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Toimitus O. Kalela, G. Nordström

On the Expansion of Blyth's Reed Warbler (Acro-cephalus dumetorum) into Finland.

By JUHANI PAATELA and LEO KAILA

During the postwar years attention has been paid to the fact that many species of birds previously regarded as rare have become common in this country. The decided rise of average temperatures in May and June since 1920's, and especially since the 1930's, has been considered the main cause of this phenomenon. The raised temperature obviously stimulates the migration of some species causing its prolongation and thus an expansion towards the north and northwest (KALELA 1946, LEIVO 1946, VÄLIKANGAS 1951). One of these newcomers spreading from the east and southeast is Acrocephalus dumerum.

General distribution

The breeding range of the species extends in the west close to the southeastern border of Finland and to the eastern parts of Estonia (Fig. 1). Its westernmost known nesting place is in Lithuania, and stray individuals of the species have been found in Great Britain (Peterson, Mountfort & Hollom 1956). No records of the species have been made in Sweden so far (Förteckning över Sveriges fåglar 1959).

There were nine records of Acrocephalus dumetorum in southeastern Finland during the years 1883—1944. All the localities of the finds (Impilahti, Räisälä, Viipuri, Tolvajärvi, Muolaa, Suursaari) are situated outside the present-day borders of Finland (KIVIRIKKO 1947, COLLIN 1943, 1945, VÄLIKANGAS 1945, and A. REINIKAINEN, Muolaa

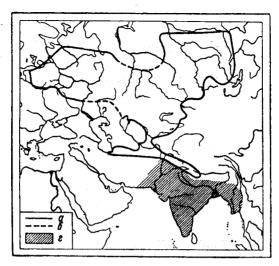


Figure 1. — The general distribution of Blyth's Reed Warbler (From DEMENTJEV et. al. 1954). Shaded = overwintering area.

late in June and early in July 1943, 1 & in the park of Kuusa estate; orally). During the war the species was occasionally found in Eastern Karelia, particularly in the Svir region, where KLOCKARS (1944) found 15 singing males.

Occurrence in Finland

In addition to the published notices on Acrocephalus dumetorum, the authors have had at their disposal numerous other, hitherto unpublished observations, which have been marked in the following references with the word 'orally', and for all of which the authors hereby wish to express their gratitude to the persons concerned.

The 1930's

June 14—28, 1930, Kuopio, 1 & on an old dumping ground (A. REINIKAINEN, orally). — June 19—July 1, 1934, Helsinki, Töölönlahti, 1 & (O. HYTÖNEN & O. LEHTONEN 1934). — June 19/20, June 23/24, 1937, Helsinki, Laajalahti, 1 & (O. LEIVO 1938).

The 1940's

June 26—27, 1943, Helsinki, Pikku-Huopalahti, 1 & (Y. KARPPINEN 1943). — June 10, June 12/13, 1944, Helsinki, Pasila marsh, 1 & (O. Leivo & J. Grönvall 1946). — July 29, 1945, Helsinki, Töölönlahti, 1 & (L. Lehtonen, orally). — June 25 or 26, 1946, Siilinjärvi, shore of Lake Kevätön, 1 & (M. & P. SOVINEN

1951). — June 15—July 22, 1947, Lappeenranta, 1 pair with nest and 2 & & (L. TOIVARI 1950). — June 18—19, 1947, Siilinjärvi, 1 & in a broad-leaved wood on a lake shore (A. REINIKAINEN, orally). — Summer 1948, Lahti, 1 pair with nest (ref. HILDÉN & LINKOLA 1955). — June 11—21, 1948, Lappeenranta, 1 & (L. TOIVARI 1950). — June 6—25, 1949, Joutseno, 2 & & (L. TOIVARI 1950). — July 6—9, 1949, Korpilahti, Särkijoki, 1 & in a coppice on the shore of Lake Painaa (A. REINIKAINEN, orally).

