

SPREADING AND HABITS OF HIPPOLAIS PALLIDA ELAEICA (LIND.) ALONG THE TISZA

A. BANKOVICS

Bakony Natural Sciences Museum, Zirc
(Received 20 May 1973)

Abstract

The main data relating to the spreading in Hungary of the olivaceous warbler (*Hippolais pallida*) are reviewed, and are supplemented by the results of the author's *Hippolais* studies in 1972. It is found that the olivaceous warbler can be observed everywhere in the suitable habitats between Szeged and Tiszakürt. Its most favoured habitat is *Salicetum triandrae* plant associations on the edge of the water along the Tisza and on the inundation area of the Hungarian reaches of the Danube. Data are also reported on its habits, ethology and breeding biology in the populations on the Hungarian inundation areas.

Introduction

Of Europe's five *Hippolais* species, two occur in Hungary: the icterine warbler (*Hippolais icterina*) has long been a member of the Hungarian fauna, while the olivaceous warbler (*Hippolais pallida*) is a recently established immigrant. This latter belongs among those species spreading to the north from the Balkan peninsula. As regards the extent of its spreading, it can be considered to be in third place, behind *Streptopelia decaocto* and *Dendrocopos syriacus*. The processes of areal spreading of these three species were probably induced simultaneously by similar external and internal effects, but because of the breeding nature of the olivaceous warbler and its lower extra-territorial activity it may have progressed more slowly; thus, even today it has reached only the central parts of the Hungarian Plain. The spreading of the olivaceous warbler is similar to that of the other two species for it is also continuous. It gradually advances in the inundation-area vegetation of the larger rivers. Further, the olivaceous warbler too is in part a culture-following species, since a smaller proportion of its population establishes itself in town parks and gardens (in Szeged, Makó, Orosháza, etc.).

Let us consider briefly the data relating to its occurrence in Hungary. The first Hungarian datum was a suspected observation from Transdanubia: WARGA (1955) considered that he had seen it at the Kisbalaton in 1943, but his description appears to be indicative of the marsh warbler.

It was not known on the Hungarian reaches of the Danube until 1972, although without doubt it had established itself earlier there too, for it had been observed as long ago as 1954 by RUCNER (1962) in the Danube—Dráva angle in Yugoslavia. The first singing pair in Hungary were observed on 12 June 1972, opposite the Buvat

forestry section on the bank of the Danube at Érsekcsanád. Further to the south, a nest containing two eggs and belonging to a different pair was found on the same day on Koppány island by TIBOR JASZENOVICS, who observed an additional two singing birds on 5 July 1972 at Dunaföldvár.

The real scene of its spreading is the Tisza and its surroundings. As early as 7 June 1947 P. BERETZK and A. KEVE considered that they had heard its song in the Móra park on the bank of the Tisza in Szeged (GYÖRY—SCHMIDT 1962). The probability of their observation increased later, for the Móra park has since become one of the most constant habitats of the olivaceous warbler in Szeged. From year to year, one or two pairs settle there. In 1956 the first conclusive specimen was collected at Hódmezővásárhely (PÉCZELY 1962), and in 1958 it was again observed at Hódmezővásárhely by PÉCZELY (1962) and at Orosháza by MURVAY (1962). In 1959 GYÖRY and SCHMIDT found it breeding and collected a confirmatory specimen in Szeged, and also observed it at Makó and Sasér, while STERBETZ observed it nearly at the height of Szentés (GYÖRY—SCHMIDT 1962). CSIZMAZIA (1965) found it breeding in a Szeged garden. Its breeding in Orosháza in 1960 was confirmed by MURVAY (1964). It was observed in Csongrád by PÉCZELY (1962) and at Töserdő by SCHÄFER (1964), while in 1962 it was found by CSIZMAZIA at Vezseny and then at Szajol. Up to the present this is the most northerly occurrence reported in Hungary. It is characteristic of its constancy in the Móra park in Szeged that it was observed there on 11 June 1963 by G. CREUTZ (1966) and his colleagues, while a strongly singing olivaceous warbler was seen on 20 June 1967, by A. KEVE in the company of G. ZINK (Radolfzell) (written communication by A. KEVE).

