

The status of the Charadriiformes in Bulgaria

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Introduction

Although Bulgaria lies almost mid-way between important wader stations in Rumania and Turkey, and might thus be expected to form an important "stepping-stone" on routes to and from Asiatic breeding grounds, no single work has yet been published on the status of waders in the country.

Most regional accounts of Bulgarian avifauna have been based on sporadic visits only and thus cannot detail wader status. Lowland areas documented are: Thrace (Boev et al., 1964); the Rose Valley (Donchev, 1977); the Dobrogea Plains (Petrov & Zlatanov, 1955); and the Varna coastline (Peshchev, 1967). The area of Burgas, which is still relatively rich in lakes and marshes, has been visited by many workers (e.g. Grössler, 1967; Königstedt & Robel, 1977; Kumerloeve, 1957; Robel, 1973), but the most important study of the area was by A. Prostov (1964), a work based on 15 years of research. Prostov gives migration periods for and outlines status of all Charadriiformes.

From September 1976 to June 1977, and from February to mid-April 1978, I was able to make regular counts of waders on Atanasovsko Ezero, the large "salines" north of Burgas (see Fig. 1) – certainly the richest wader station in Bulgaria. In addition, between March 1975 and April 1978 I gathered data from other sites, both coastal and inland.

The present paper tabulates results of the counts on Atanasovsko, lists incidental observations from this site and elsewhere and summarises the status of waders in Bulgaria, in so far as this can be deduced from the available literature, qualified by my own observations.

Methods

Atanasovsko lake, where the counts detailed in Tables 1 and 2 were made, is a large, sea-level (in parts, sub-sea-level) lake used for the commercial extraction of salt from sea water. Prior to 1903, it existed simply as a shallow lake; now it has a raised peripheral dyke, outside which runs a fresh-water canal, while inside, it is divided into varying sized basins by smaller dykes composed of mud framed within wood, or simply piled-up

mud. Water passes from the large basins into a series of smaller, square ones, from which the salt is extracted, by evaporation, in September. The deepest basins are no more than 2 metres, and many are less than 1 metre in depth. Mud depth varies, but is generally considerable. At all seasons there are areas of exposed mud, some of which is vegetated.

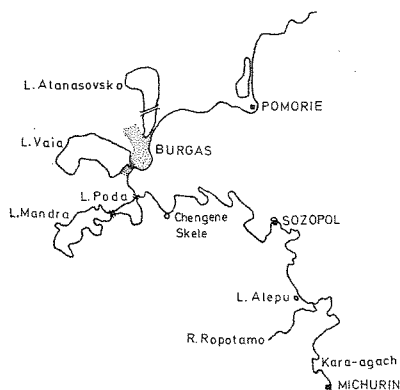


Fig. 1: Map of the Burgas area.
Scale 1 : 1 000 000

The SE corner of the lake runs alongside the sea, its S and SW ends fringe the town of Burgas, and its NE corner touches the foothills of the Balkan Mountains. There is a similar, but smaller lake, 15 kms. to the E, at Pomorie (see Fig. 1).

From 1.ix.1976 to 20.vi.1977 counts were made of all waders present on Atanasovsko weekly during main migration periods, at longer intervals in winter. Owing to an unfortunate temporary ban on my visiting the lake, counting was suspended from 15.v. to 20.vi.1977. From 5.ii. to 11.iv.1978, complete counts were made at weekly intervals.

The lake's large size, coupled with interruption of vision by tall dykes and hampering of visibility by fog and haze, necessitated counting on foot, following a standard route, chosen to avoid flushing large flocks onto uncounted "ground". Since the count of the N section of the lake took around 7 hours, the S part, conveniently divided off by the main Burgas-Varna road, was counted on the previous day. Such coverage, though not fully satisfactory, was the only form open to a single counter.

Optical aids used included a 20-60x.60 telescope and 8x.40 or 12x.50 binoculars.