The 1950's

June 2/3, 1950, Lauritsala, 1 & and June 11, 1950, Lappee, 1 & (T. PIIPARINEN 1951). — June 8—20, 1950, Punkasalmi, Kauvonniemi, 1 & (B. LINDEBERG 1955). — June 20, 1950, Taipalsaari, Ahokas, 1 & (P. Voipio 1956). — June 29, 1950, Punkaharju, Lehtisalo, 2 & & (I. KANGAS 1954). — May 5, 1952, Varkaus, Joutsenlahti, 1 8, for about a fortnight (H. TYRVÄINEN 1953). — June 4, 1952, Tyrväntö, Vanajanselkä, Haukilahti, 1 & (P. LINKOLA 1954). — June 29, 1952, llomantsi, 1 & (N. Fritzén & R. Tenovuo 1957). — June 16, 1953, Helsinki, Tali, 1 & (K. MALMSTRÖM 1954). — May 28—29, 1954, Helsinki, Vantaanniemi, 1 & (U. HÄYRINEN & K. MIKKOLA, orally). — May 30, 1954, Punkasalmi, Kauvonniemi, 1 &, June 7, 1954, 4 & & (B. LINDEBERG 1955). -- June 18-July 24, 1954, Hämeenlinna, 1 pair with nest June 18, nest destroyed July 1. Less than 1 kilometre away, 1 &, from June 24 on for about a fortnight on the land of Katisto estate (V. VALKEILA 1955). — During the summers of 1955—1959 heard on the shore of Lake Kevätön, Siilinjärvi (M. & P. Sovinen, orally). — June 10—19, 1955, Östersundom and surroundings, 1 + 1 &, and Helsinki, Viik, 1 & (M. JAHNUKAINEN et. al. 1959). — June 9-10, 1956, Lammi, 1 &, at the foot of Untulanharju ridge, in a lush willow thicket, situated by a brook running below a road. Filipendula, Urtica and other herbaceous plants added to the luxuriance of the vegetation (O. HILDÉN, orally). — June 14—15, 1956, Korpilahti, Särkijoki, 1 &. The bird was singing in a low alder grove on the northeast shore of Lake Painaa (O. & A.-L. REINIKAINEN, orally). — June 15, 1956, Hamina, 2 & & . Nest found June 22 (S. Lehtonen 1959). — Throughout June 1957, Riihimäki, 2 3 3 (P. Kukila 1957). — June 20, 1956, Riistavesi, Laatanaho, 1 & in a coppice on the shore (A. REINIKAINEN, orally). -- June 5, 1957, Oravainen, 1 & (S. BERGMAN 1959). - June 5, 1957, Lappeenranta, 1 3 in a damp meadow overgrown with willows, situated between the railway station and the lime kiln. For half an hour the bird was heard imitating the voices of 20 different species in a masterly manner (O. HILDÉN, orally). — June 9—16, 1957, Uusikaarlepyy rural commune, 2 & & (B. Klockars 1958). — June 10-29, 1957, Kirkkonummi, 1 & (M. Jahnu-KAINEN et. al. 1959). — June 10—July 4, 1957, Lempäälä, 1 3. The observer O. SOTAVALTA has later been informed orally that comparison of his tape recording of the bird's song with a Finnish and a Swedish record, proved the bird to be Blyth's Reed Warbler, and not a Marsh Warbler, Acrocephalus palustris, as stated in his earlier report (1958). — June 22 and later, 1957, Riistavesi, Leppäranta, 1 & in a thick coppice on the shore of Lake Vianvesi. Probably nesting (A. REINIKAINEN, orally). - May 1958, Lempäälä, 1 singing & heard on two occasions (O. Sotavalta, orally). - May 25-June 1, 1958, Köyliönsaari, 1 &