The advance of the olivaceous warbler can also be detected in the neighbouring countries. PASCOVSKI and NADRA (1958) surveyed its population in that area of Roumania to the south of the Maros. It is also spreading on the Adriatic coast towards Istria, (RUENER 1967), and reached Austria in 1967 (DUDA—LEISLER 1967).

On the suggestion of M. MARIÁN, the author began to study the spreading and ecology of this species in 1968. In that year 7—8 pairs bred on a 700 m section of the Tisza bank at Tápé. Because of the reorganization of this area, the population decreased to 4—5 pairs in 1969. In these two years it also bred in Ady Square and in the Móra park in Szeged (BANKOVICS—MOLNÁR 1970). The high flood-level in 1970 forced the bush-inhabiting birds from the inundation area, and unfortunately there are no data on the olivaceous warbler for that year. In 1971 the presence of 3 pairs was established at about 223 river km on the outskirts of Csanytelek.

From 1972, the time when the author began to cooperate in the Tisza Research Programme, his research into the olivaceous warbler became more intensive. In order to correlate the scattered data described above, and to establish the present northernmost limit of their extent, it was considered necessary to carry out a continuous research trip, setting out from Szeged and preceeding to the north, to estimate the olivaceous warbler population and to perform ecological and breeding-biological examinations along the route. The results of this research trip are reported below.

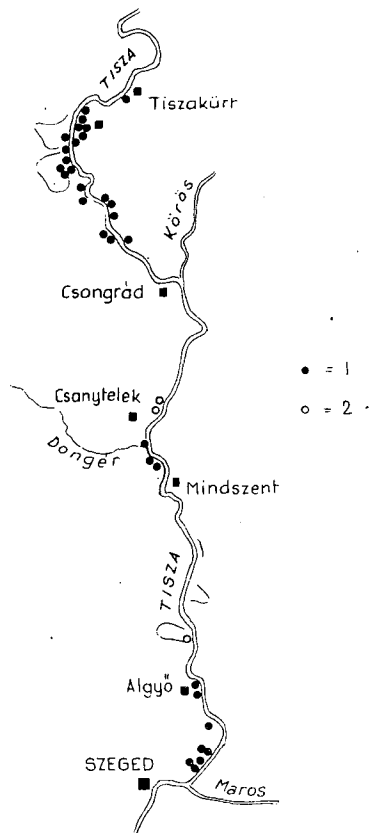
Material and method

In the course of this work the author travelled on foot and by motor-cycle mainly on the right bank along a 98 km inundation-area section from Szeged to Tizsakürt, and also an 8 km section between Szolnok and Szajol. The observations were made at the end of May and in June, when the olivaceous warbler sings most intensively. As will be returned to later, the exact observation and the population survey is then most certain, for it is based on the loud and characteristic song.

Throughout the journey, the sites of occurrence of the individual pairs were recorded both topographically (on the basis of the river km) and according to the habitat. The nests found were measured, and nidobiological observations were carried out at nests containing young.

Sites of occurrence of olivaceous warbler in 1972

Olivaceous warblers in greater or smaller numbers were observed everywhere in the suitable habitats throughout the 98 km section from Szeged to Tiszakürt, between the 175 and 273 river km points. In all 32 pairs were definitely established, but it is beyond doubt that here are far more than this on the two banks (Map 1). Although there were suitable habitats in that section too, this species was not observed on the 8 km section between Szolnok and Szajol (333—341 river km).