	January		February			March			April			May		June	
	6/7	27/28	10/14	24/25	10/11	17/18	24/25	31/1	7/8	14/15	21/22	27/29	5/6	12/13	19/20
<i>Haematopus ostralegus</i>						1	34	2	8	5	5	5	9	22	7
<i>Vanellus vanellus</i>			233	333	305	641	106	241	86	147	108	66	89	71	—
<i>Charadrius hiaticula</i>							6			4		2	14	2	
<i>Charadrius dubius</i>				9	2	7	164	136	94	112	60	149	94	112	—
<i>Charadrius alexandrinus</i>	10			23	16	19	19	5	2	5	5	1	15	29	
<i>Pluvialis squatarola</i>	21	17	13	23	16	16	13	29		1			120		
<i>Pluvialis apricaria</i>													1	7	
<i>Arenaria interpres</i>															
<i>Gallinago gallinago</i>	3			40	64	166	170	245	97	94	43	20			
<i>Lymnocyptes minimus</i>						3	3	1	1	2	2				
<i>Numenius arquata</i>	90	49	69	49	62	34	63	68	19	10	12	7	3	5	2
<i>Numenius phaeopus</i>						1	1	1	2	2	1	1	5		
<i>Limosa limosa</i>				24	87	153	532	225	711	175	19	101	3	2	481
<i>Limosa lapponica</i>															
<i>Tringa ochropus</i>	1	1	2	1	4	3	2	5	37	66	2	46	28	15	1
<i>Tringa glareola</i>								14	2	2	5	4		2	1
<i>Tringa hypoleucos</i>															
<i>Tringa totanus</i>	38	91	87	210	768	662	724	421	85	12	5	7	2	6	1548
<i>Tringa erythropus</i>				1	2	4	12	77	266	233	365	379	288	87	46
<i>Tringa nebularia</i>		1	1		2	4	3	14	47	78	82	92	26	8	7
<i>Tringa stagnatilis</i>							2	4	152	111	100	37	6		35
<i>Calidris minuta</i>	4	4				2	6	10	32	8	8	368	1615	1609	
<i>Calidris temminckii</i>									1	3	3	423	26	2	2
<i>Calidris alpina</i>	720	436	109	182	214	290	719	998	743	688	325	404	3747	2129	3
<i>Calidris ferruginea</i>								1	4	7	6			12	
<i>Calidris alba</i>															
<i>Limicola falcinellus</i>															
<i>Philomachus pugnax</i>	4		4	73		25	140	510	2702	1693	3567	3559	1634	334	30
<i>Recurvirostra avosetta</i>	196	214	332	1036	1550	1955	2085	1916	2006	1576	1390	1376	—	—	—
<i>Himantopus himantopus</i>							3	45	80	89	108	59	83	131	—
<i>Phalaropus lobatus</i>													1		

Notes: Counts on 8/10 December incomplete; figures represent minima.
— indicates no count attempted, as many individuals incubating and thus invisible from count-points.

Table 2. Wader counts on Atanasovsko Ezero, Burgas - December, 1977 to April, 1978

	Dec.		Jan.			February			March			April			
	2	30	27	28/1	5/7	6/7	13/14	20/21	27/28	1	1	2	2	5	10/11
<i>Haematopus ostralegus</i>										1	1	2	2	5	13
<i>Vanellus vanellus</i>	355	8	37	56	46	600	337	404	413	282	255	107	109		
<i>Charadrius hiaticula</i>						1									
<i>Charadrius dubius</i>						2									4
<i>Charadrius alexandrinus</i>				8	6	7	19	27	105	157	220	234			
<i>Pluvialis squatarola</i>	32	30	41	17	33	45	42	76	55	13	22	9	2		
<i>Pluvialis apricarius</i>	37			3			195	1	6		6	6	2		
<i>Gallinago gallinago</i>	56	1	2	3	2	10	38	93	43	59	23	19	13		
<i>Lymnocyptes minimus</i>							8	10	3			1	1		
<i>Numenius arquata</i>	23	42	33	77	72	28	22	79	79	29	19	12	24		
<i>Numenius phaeopus</i>													2	12	
<i>Limosa limosa</i>	1	9	1			9	10	43	176	1018	1011	369	202	65	
<i>Tringa ochropus</i>						1	1	5	1	4	5	11	3		
<i>Tringa glareola</i>										2			27	33	
<i>Tringa hypoleucos</i>														1	
<i>Tringa erythropus</i>	414	79		44	80	99	435	705	692	1060	382	164	66		
<i>Tringa totanus</i>						1	1	4	4	8	31	81	147		
<i>Tringa nebularia</i>	4									3	2	13	14		
<i>Tringa stagnatilis</i>										2	2	4	8	65	
<i>Calidris minuta</i>						1	4	16	15	19	32	8	46		
<i>Calidris alpina</i>	800	430	710	925	750	834	895	1042	1188	358	482	903	815		
<i>Calidris ferruginea</i>														2	
<i>Philomachus pugnax</i>						3	11	101	193	400	254	489	577	545	648
<i>Recurvirostra avosetta</i>	1520	19	95	468	519	775	2156	1734	2557	1709	1726	1856	1862		
<i>Himantopus himantopus</i>									3	4	6	28	19		
<i>Glaucola pratincola</i>														1	