(T. SILVOLA 1959). — June 6—July 18, 1958, Kuopio, Siikalahti, 1 &, June 20, 2 & & (L. & T. RÄSÄNEN 1959). — June 14, 1958, Tyrväntö, Lepaa, 2 & & (M. JAHNUKAINEN et. al. 1959). - June 14-17, 1958, Lake Runttujärvi, about 15 kilometres northeast of Kokkola, 1 & (R. CASÉN 1959). - June 4-July 10, 1959, Kuopio, Mallitalo, 1 ô, 50 metres from a spot where a Locustella naevia was singing. Habitat: a narrow, sloping hillside with deciduous trees and bushes. The male later moved to a rich brookside alder grove, the ground-vegetation of which partly consisted of Struthiopteris. On July 10 the bird had moved to a pond called Sammakkolampi, some 300 metres from its original singing place (T. RÄSÄNEN, orally). There was no indication of nesting (P. SAIKKU, orally). - June 7-12, 1959, Korpilahti, Särkijoki, 1 3, roughly 1.5 kilometres from the spot where the species was found in 1956, in the northwest end of Lake Sipilänjärvi. The bird was singing in a dense patch of alders of about 25 square metres, 50 to 60 metres from the shore (O. & A. REINIKAINEN, orally). — June 8, 1959, Lieksa, in the neighbourhood of the frontier post, 1 & in a coppice of willows, birches and alders along the roadside. The bird was not heard the following day (E. LAPPI, orally). — June 22—24, 1959, Punkasalmi, Kauvonniemi, 1 & in a raspberry bushes in a garden (B. LINDEBERG, orally). - July 5, 1959, Pälkäne, Harhala, 1 & (P. JALKANEN, A. HAAPANEN & P. LINKOLA, orally).

In the latter half of the 1950's, one of us (J. PAATELA), made numerous night-time excursions early in the summer, taking tape-recordings of birds' voices. During these trips following observations on Acrocephalus dumetorum were made, the three first in company with O. HYTÖNEN:

- 1) June 16/17 and June 27/28, 1955, Helsinki, Herttoniemi, 1 3 in a damp patch of willows, about 50 metres from the seashore.
- 2) June 19/20, 1956, Helsinki, Laajasalo, 1 &, lush undergrowth (Urtica, Filipendula, Anthriscus, etc.) on the waterside at the head of Herttoniemi bridge. The bird was not the same as the year before; it's song on the tape was different. The bird sang for a while together with a Marsh Warbler, Acrocephalus palustris, in the same bush.
- 3) June 26/27, 1957, Porkkala, Tolsa, 1 & among a rich Anthriscus vegetation by the roadside. The nearest lake was some 300 metres away. On the other side of the road, about 20 metres away, a Marsh Warbler, A. palustris, was singing in a willow coppice. Both species were at the same spot on June 29/30.
- 4) From June 6, 1958, to mid-July, Helsinki, Herttoniemi, 1 & in a patch of deciduous trees (about 200 metres from the place where the species was found in 1955 and about 600 metres from the spot where it was found in 1956). During the XIIth international ornithological congress at least 80 persons became acquainted with this male.

On June 7-9, 1959, the authors made a trip by car on the route Hamina-Lappeenranta-Parikkala, with a view to studying the oc-

currence of Acrocephalus dumetorum in this southeastern region. Although the time taken was rather short, two nights, it might be as well to give an account of the trip and of the observations made on the way. The first part of the journey, from Hamina to Lappeenranta, was covered on June 7/8, 11.10 p.m.—2.20 a.m., and the part Lappeenranta—Parikkala on June 8/9, between 11.20 p.m. and 2.40 a.m. In addition to this, the route Pertunmaa—Heinola—Lahti—Helsinki, was driven on June 9/10, between 9.40 p.m. and 1.40 a.m. Immediately before setting out on the first part of the journey, the town of Hamina and part of its surroundings were examined, and this process was repeated in Lappeenranta prior to the second part of the journey.