Map 1. Sites of observation of *Hippolais pallida elaeica* (LIND.) along the Tisza in 1972.
(1=1972, 2=1947-1971)

The 32 pairs observed between Szeged and Tiszakürt in 1972 occupied the following vegetation types:

1. The most favoured habitat of the olivaceous warbler is the 2—6 m high *Salicetum triandrae* association, generally on the flat bank at the direct edge of

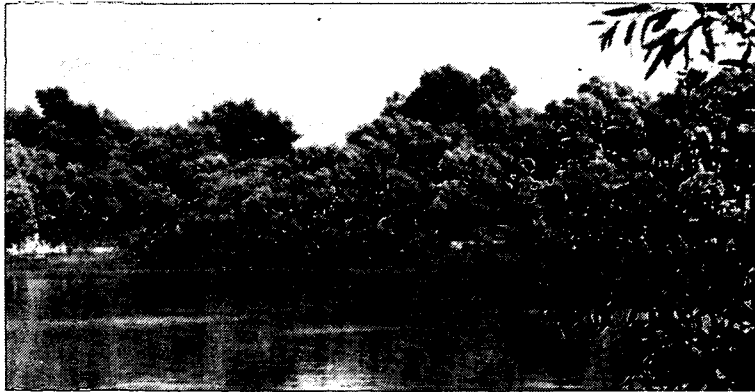


Fig. 1. The main habitat of the olivaceous warbler is *Salicetum triandrae* associations. (Photo by A. BANKOVICS.)

the river (Fig. 1). The main tree species here is *Salix triandra* L., which usually grows from seeds. In this plant association 25 pairs occurred, 78.1% of the observed numbers.

2. Two pairs (6.2%) occurred in *Salix alba* L. and *Salix fragilis* L., with *Rubus caesius* L. as base vegetation, sometimes 200—250 m from the living water.

3. One pair (3.1%) lived in the dense *Amorpha fruticosa* L. developing generally on a high bank in the direct vicinity of the river.

4. One pair (3.1%) was found in young (10—15-year old) *Salix alba* L. with, a base vegetation of *Amorpha fruticosa* L., 200 m from the river.

5. One pair (3.1%) occurred in an old *Populus canescens* (AIT.) SM. grove. below which there was a dense new growth of *Fraxinus pennsylvanica* MARSCH, 250 m from the water.

6. Two pairs were observed in willows interlaced with reeds close to the river (6.2%). (This is also the habitat of the marsh warbler (*Acrocephalus palustris*), which can easily be confused with the olivaceous warbler.)

It emerges from the analysis, therefore, that the true habitat of the olivaceous warbler is the *Salicetum triandrae* plant association on the inundation area, but that in addition it also settles in smaller numbers in other types of vegetation.

Behavioural, ethological and nidobiological observations

Ist song and other sounds

From the spring arrival of the olivaceous warbler, the middle day of which can be taken as 18 May, it sings intensively. Its song is particularly strong up to the time of nest-building (at the beginning of June), or until the hatching of the young (at the middle of June). After the hatching of the young, the pairs sing more rarely, as they are busily occupied in seeking out food and in feeding their young. Of course,

2. Its other song is a quieter, more melodious song, more pleasant for the human ear. It can be described as follows: "tyewp-tyewp-tyewp-tsiew-tsiew-tsiew", succeeded in a mellow twittering, in another variation, by "pi-pi-pi-pi-pi-tew-tew-tew-tew-tew-chivi-chivi-chivi-tsi-tsi-tsi-trewi-trewi-trewi", with at intervals between soft twitterings. This is probably its imitative song, and can be heard only rarely. Such a song was noted at Csanytelek by the author and T. JASZENOVICS on 28 May 1972, and again at Tápé on 29 May.

