the river Aksai, the Don-Aksai water-meadow, the Rostov oblast on 06.06.2011 and 09.06.2011. The nests were in a joint nesting settlement of the model type and located on the site of the halophytic suffrutescent meadow-steppe with echinoid licorice. Registered nests were located at the base of the echinoid licorice low shrub, deep into the turf of dry plants of Volga fescue (*Festuca valesiaca* Schleich.). They were deeply embedded and hidden in the dry turf grasses. Entrance to the nest was carefully masked by hanging down and twisted stems of grasses. In the structure of the nests were incorporated small dry stems of Volga fescue, and in the trays were identified horsehair and pet wool. Small "niche" or a pit directly adjoined each of the nests and served for the males from each nesting pair to stay overnight (Figures 3-5).

Figure 3. Nest of *Motacilla feldegg* with complete layings and chicks (the Don-Aksai water-meadow, the Rostov oblast on 06.06.2011)

Figure 4. Nest of *Motacilla feldegg* with complete layings (the Don-Aksai water-meadow, the Rostov oblast on 09.06.2011)

Figure 5. Nest of *Motacilla feldegg* (Kagalnik river, the Rostov oblast on 16.06.2012)

The nest of *M. feldegg* f. *feldegg* was found with five strongly incubated eggs (stage 7) on 16.06.2012. The eggs were clearly related to the second laying of the season. This nest located on the meadow bleakness parcels with such low grasses as Siberian statice (*Limonium gmelinii*) and tufted hair grass (*Deschampsia caespitosa*), besides there were low shrubs of marsh mallow (*Althaea officinalis*). In the structure of the nest wall were incorporated small dry stems of grasses, the trays was evident and with a few small feathers of gulls (Table 1).

Table 1. Parameters (Size) of the *Motacilla feldegg* nests (in *mm*, n = 3) observed in the Rostov oblast

Nest number	Date of observation	Nest diameter (D)	Tray diameter (d)	Nest height (H)	Tray height (h)
1.	06.06.2011	85	60	-	55
2.	09.06.2011	90	55	55	38
3.	16.06.2012	80	60	-	40
Lim		80-90	55-60	55	38-55

4.4 Oology (c)

Full laying of M. *feldegg* includes six or, at least, five eggs (Gladkov, 1954; Dolgushin et al., 1970; Gavris', 2003).

There were found two eggs and three newly hatched nestlings (chicks) in the nest No. 1 on 06.06.2011.

Coloration of eggshells is light yellowish-brown, ornamentation is in the form of dark, dense mottles that become thicker to the infundibular end. The laying of five eggs was found in the nest No. 2 on 09.06.2011. Coloration of eggs grayish-olive, brownish ornamentation is not clearly defined. The female from this nest with a laying had been already ringed and tagged during study of this species nesting in the Don-Aksai water-meadow (04-10.06.2011). One of the ringed females of blackheaded wagtail laid an egg when it was released from ornithological net (08.06.2011). Coloration of this egg differs visually from oological descriptions prepared on the basis of previously revealed two layings in the nests. Main background coloration of the egg is khaki-greenish-gray, ornamentation is not clearly defined on the eggshell. Size of the egg is 18.4 × 14.4 mm (Table 2).

Table 2. Parameters of the *Motacilla feldegg* eggs (in *mm*, n = 12) observed in the Rostov oblast

Number of laying	Date of observation	Eggs length	Eggs diameter	Lim	M
1.	06.06.2011	18.9	14.1	18.9-19.1 × 14.1	19.0 × 14.1
2.	06.06.2011	19.1	14.1	-	-
3.	09.06.2011	18.9	14.3	18.9-19.2 × 13.9-14.4	19.04 × 14.4
4.	09.06.2011	19.1	13.9	-	-
5.	09.06.2011	18.9	14.0	-	-
6.	09.06.2011	19.1	14.4	-	-
7.	09.06.2011	19.2	14.1	-	-
8.	16.06.2012	19.1	14.9	18.0-19.1 × 13.0-14.9	18.5 × 13.8
9.	16.06.2012	19.0	14.0	-	-
10.	16.06.2012	18.1	14.1	-	-
11.	16.06.2012	18,0	13,1	-	-
12.	16.06.2012	18.2	13.0	-	-
	In total:	18.8	14.0	18.0-19.2 × 13.0-14.9	18.8 × 14.0

The laying of five eggs, that had been strongly incubated (stage 7) and had been the second laying of the season, was found in the nest of *M. feldegg* f. *feldegg* in the Kagalnik river bottomland of the Rostov oblast, in maritime meadows of the Azov Sea on 16.06.2012. Eggshell is slightly shiny. The background coloration of eggshells is milky yellowish-grey, ornamentation is in the form of dense mottles and strokes, yellowish-brown, becomes darker and thicker to the infundibular end (Figures 6, 7).