In the course of the journey, stops were made in nearly all open places, the minimum distance between two stops being rarely less than 300 metres. In the largest open areas, distances between stops were longer, especially if there were no coppices around. The following table gives data on the driving and the stops:

	June 7/8	June 8/9	June 9/10
Distance covered, kilometres	110	96	147
Driving time, minutes	190	200	240
Average speed, km/h	35	29	37
Number of stops made	63	57	63
Driving + stop, average time seconds	180	210	230
Average distance between stops, kms	1.7	1.7	2.3

During the first night the weather was somewhat unfavourable: a thundercloud was moving eastward ahead of us. The second night was clear, but slightly windy. The third night there were thundershowers after midnight. During the trip singing males of *Acroce-phalus dumetorum* were heard as follows:

- 1—2) June 7, Hamina, shore of Lake Kirkkojärvi, 1+1 δ , from 10 p.m. on, in the lakeshore bushes. The distance between the two individuals was roughly 400 metres.
- 3) June 8, Miehikkälä, 51 kilometres from Hamina by road, 0.36 a.m., 1 & in a clump of alders by a brook flowing through an open field, about 100 metres from the road.
- 4) June 8, Lauritsala, 9.23 p.m., 1 & in a grove of willows and alders near a lakeshore.
 - 5) June 8, Lappeenranta, 10 p.m., 1 3 on the ramparts of the town.
- 6) June 8, Lauritsala lock, 11.25 p.m., 1 3 in an alder thicket, some 30 metres from the road.

- 7) June 8, further up the Saima canal, 11.30 p.m., 1 & about 100 metres from the road.
- 8) June 8, Mälkiä lock, 11. 45 p.m., 1 & about 200 metres from the road. The last two individuals were singing in a dense forest of deciduous trees.
- 9) June 9, Parikkala, 2.25 a.m., 1 3 in a farmyard near a lakeshore, some 20 metres from the road. There were alders, willows, and birches growing in the yard.

The above 13 observations on Acrocephalus dumetorum made by the authors have been compiled together with previously given observations in Fig. 2.

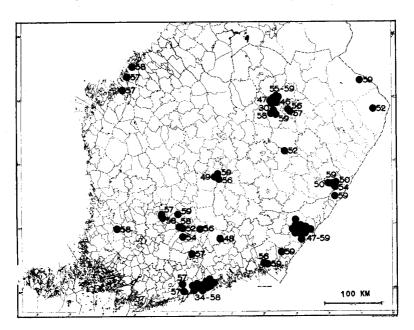


Figure 2. — The distribution of Acrocephalus dumetorum in Finland up to 1959.

The numbers beside the spots indicate the year for respective observations.

The method described above and applied on June 7—9 is a kind of line estimate. All individuals within hearing were noted down. Owing to lack of time, the exact distances of the birds from the road could not be ascertained. The estimated distances varied from 20 to 200 metres. The distance from which the song of Acrocephalus dumetorum can be heard with certainty must also remain an estimate. Nevertheless, this method should give us a fairly reliable idea of the

number of individuals of Acrocephalus dumetorum within earshot along the route, for it usually sings continuously at nighttime (also cf. Toivari 1950), and most other species are silent, especially round about midnight. Another advantage of the method is the fact that large areas can be examined in a few nights. On the other hand, the greatest possible number of individuals may perhaps not be found by this method because Acrocephalus dumetorum prefers the luxuriant habitats, which should be examined more thoroughly than it is possible to do from a road. Besides, the route largely followed the new highway, thus bypassing many inhabited areas in the vicinity of which the bulk of the favourable habitats are to be found. In this sense, the older roads and lanes would have proved better worth examining.

Five of the nine individuals found were near the main road (Miehikkälä, Lauritsala lock, Saima canal, Parikkala), and four in the vicinity of towns (Hamina, Lappeenranta). The number of individuals is rather small for drawing conclusions. By giving the line instead of an average width of 400 metres for example 50 kilometres, we could calculate the number of *Acrocephalus dumetorum* corresponding to the five individuals found on the route. This would give us a few hundred birds or an average of one bird per 15 or 20 square kilometres. Including the individuals found in Hamina and Lappeenranta, the average density would be roughly one male per 10 square kilometres.