On the approach of man or some other danger, it begins an alarm chirping. This is similar, but much stronger than the corresponding sounds of the *Sylvia* species. On the increasing of the danger, its chirping accelerates and becomes continuous, and is then reminiscent of the similar sound of the red-backed shrike (*Lanius collurio*). Its chirping is often transformed into song. Its state of excitement is sometimes expressed by *Lanius*-like "chraa-chraa-chraa" sounds. If man approaches the nest, it begins to chirp, but it soon rather leaves the vicinity or becomes quiet. When frightened at other times it emits "tsri-tsri-tsri" sounds too. On hearing the alarm call of a group of *Parus maior* L. passing overhead, one singing specimen of olivaceous warbler also began to give the alarm. In a strong state of excitement or during prolonged singing and chirping, it ruffles up its head feathers.

Feeding ethological data

In the research into its feeding, examinations of the stomach content have not yet been made in Hungary. Field-observations indicate that it catches mainly hairless caterpillars, Diptera imagos, etc. It searches for these primarily in the foliage of *Salix triandra* L., and more rarely among the tops of *Salix alba* L. and *Salix fragilis* L. It rapidly hops from branch to branch among the foliage, and moves nimbly along the horizontal branches, in the meantime snatching up insects with its beak. If the prey is spotted a little above the bird, then it remains on the branch but stretches up to catch it. If it cannot reach it in this way, it jumps up for it. If it is at a distance of 25—30 cm, then in the same manner as the *Phylloscopus* it hangs in one place, catches the insect while "hovering", and then realights on a lower branch. When it catches larger caterpillars, it beats these against a branch before it eats them. After feeding it frequently wipes its beak on the branches.

For resting and preening, it generally conceals itself on a dry branch under the foliage of *Salicetum triandrae*. In this way it is well covered from above, while it can spot danger approaching from below well in time.

Nidocological and breeding biological data

Some pairs commence nest building only two weeks after their arrival, but other pairs leave this work until later. In 1968 the author found a ready, but still empty nest as early as 30 May, but at Tiszaug in 1972 pairs singing in the *Salicetum triandrae* had still not begun to build their nests on 13 June. It should be noted that on the preceding day, 12 June, two egg-containing nests were found beside the Danube.

The most common site chosen for nesting along the Tisza is the 2—6 m high *Salicetum triandrae* band stretching beside the edge of the river. If these trees reach a height of 8—10 m, then their lower parts do not provide sufficient denseness, and the birds leave them. For example, at Tápé in 1968 7—8 pairs used such a band for nesting, but in 1972 they had left them completely and resettled in younger and

lower trees. In another area they retained the taller trees as feeding sites, but in 1972 built their nests in the directly adjacent, low and dense *Amorpha fruticosa* L., whereas four years previously these had been in the *Salicetum triandrae*. More rarely they nest in the shrub level of *Salix alba* L. and *Salix fragilis* L.

They build their nests most frequently on the pencil-thin branches and twigs of *Salix triandra* L., on a triple or quadruple branching; more rarely they build them in the same way in *Amorpha fruticosa* L., sometimes in places where *Rubus caesius* L. increases the denseness, and in this case they use the thorny shoots of the latter as supports for the nests. In contrast with this, TRISCHLER (1943) found the first nests in the Carpathian basin (in the village of Katy on one of the islands in the Danube) on *Crataegus*.

Table 2 gives the dimensions of 15 nests from the banks of the Tisza and 1 from the Danube, together with the heights from the ground.

Table 2. *Dimensions of nests of Hippolais pallida elaeica* (LIND.) (all values in cm)

No.	Height from ground	Nest		Interior	
		Height	Diameter	Depth	Diameter
1	150	7.5	8	5	4.5
2	115	14	8.5	4	4.5
3	130	7	8.5	4	5
4	95	8	7.5	4	4
5	110	8.5	8.5	4	5
6	165	7.5	8.5	4	5.5
7	170	8	9	4.4	4.5
8	105	7.5	7.5	4	4.5
9	75	8	8	4	4
10	110	—	—	—	—
11	95	9	8	4	4
12	125	8	8.5	4	5
13	100	—	—	—	—
14	107	9	9	3.8	5
15	270	7	9.4	4.3	5.3
16	430	8.2	8	4.8	5
Ave.	147	8.4	8.3	4.2	4.7 ₁

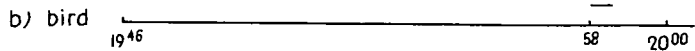
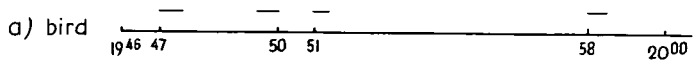
It is clear from the data in the Table that the heights and overall diameters of the nests are fairly variable, whereas the depths and diameters of the interiors are relatively constant. This is understandable as these latter values are directly related to the body-sizes of the birds.

