

## PHENOLOGY OF AUTUMN MIGRATION OF THE HOPOE IN UKRAINE

Vitaly Grishchenko

**Abstract.** Phenological data were collected for the period since 1975 till 2002. Total 543 dates of last observation for all 25 regions of Ukraine were analysed. Last hoopoes are observed in various places from the first half of August up to the third ten-day of September and October. Average long-term dates of the last observation in separate regions fluctuate from 29.08 till 20.09 (Table). Variation (standard deviation) of times of departure fluctuates from 9,1 to 17,9 days in different regions, on average it makes  $12,9 \pm 0,5$  days ( $n = 25$ ). Phenological map of departure was prepared. For a longest time hoopoes stay in west, central and south-east parts of Ukraine. There are three stripes of earlier departure (Fig.).

**Key words:** Hoopoe, *Upupa epops*, Ukraine, migration, phenology, autumn, phenological map.

**Address:** V.N. Grishchenko, Kaniv Nature Reserve, 19000 Kaniv, Ukraine; e-mail: vitaly@aquila.freenet.kiev.ua.

**Фенология осенней миграции удода в Украине. - В.Н. Грищенко. - Беркут. 11 (2). 2002. -** Данные собраны при помощи фенологической анкеты, использованы также литературные сведения и собственные наблюдения. Всего за период 1975–2002 гг. получено 543 фенодаты из всех областей Украины и АР Крым. Последних удодов наблюдают в разных местах с середины августа до третьей декады сентября и октября. Для большинства областей средняя многолетняя дата последнего наблюдения приходится на первую половину сентября. Стандартное отклонение в среднем составляет  $12,9 \pm 0,5$  дней ( $n = 25$ ). Построена фенологическая карта окончания осенней миграции. Отлет идет неравномерно. Дольше всего удоды задерживаются в западных, центральных и юго-восточных областях Украины. На карте выделяются три полосы более раннего отлета.

The Hoopoe (*Upupa epops*) is a common and widespread bird species in Ukraine. Its breeding range covers the whole territory of the country. This species breeds also in countries to the north: Baltic states, Belarus, Russia. Main wintering grounds are situated in Africa (Glutz von Blotzheim, Bauer, 1994; Hustings, 1997; Křištín, 2001).

### Material and methods

Phenology of bird migrations was studied in Kyiv university with the help of special phenological questionnaire. The department of zoology have been sending it on the whole territory of Ukraine since 1975. This work was directed by Dr. V.V. Serebryakov. Questionnaires were received by teachers, schoolchildren, scientists, amateur-ornithologists, etc. We have processed data about autumn migration of 30 bird species, including the Hoopoe (Grishchenko, 1994a). They have made a basis of this work. Later the additional information was obtained from birdwatchers. The literature data (Klestov, Osipova, 1992; Marisova et al., 1992; Grishchenko, 1993; Knysh,

1994; Kotsyuruba, Shupova, 1994; Beskaravayny, 1995; Potapov, 1995; Afanasyev, 1998; Ocheretny, 1998; Polyushkevich, 1998; Grishchenko, Gavrilyuk, 2000; Gavrilyuk, 2002; Novak, 2002) and own unpublished observations were used too.

Last observation of the Hoopoe was registered. Obtained data cover the period in 28 years (1975–2002). Total we have 543 records from all 25 regions of Ukraine. They were grouped by regions. For them average dates of departure were calculated (Table). In the Table main statistic information is presented: mean value, standard error, standard deviation, extreme dates. Phenological map of migration were built on the ground of these data (Fig.). We have used the territorial method of phenological mapping: the average date is attributed to the geographic centre of a territory, in this case it is an administrative region (Grishchenko, 1994b).

### Results and discussion

Last hoopoes are observed in various places of Ukraine from the first half of August

up to the third ten-day of September and October. Average long-term dates of the last observation in separate regions fluctuate from 29.08 till 20.09, the majority of them accounts for the first half of September (Table). Variation (standard deviation) of times of departure fluctuates from 9,1 to 17,9 days in different regions, on average it makes  $12,9 \pm 0,5$  days ( $n = 25$ ).

The departure goes uneven. There are areas with earlier and later times of the last observation. For a longest time hoopoes stay in west, central and south-east parts of Ukraine. Stripes of the early departure pass in the south-west direction over the Carpathians, to the

south from Sumy region over the Crimea, to the south over Lugansk region (Fig.).

## REFERENCES

- Afanasyev V.T. (1998): [Birds of Sumy region]. Kyiv. 1-93. (Rus.).
- Beskaravayny M.M. (1995): [Birds of the Nature Reserve "Mys Martian"]. - Zapovidna sprava v Ukraini. 1: 30-38. (Rus.).
- Gavrilyuk M.N. (2002): [Times of bird migrations in Cherkasy district in 1991–2002]. - Avifauna of Ukraine. 2. (Ukr.).
- Grishchenko V.N. (1993): [Phenological observations on the autumn bird migration in Zhitomir region]. - Berkut. 2: 49. (Ukr.).
- Grishchenko V.N. (1994a): [Phenological regularities of

Times of last observation of the Hoopoe in Ukraine in 1975–2002

Сроки последнего наблюдения удода в Украине в 1975–2002 гг.

Region	n	M	SE	SD	Lim
Vinnitsya	24	30.08	2,6	13,0	12.08 – 29.09
Volynia	20	7.09	3,7	16,3	15.08 – 14.10
Dnipropetrovsk	26	9.09	2,5	12,6	14.08 – 29.09
Donezk	28	5.09	1,7	9,1	20.08 – 20.09
Zhitomir	14	3.09	2,9	11,0	20.08 – 21.09
Transcarpathians	24	10.09	2,2	11,0	27.08 – 3.10
Zaporizhzhya	20	14.09	2,8	12,7	20.08 – 8.10
Ivano-Frankivsk	8	13.09	6,3	17,9	28.08 – 12.10
Kyiv	12	7.09	4,5	15,4	19.08 – 11.10
Kirovograd	23	14.09	2,6	12,6	10.08 – 3.10
Crimea	26	17.09	2,3	11,8	2.09 – 15.10
Lugansk	26	12.09	2,0	9,9	27.08 – 30.09
Lviv	29	11.09	2,5	13,7	18.08 – 9.10
Mykolayiv	20	15.09	3,4	15,2	28.08 – 20.10
Odesa	23	12.09	3,1	15,1	20.08 – 11.10
Poltava	21	1.09	2,2	10,2	16.08 – 22.09
Rivne	22	11.09	3,5	16,2	20.08 – 19.10
Sumy	34	1.09	1,6	9,4	15.08 – 23.09
Ternopil	24	4.09	2,5	12,2	16.08 – 2.10
Kharkiv	12	9.09	3,3	11,4	15.08 – 25.09
Kherson	17	20.09	3,8	15,7	18.08 – 18.10
Khmelnitsky	19	29.08	3,3	14,2	8.08 – 20.09
Cherkasy	26	8.09	2,4	12,4	22.08 – 10.10
Chernigiv	29	4.09	2,0	10,7	20.08 – 7.10
Chernivtsi	16	2.09	3,2	12,8	15.08 – 6.10
Total:	543			$12,9 \pm 0,5$	