Note: Counts on 2 and 30 December and 27 January incomplete.

Results

Table 1 gives results of counts on Atanasovsko during 1976–1977. Totals given are for the N and S sections of the lake combined. Counts made on 8 and 10.xii.1976 were incomplete.

Table 2 gives results of full counts on Atanasovsko made between 5.ii. and 11.iv.1978, and includes figures from incomplete counts in December 1977 and January 1978.

Species accounts

Haematopus ostralegus, Oystercatcher

Described by Prostov (1964) as regular at Burgas, with migration dates of 15.viii. to 10.x., and 19.iii. to 10.iv. (1 late bird on 4.vi.1961), but without evidence of breeding. Boev (1962) recorded the species inland near Harmanli, on 28.iv.1962 and Boev et al. (1964) saw a pair there on 28.viii.1962. Robel (1973) saw a bird on 7.vii.1971 in the same area, and in 1973 and 1974 Ts.Petrov (1975) at last proved breeding, at Orizare, near Plovdiv. Donchev (1977) reported the finding of 2 downy young at Sokolitza in 1974. Coastal breeding season records were reported for May by Grössler (1967) and Harrison (1933); for May and June by Mountfort & Ferguson-Lees (1961); and for July by Boev (1962).

Away from Atanasovsko, I saw 1 at Kamchiya on 1.iv.1976, 11 at Durankulak (Blatnitsa) on 3.iv.1976 and 1 at Durankulak on 13.iii.1977.

On 14.v.1977 I found a nest with 3 eggs on a newly repaired mud dyke on Atanasovsko – the first breeding record for the Bulgarian Black Sea coast. 1 egg hatched on 1 June, the other 2 proving infertile. By mid-April 1978, a pair was holding territory on the same stretch of dyke.

Hoplopterus spinosus, Spur-winged Plover

One record only: 3 birds at Poda (Burgas) on 7.v.1960 (Hanzak, 1962).

Vanellus vanellus, Lapwing

Described by Patev (1950) as widespread in lowland and flat upland areas. Prostov (1964) gives migration periods of 10.x. to 8.xii. and March/April, and mentions that small flocks winter, an observation confirmed, for inland Bulgaria, by Donchev (1959, 1970, 1974, 1977) and Simeonov (1971) – with flocks of up to 50–60 birds.

I saw the following large flocks: c.900 near Sofia on 28.ix.1975; c.600 near Sofia on 28.iii.1976; c.400 at Ovcharitzta on 6.ii.1977; and c.3300 flying NW over Mandra at sunrise on 19.ii.1978.

It is still a widespread, though nowhere abundant breeding species on marshy and other rough ground, inland and coastal. Nesting on arable is apparently uncommon. My Atanasovsko 1977 breeding total was 16+ pairs (16 nests, all with 4 eggs, on sparsely vegetated mud-flats and islands).

Charadrius hiaticula, Ringed Plover

Described by Prostov (1964) as regular on passage from 22.viii. to 28.ix. and 21.iv. to 6.v. (late records on 31.v. and 4.vi). Recorded on passage on the coast during May and June by Donchev (1963), Grössler (1967) and Mountfort & Ferguson-Lees (1961).

My records indicate a later autumn passage, with peak in early October (see Table 1). In spring, a single on Atanasovsko on 7.iii.1978 was exceptionally early. The species is very rare inland.