Figure 6. Eggs of *Motacilla feldegg* (Kagalnik river, the Rostov oblast on 16.06.2012)

Figure 7. Polymorphism of eggs coloration of *Motacilla feldegg* (the Don-Aksai water-meadow, the Rostov oblast on 09.06.2011)

For *M. feldegg* f. *feldegg* an assumption about existence of polymorphism was done after visual assessment of eggs coloration. The differences in coloration and ornamentation of eggs of this bird in the Don-Aksai water-meadow indicate possible existence in groups of blackheaded wagtails, at least, two environmental nesting (biological) races. Similar phenomenon was previously registered by the biochemical analysis for yellow-backed and citrine wagtails in the Penza oblast (Titov et al., 1997).

4.5 Nestlings (d)

Female *M. feldegg* f. *feldegg* incubates laying for 12 days and the chicks are in the nest up to 14-15 days in Ukraine, according to data of Gavris' (2003).

There were noted two eggs and three newly hatched chicks in the nest of *M. feldegg* f. *feldegg* studied in the area of floodplain of the river Aksai, in the Don-Aksai water-meadow, in the Rostov oblast on 06.06.2011. One new nestling (chick) appeared the next day, on 07.06.2011. There were registered totally four chicks in the same nest when we examined it on 09.06.2011.

For the first time in the Rostov oblast it was recorded bigamy phenomenon for blackheaded wagtail. There were done observations of active courtship display and coupling of males with other females of the same species, when they already had at that time own nesting territories with nests (layings and chicks). It was also indicated courtship display and coupling of males with two different females of their species during watching period (June 2012) on behavior of *M. feldegg* f. *feldegg* at the time of nesting in the Kagalnik river bottomland and maritime meadows of the Azov Sea. One of those females had a nest with second laying and even so was finishing feed of flying chicks from the first brood. Different females of the same bigamy family had distinctive morphological characters (female No. 1 was grey-headed, female No. 2 was dark-headed). Females of the same male were presented by different ecological (biological) races (morphs). Incubation was carried out by females only in all registered layings.

5. Conclusions

Trends and patterns in the choice of the *M. feldegg* nesting conditions within studied territory of the Rostov oblast are conditioned by mesophilic communities, halophytes and topography, which define the nature of plant associations and food supply in the nesting biotopes. Blackheaded wagtail is very sensitive to the choice of nesting habitats and disappears when they are strongly waterlogging, or under the presence of steep shores and hilly terrain (mineral salts washout). Therefore, this species can be used as an indicator one for floodplain, mesophilic, halophytic, meadows and steppe coeonoses in river valleys, saline clay steppes on a gently sloping shores (Muraviev & Artemieva, 2012).

Basic trends in the modern boundaries shift of the *M. feldegg* distribution in the Rostov oblast of Russia is the sharp reduction of the range boundaries as a whole caused by human activities, and forced concentration of the species in lowland areas with relief depressions along floodplains of the rivers Don and its tributaries, in the delta of the Don and the coast of the Azov Sea. Saving the groups of species in this area became possible thanks to the preservation of halophilic herbaceous and shrubby grasslands and halophytic suffrutescent meadow-steppe with echinoid licorice in the floodplains of the tributaries of the river Don (the river Aksai), maritime halophytic

mesophilic water meadow with marsh mallow in the delta of the Don and the Azov Sea coast, and the preservation in those biotopes the key facilities of fodder base. Following the widespread reduction in population size and boundaries of the range of *M. feldegg,* it was changed the choice of food and nesting biotopes in the south of the European part of Russia. The blackheaded wagtail uses the shores of ponds and eriks, farmlands (corn fields), the treatment industrial plants of large settlements (the Rostov-on-Don city). Reduction of distribution boundaries and abundance of the species under the human economical activity, its accumulation in floodplains reflects vulnerability and relatively low tolerance of the species to the combined effect of environmental factors.

Identified species-specific features of the nesting biology and ecology of *M. feldegg* in the Rostov oblast include definite degree of moisture, salinity and topography of the nesting biotopes for development of specific plant associations, two types of nested structures (open and covered) that depends on micro-relief; marked limits of the nests and eggs parameters; certain composition of the building material for the construction of nests, characteristic set of prey insects for feeding adults and chicks; bigamy structure of families and the associated with third polymorphism of eggs, presence of the second cycle of reproduction.

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