Habitat and Song

The habitat descriptions connected with the observations indicate that Acrocephalus dumetorum mostly chooses its habitat in damp willow and alder groves and thickets with a luxuriant undervegetation and situated by brooks or lake shores. Since the habitats, sometimes very eutrophic, which are preferred by this species, are rather scarce in Finland, it is understandable that two, sometimes even more, singing males should have been found near each other (e.g. LINDEBERG in Punkasalmi 1954, 4—5 & &). As is well known, the same often applies to the Thrush Nightingale, too, whose habitat is similar to that of Acrocephalus dumetorum. Consequently, the song of a Thrush Nightingale could be heard, though not always at the same time, in at least six of the 13 places where Acrocephalus dumetorum was found by the authors. Observations made by Klockars (1944) in the Svir show that in the region where he found 15 Blyth's Reed

Warblers, there were also Thrush Nightingales (19 birds). Observations made in the neighbourhood of Helsinki and in Porkkala (PAATELA & HYTÖNEN) as well as some habitat descriptions in the literature (LEIVO 1945, 1946) indicate that Acrocephalus dumetorum and A. palustris live in approximately similar localities and are capable of singing quite close to each other, perhaps even of inspiring one another.

The song of Acrocephalus dumetorum is known in some respects to bear a close resemblance to that of the Marsh Warbler. It is no wonder that there has sometimes been some uncertainty or if mistakes have been made in the determination of the two species. Views have been expressed in the literature to the effect that the song of Acrocephalus dumetorum is more subdued and more delicate than the song of A. palustris (Leivo 1945). In a way this is true, for A. dumetorum sings in a more dignified and thus more reserved manner than A. palustris, which occasionally gets carried away by its rapid scale passages. It is to be noted, however, that in spite its delicate quality, the song of A. dumetorum is distinctly stronger and more audible than that of the Marsh Warbler.

Comparable Species

In addition to Acrocephalus dumetorum and A. palustris the authors have made observations on some other nighttime singers which favour habitats similar to those of Acrocephalus dumetorum, or whose habitats border on its territory. The most important and most interesting of these species are Luscinia luscinia, Locustella naevia, and Crex crex. The observations were made in 1955—57 (mostly Paatela & Hytönen) in the vicinity of Helsinki and in Porkkala; in 1958 (partly also S. Paatela), in the vicinity of Helsinki, and on the route Helsinki—Porkkala—Snappertuna; in 1959, June 2—5, in the surroundings of Helsinki and on the route Helsinki—Porkkala crossroads—Espooo—Helsinki. One individual of Luscinia found in Mäntsälä and one Locustella found 9 kilometres to the south of Lahti on June 9/10, 1959, were included in the following figures (\$\delta\$):

	1955	1956	1957	1958	1959
Acrocephalus dumetorum	1	1	1	1	
Luscinia luscinia	3	5	5	5	6
Locustella naevia		с. 13	16	15	7
Crex crex		c. 8	13	13	. 8

Observations on the above species during the trip made on June 7-8, 1959:

Luscinia luscinia, June 7/8: 38, 38, 39, 53, and 55 kilometres from Hamina; June 8/9: Lappeenranta, 2 individuals, Joutseno, and 5 as well as 6 kilometres from Imatra.

Locustella naevia, June 7/8: Hamina, and 42 kilometres from Hamina, 2 males; June 8/9: Lappeenranta, Saima canal, and 4 kilometres from Imatra.

Crex crex, June 7/8: Hamina, and 10, 55, and 107 kilometres from Hamina; June 8/9: 13 kilometres from Imatra.