Charadrius dubius, Little Ringed Plover

In Patev (1950) 's time, bred commonly on dry and gravelly banks of rivers inland and on similar ground on the Black Sea coast. It is described by Prostov (1964) as breeding commonly near Atanasovsko and Mandra, with autumn passage of 3–15.ix. (late records on 1 and 5.x.1959) and spring arrival from 26.iii. Though described as "relatively common" in the central and eastern Balkan Range (Donchev, 1974) and the Rose Valley (Donchev, 1977), elsewhere it is given as fairly uncommon by authors of regional avifaunas (e.g. Donchev, 1970; Prostov, 1963; Simeonov, 1967, 1971).

Up to 30 birds were on Atanasovsko in late October 1976 (see Table 1), while my earliest spring observation was on 9.iii.1978 on Atanasovsko (1). I found no breeding birds on the lake during 1975–1977 and very few in the Burgas area generally. My largest inland flock was 40+ at Yambol fish-farm on 8.iv.1978.

Charadrius alexandrinus, Kentish Plover

Described by Prostov (1964) as breeding commonly on Atanasovsko, and rarely elsewhere near Burgas, with main passage early September to 10.x. (a late record on 21.x.1958) and spring arrival 18–25.iii. Petrov & Zlatanov (1955) describe it as breeding commonly at Shabla and Durankulak, an observation contradicting Patev (1950) and unsupported elsewhere in the literature.

1976 autumn passage continued into November, and birds were on Atanasovsko during January/February in 1977 and 1978. Other winter observations were of 3 at Chengene Skele on 28.i.1978 and 2 near Sozopol on 19.ii.1978. Main spring arrival commenced around 20.iii.

In 1977, 48 breeding pairs were located on Atanasovsko, nests being mainly on dried-out mud and spits, though 15 pairs bred on a heaped-up mud-dyke among Little Terns *Sterna albifrons* and Avocets *Recurvirostra avosetta*.

Charadrius asiaticus, Caspian Plover

Patev (1950) quotes 1 record (Reiser, 1894), which he regards as doubtful.

Charadrius leschenaultii, Greater Sandplover

A single, almost certainly of this species, seen by A. Rinaldi and myself on Atanasovsko, 31.iii.1975.

Charadrius squatarola, Grey Plover

Patev (1950) gave migration periods of September/October and March to early June, while Prostov (1964) specified autumn passage dates as 11.ix. to 14.xi. (1 record 21.xii.1961), but had one spring record only: 22.v.1956. Reported from Atanasovsko during May/June by Grössler (1967), Harrison (1933) and Mountfort & Ferguson-Lees (1961).

Now regular in winter (see Tables 1 and 2 and the following: January 1976: Atanasovsko (1), Chengene Skele (1) and Pomorie (1); January 1977: Durankulak (5) and Chengene Skele (1). A record of 2 near Sofia on 24.ix. 1975 is apparently the country's first inland record.

Charadrius apricarius, Golden Plover

Prostov (1964) gives main passage dates as 18.ix. to 15.xi. (odd birds remaining to 20.xii.) and 16.iii. to 24.iv. Mountfort & Ferguson-Lees (1961) saw 1 at Vaia on 30.v.1960. Inland local avifaunas indicate comparative rarity (Donchev, 1977; Simeonov, 1968).

My Atanasovsko observations (see Table 1) mainly coincide with Prostov's, though during 1977/1978 I found birds wintering – on 12.ii.1978 at Mandra (7); on 24.ii.1978 at Shabla (43); and see Table 2. On 9.xi.1975, with D. Nankinov, I saw c.1000 at Kaliakra, and on 14.xi.1976 14 at Kranevo and 40 between Shabla and Kavarna. My only inland record is of 9 near Sofia on 29.x.1975.

Eudromias morinellus, Dotterel

Patev (1950) gave August-October as main passage period; Prostov (1964) has 1 record only, 6 at Mandra on 21.x.1958. Königstedt & Robel (pers.comm.)'s observation of a flock at Kaliakra on 24.ix.1976 is the only recent record I know of.

Arenaria interpres, Turnstone

Prostov (1964) gives passage dates of 1.iii. to 29.v. and 13–30.ix. Donchev (1975) shot 1 at Durankulak on 26.viii.1972, whilst Grössler (1967) saw 2 on Atanasovsko on 12.vi.1962.

In addition to my few study period records (see Table 1), I saw 15 on Atanasovsko on 24.v.1975 and 2 at Shabla on 14.xi.1976. The species is apparently regular, but in very small numbers.