It is interesting to note nest no. 16, which was built almost at the end of one of the small branches of a 4.5—5 m high *Salix triandra* L. The lining material was carried into this nest on 1 July 1972. In connection with the building of nests at such a late date, the question arises of whether these are needed for supplementary hatchings, or for second hatchings. Since the hatching failure-rate is fairly high, it is probably a matter of supplementary hatchings in these cases. It is worth mentioning that, with the exception of this latter example, the height from the ground of the nests of the populations in the inundation areas exhibits much less variation than that for the town populations, which nest both in low bushes and in the tops of trees.

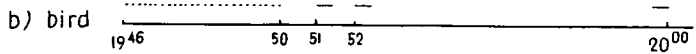
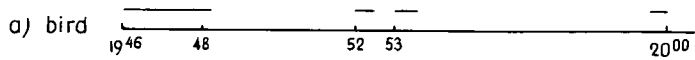
The material of the nests consists of dry plant fibres, between which is incorporated much white, cotton-like matter from the willow. This makes the nests compact-

Table 3

29.5.1972



3.6.1972



— singing chattering

walled, and white in colour, and thus they can readily be distinguished from the nests of the *Sylvia* species. As lining too, they employ almost exclusively willow-cotton, but feathers and down not at all.

Generally in the first third of June, the nests contains most often 4, and more rarely 3 eggs. Nest-parasitism by the cuckoo (*Cuculus canorus*) is frequent (GYÖRY—SCHMIDT 1962, CSIZMAZIA 1965, BANKOVICS—MOLNÁR 1970).

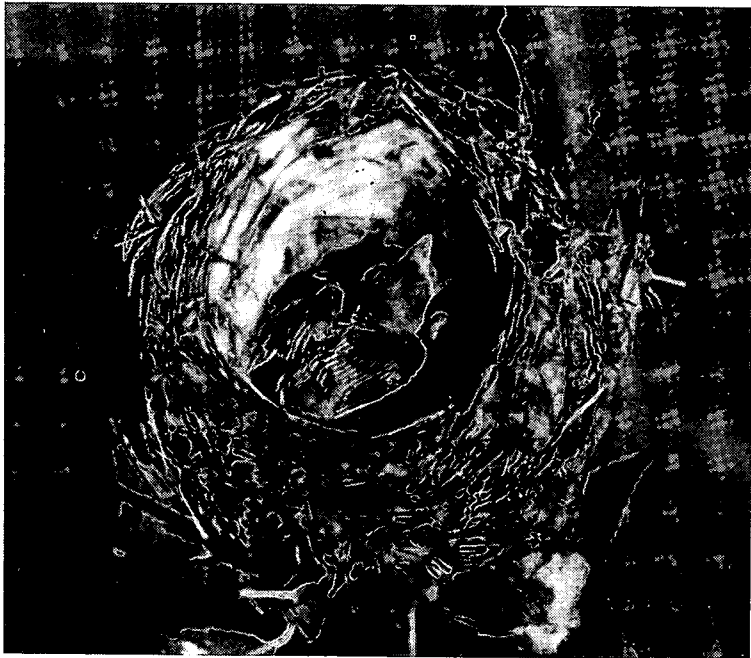


Fig. 2. Olivaceous warbler nest with 4—5-day old young. (Photo by A. BANKOVICS.)