Line I of the figures below gives the average number of individuals of the said species during trips made in 1955—1959. Line II gives the number of individuals found on June 7—8, 1959, between Hamina and Parikkala:

	Acrocephalus dumetorum	Luscinia lu sc inia	Locustella naevia	Crex crex
I	0.8	5	c. 10	c. 8
II	9	10	6	6

The voices of the Thrush Nightingale and the Corncrake carry much farther than the voice of Blyth's Reed Warbler, so it is probable that these species have been noted down from a larger area than Blyth's Reed Warblers. The figures thus do not give a clear idea of their proportionate occurrences. In spite of this, Blyth's Reed Warbler was observed during the trip almost as frequently as the Thrush Nightingale and more often than the Corncrake. The song of the Grasshopper Warbler is weaker than that of Blyth's Reed Warbler, but in calm weather it can be heard a couple of hundred metres away in open places, where the species is usually to be found. The area from which it has been recorded is presumably about as large as that of Blyth's Reed Warbler. Thus, on the basis of the figures given above, it seems obvious that Locustella naevia has a southern rather than a southeastern distribution in Finland. As we shift from Line I to Line II, the coefficient of the Grasshopper Warbler and the Corncrake is below one (approximately 0.6-0.7), while this coefficient of the southeastern Thrush Nightingale is 2 and that of Blyth's Reed Warbler about 10.

Summary

Acrocephalus dumetorum is rapidly expanding towards South and Central Finland: Only 3 observations within the present borders of Finland were reported in the 1930's, in the 1940's the number of observations was 10 (13 & & and 2 nests), and in the 1950's up to 56 (65 & & and 2 nests). The majority of the individuals observed seem to have been lone males, as can be concluded from their mobility and from the times of observation. A permanently nesting population of Blyth's Reed Warblers may, however, have settled at least in southeasternmost Finland.

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1) O.F. = Ornis Fennica; L.T. = Luonnon Tutkija.

Selostus: Viitakerttunen (Acrocephalus dumetorum) leviämässä maahamme.

Edellä on aluksi esitetty yhteenveto julkaistuista sekä muista tekijäin käyttöönsä saamista samoin kuin omista, tähän mennessä julkaisemattomista havainnoista koskien viitakerttusen esiintymistä maassamme. Havaintoaineisto kokonaisuudessaan osoittaa, että viitakerttunen on kaakosta voimakkaasti leviämässä etelä- ja keski-Suomeen: 1930-luvulta on havaintoja vain 3, 1940-luvulta 10 (13 & ja 2 pesää) sekä 1950-luvulta jo 56 (65 & å ja 2 pesää). Vaikka valtaosa tavatuista yksilöistä lieneekin ollut yksinäisiä koiraita, on toisaalta varsin todennäköistä, että ainakin maamme kaakkoisosissa nykyisin on jo vakinaisesti pesivä kanta.

Levinneisyystietojen lisäksi on kiinnitetty huomiota viitakerttusen biotooppiin, samoin kuin eräisiin muihin yölaulajiin (satakieli, pensassirkkalintu ja ruisrääkkä), jotka suosivat samantapaisia biotooppeja kuin viitakerttunen. Näistä vertailulajeista kiinnittyy huomio erityisesti pensassirkkalintuun, Locustella naevia, joka näyttää pikemminkin olevan eteläinen kuin selvästi kaakkoinen laji.

Über neue Futtergewohnheiten der Möwen an den Küsten Finnlands.

GÖRAN BERGMAN

Zoologisches Museum der Universität, Helsinki/Helsingfors

Nahrungserwerb und Populationsgrösse

Neue Futtergewohnheiten und einige gegenseitige Beziehungen folgender Möwen werden in diesem Aufsatz behandelt: Silbermöwe Larus a. argentatus Pont., Heringsmöwe Larus f. fuscus L., Mantelmöwe Larus marinus L., Sturmmöwe Larus c. canus L. und Lachmöwe Larus r. ridibundus L.

Eine gewaltige Zunahme der Möwen, insbesondere der Silbermöwen, ist aus sehr verschiedenen Gegenden des nordatlantischen Gebie-