Gallinago gallinago, Snipe

Bred, on Batashko marsh, in the last century (Reiser, 1894), but not recorded in more recent times, according to Patev (1950). Prostov (1964) gives first arrival date as 15.viii. for autumn (1 on 11.vii. 1959), passage lasting to 19.ix., and some birds wintering, with spring passage 9–21.iii. (latest record, 28.iv.1953). Wintering, inland and coastal, is reported by Donchev (1959, 1963, 1970, 1974, 1977), Johnson & Biber (1971), Peshev (1967) and Simeonov (1968, 1971). Jordans (1940) saw birds on Aldomirovtzi marsh on 29.iv.1938 and concluded that they bred there – as did Petrov & Zlatanov (1955) for the Dobrogea, on the strength of a male with highly developed testes shot at Slaveevo on 26.v.1953, a conclusion supported by a further record from Tolbuhin on 23.vii.1951. May records are reported by Donchev (1963) and Harrison (1933) and July and August sightings by Boev (1962).

The Snipe is common in winter on the coast (see Tables 1 and 2, and a record of 209 at Vaia on 30.xi.1976).

Gallinago media, Great Snipe

Common in Prostov (1964) 's time, with passage from 5.ix., some birds wintering, and 12.iii. to 17.iv. (latest record, 5.v.1952). Donchev (1963) gave 3 May records for the Sofia area; most regional avifaunas give the species as at least reasonably common, inland and on the coast.

Recently greatly declined, as reflected by an almost total absence of mention in recent (post 1970) studies. I saw 1 only (on 7.iv.1976, at Atanasovsko).

Lymnocyptes minimus, Jack Snipe

Described by Prostov (1964) as rarer than the 2 preceding species, with passage dates 20.x. to 27.xi. and 12–28.iii. Donchev (1963) and Simeonov (1968) give both April and winter records. Other regional avifaunas indicate widespread distribution, in small numbers.

I have one winter record – 1 on Atanasovsko, 6.i.1976. Tables 1 and 2 show regularity in spring, in the proportion to Snipe numbers reported by other authors.

Scolopax rusticola, Woodcock

Patev (1950) mentions occasional breeding records, mostly from the last century, but heavy passage during September–November and February/March, with odd birds wintering. Many authors confirm wintering (e.g. Donchev, 1959, 1970, 1977; Prostov, 1964, 1967). Breeding season sightings are given by Prostov (1964) for April, Paspaleva-Antonova (1965) for April and May, and Donchev (1959, 1974) for June.

My mid-winter coastal records are: 5.i.1976, Michurin (1); Sozopol (1); 27.i. and 13.ii.1977, Ropotamo (1).

Numenius arquata, Curlew

Described by Prostov (1964) as common on passage 15.viii. to 8.x., and 9.iii. to 12.iv. (late records on 17 and 22.v.), with odd birds wintering and some summering, without breeding. June Atanasovsko records are given by Mountfort & Ferguson-Lees (1961) and Robel & Königstedt (1977). The only inland records are from Boev et al. (1964) and Donchev (1970, 1977).

Regular, still, but not abundant, on Atanasovsko (see Tables 1 and 2). In addition, I saw 156 there on 6.i.1976 and 2–3 from 25–27.vi.1976.

Numenius phaeopus, Whimbrel

Patev (1950) quotes 3 records only, all from the Sofia area. The next mention in the literature is by Robel et al. (1972) – of “3 recent records on the coast, August–September”.

I saw Whimbrel fairly regularly on Atanasovsko: 1.v.1975 (3); 11.ix. 1976 (1); 7, 11 and 17.xii.1976 (1); 18 and 25.iii.1977 (1); 8.iv.1977 (2); 5.iv. 1978 (2); 11.iv.1978 (12). On 8.iv.1978 I saw 1 at Yambol.

Numenius tenuirostris, Slender-billed Curlew

Prostov (1964)'s records from the Burgas area (22.iii.1951, 19.ix.1958, 21.x.1951, 15.xii.1961 – all flocks of 4–7) are the most recent records for Bulgaria.