On 1 July 1972 the author succeeded in observing the course of the feeding in a nest containing four young at Tiszaug (Table 3). It is probable that the young were 4—5 days old. The nest was at a height of 2.70 m in a *Salix triandra* L. (Fig. 2).

The data of Table 3 show that the parents fed the young on 18 occasions between 6.45 and 9 a.m. The feeding was carried out in three ways:

1. Because of the cool, windy weather, the female generally remained sitting on the young. At times, however, she flew off the nest; on these occasions she caught something in the close vicinity (2—3 m) and returned with it to the nest to feed the young. She was always absent for only a short time. Feeding in this way was performed 10 times.

2. The male most often (7 times) fed the young only indirectly. He first transferred the insects he had brought to the female, who was then standing in the nest. The female next bent down to feed the young. The male sought the food over a greater area (ca. 25 m), but he never flew from the *Salicetum triandrae* belt.

3. On one occasion, when the male did not find the female on the nest, he himself fed the young.

During the midday hours the female did not sit on the nest either, and the two parents took it in turns to bring the food and feed their young.

References



- BANKOVICS, A.—MOLNÁR, GY. (1970): Hazánk új fészkelő madárfaja: a halvány geze (*Hippolais pallida elaeica*) (A new nesting bird species in Hungary: the olivaceous warbler (*Hippolais pallida elaeica*)). — *Búvár* 25, 413—415.
- CREUTZ, G. (1966): Ornithologische Reiseindrücke in der Volksrepublik Ungarn. — *Falke* 13, 6—15.
- CSIZMAZIA, GY. (1965): Ein Beitrag zur Kenntnis der Verbreitung des *Hippolais pallida elaeica* LIND. entlang der Tisza. — *Tiscia* (Szeged) 1, 86—89.
- DUDA, E.—LEISLER, B. (1967): Der Blassspötter (*Hippolais pallida*) in Österreich. — *Egretta* 10, 1—12.
- GYÖRY, J.—SCHMIDT, E. (1962): A balkáni halvány geze terjeszkedése és megjelenése Magyarországon (The spreading and appearance in Hungary of the Balkan olivaceous warbler). — *Aquila* 67—68, 17—26.
- JILKA, A. (1967): Ein Beitrag zur Charakterisierung des Gesanges von *Hippolais pallida*. — *Egretta* 10, 17—27.
- KEVE, A. (1960): *Nomenclator Avium Hungariae*. — Budapest.
- MURVAY, Á. (1964): A halvány geze fészkelése Orosházán (Nesting of the olivaceous warbler at Orosháza). — *Aquila* 69—70, 255.
- PASCOVSCI, S.—NADRA, E. (1958): Le récent développement de l'aire d'expansion de *Hippolais pallida alaeica* (LINDERM.) dans l'ouest de la République Populaire Roumaine. — *Com. Acad. Rep. Pop. Rom.* 8, 1279—1283.
- PÉCZELY, P. (1965): Új hazai fészkelő madarunk a balkáni halvány geze (*Hippolais pallida elaeica* LIND.) (New nesting bird in Hungary: the Balkan olivaceous warbler (*Hippolais pallida elaeica* LIND.)). — *Vertebrata Hungarica* 4, 67—71.
- RUCNER, D. (1962): Beitrag zur Kenntnis der Ornis von Kopacki rit und Umgebung in Baranja. — *Larus* 14, 84—120.
- RUCNER, D. (1967): Über die Verbreitung der *Hippolais*-Arten im Küstenland Jugoslawiens. — *Journ. f. Orn.* 108, 71—75.
- TRISCHLER, A. (1943): A balkáni halvány geze a magyar madárvilágban (The Balkan olivaceous warbler in Hungarian ornithology). — *Aquila* 50, 248—256.
- WARGA, K. (1955): Halvány geze megjelenése a Kisbaltonnánál (Appearance of the olivaceous warbler at the Kisbaltaton). *Aquila* 59—62, 394.