Limosa limosa, Black-tailed Godwit

Described by Prostov (1964) as common on passage, from 5.ix. to 8.x., and 11.iii. to 18.iv., with small groups up to 10.v. (a late record on 3.vi.1956). Presence on the coast in June is confirmed by Robel & Königstedt (1977): their record of 200 on Atanasovsko on 15.vi.1972 indicates a build-up of numbers during June comparable to that detected in most *Tringa* and Ruff *Philomachus pugnax*. Donchev (1977) reported birds in the Rose Valley on 7.vii.1974 (1) and on 4.viii.1971 (1), while Petrov & Zlatanov (1955), noting the species' presence at Durankulak at the end of June and in early July, mistook this early summer build-up for evidence of breeding.

First arrivals on Atanasovsko in springs of 1977 and 1978 were on 23 and 14.ii. respectively. From 25–27.vi., 160 were present there, and, inland, I saw c.2000 near Sofia on 28.iii.1976. Elsewhere inland, flocks of 10–40 were common on spring passage.

Limosa lapponica, Bar-tailed Godwit

Prostov (1964) mentions the country's first record, on 21.iii.1940, at Poda. Grössler (1967) saw 1 on Atanasovsko on 12.vi.1962; and Robel et al. (1971) report a record from Burgas on 22.viii.1969.

During 1976, I saw birds on 27 and 30.ix. (1 and 1), 1.x. (3), 14 and 21.x. (1 and 1) – all on Atanasovsko.

Tringa ochropus, Green Sandpiper

First recorded breeding in Bulgaria on 25.vi.1961, when a nest was found at Chirpan (Boev, 1962). Petrov & Zlatanov (1955) had previously claimed breeding in the Dobrogea, but offered no substantiation. Other authors give breeding-season records (e. g. Donchev, 1970, 1977; Mountfort & Ferguson-Lees, 1961), but the tendency for a build-up in numbers from June onwards, of passage birds, exemplified by Robel & Königstedt (1977) 's record of 20 on Atanasovsko on 26.vi.1973, is supported by Prostov's collection of specimens from June to August, which showed no ovary development. This author (1964) gives main passage dates of 17.viii. to 5.x., with odd birds wintering, and 11.iii. to 28.iv. Records of wintering inland are rare.

On 25.vi.1976 I saw 3 on Atanasovsko, and on 10.vi.1977 2 at Vaia. Away from Atanasovsko I have the following 1977 winter records: 9.i., Mandra (2); 10.i., Kamchiya (1); 21.i., Karaagach (2); and 22.ii., Ropotamo (1).

Tringa glareola, Wood Sandpiper

Prostov (1964) gives passage dates of 16.viii. to 18.ix. and 9.iii. to 18.iv. (with groups of 3–4 from late May to 3.vi.). Donchev (1974) gives the country's only winter record – 1 on 19.i.1958 near Teteven. The earliest spring record – 1 on 4.iii.1970, near Pirin – is given by Simeonov (1971). Presence on the coast in May is confirmed by Ferianc et al. (1965) at Burgas and Grössler (1967) at Nessebur, and June observations are reported by the last author (ibid.), Mountfort & Ferguson-Lees (1961) and Robel & Königstedt (1977) – the last seeing c.50 on Atanasovsko on 26.vi.1973. Inland records are frequent.

In my study periods, birds stayed into late October, and well into May (see Tables 1 and 2) while numbers built up again significantly from early June. On 21 and 25.v.1977 there were 3 and 1 respectively at Poda, but on 10.vi. there were 13 at Vaia.

Tringa hypoleucos, Common Sandpiper

Described by Patev (1950) as breeding commonly by streams up to a high altitude, though later authors indicate only widespread distribution, but small numbers (see Donchev, 1970, 1974, 1977; Prostov, 1964; Simeonov, 1968, 1971). Prostov (1964) gives passage period as 16.viii. to 17.ix. (a late record on 3.x.1959). Kumerloeve (1957) reported birds "up to the last third of October" at Burgas, and Donchev (1963) saw 1 at Shabla on 3.xi.1961.

The species is still widespread, but not abundant, breeding and on passage.

Tringa totanus, Redshank

Described by Patev (1950) as nesting in fairly large numbers, both on the coast and inland. Prostov (1964) gave main passage dates as mid-August to early November (many birds remaining till late December) and 7.ii. to 27.iv. Kumerloeve (1957) saw birds all winter on Atanasovsko, after a September/October peak of c.8000 *Tringa*. Grössler (1967) saw 46 on Atanasovsko on 12.vi.1962.

Redshank now breed in suitable sites, coastal and inland, in small numbers (Atanasovsko held 2 pairs only in 1977). Flocks remained throughout the winters of 1977 and 1978 (see Tables 1 and 2). On 11.i.1977 I saw 2 at Durankulak and on 27.i.1977, 19 at Chengene Skele and 1 at Alepu. A June build-up is indicated by Table 1, and by a record of c.600 on Atanasovsko on 25-27.vi.1976.

Tringa erythropus, Spotted Redshank

Prostov (1964) gives passage dates as mid-August to early November and 18.iii. to 18.iv. (4 on 5.vi.1962). Donchev (1963) reported the country's earliest spring record - on 5.ii.1962, at Trebich (1). Robel & Königstedt (1977) saw 50-60 on 26.vi.1972 on Atanasovsko. The species' occurrence inland is confirmed by Donchev (1977) and Simeonov (1968).

While my first spring records were earlier than Prostov's, the peak occurred outside his dates (see Tables 1 and 2). In 1977 there was a marked June build-up. My one inland record is of 5+ at Yambol on 8.iv.1978.

Tringa nebularia, Greenshank

Described by Prostov (1964) as regular but not numerous from 19.viii. to 21.x. (latest record, 3.xi.1961), and 11.iii. to 8.iv. (late records on 9.v.1963 and 3.vi.1956). Other May and June records are given by Ferianc et al. (1965), Grössler (1967), and Mountfort & Ferguson-Lees (1961). Donchev (1974, 1977) reports the only 2 inland sightings.

Birds were present on Atanasovsko on 6.i.1976 (3) and in mid-winter of 1977 and 1978 (see Tables 1 and 2). From 26-27.vi.1976 there were c.5 present, and a June build-up was noted in 1977. Inland, I saw Greenshank near Sofia on 13.iv.1975 (3) and 28.iii.1976 (1), and at 2 sites near Yambol on 8.iv.1978 (3 and 3).

Tringa stagnatilis, Marsh Sandpiper

Described by Prostov (1964) as regular (though far rarer than Redshank) 12.viii. to 20.ix. (latest record, 1.x.1948), and 18.iii. to 12.iv. (1 on 4.v.1953). June records are given by Mountfort & Ferguson-Lees (1961), Grössler (1967) and Robel & Königstedt (1977), the last mentioned seeing c.60 on Atanasovsko on 26.vi.1972. A much-quoted statement of Petrov & Zlatanov (1955) that the species "breeds commonly at Durankulak" is unsupported by documentation. Inland, the species is reported by Simeonov (1968) for the Sofia area, and Donchev (1977) for the Rose Valley.

I noted a June build-up in 1976 (3 on 25-27.vi.) and 1977 (see Table 1). On 10.vi.1977 there were 4 at Vaia. My records of 2 on 7.iii.1978 and 1 on 15.x.1976 are the earliest and latest for the country. My only inland sighting is of 3 at Yambol on 8.iv.1978.

Philomachus pugnax, Ruff

Prostov (1964) gives this as a common migrant from 27.viii. to 18.x. (latest record, 3.xi.1961) and 3.iii. to 2.v. (1 on 31.v.1956 and 1 on 8.iv.1957). There are numerous other May to early August records (e. g. Boev, 1962; Donchev, 1963; Mountfort & Ferguson-Lees 1961) and frequent inland passage sightings, with largest flocks of c.80, recorded by Donchev (1974, 1977). The same author (1977) gives February as the regular month of arrival in the Rose Valley.

In 1977 birds were on Atanasovsko in mid-winter, and arrivals in 1977 and 1978 began in February (see Tables 1 and 2). In 1978 I saw 16 by the roadside N of Burgas on 22.ii., and 23, also on a roadside, between Shabla and Durankulak on 23.ii. (A heavy frost had occurred on both nights.) On the latter date there were also 66 by the sea at Durankulak. My mid-May 1977 Atanasovsko totals were high (see Table 1) and on 26-27.vi.1976 I saw 12 there which, together with June 1977 totals (see Table 1), indicates a build-up of Ruffs in mid-June. My largest inland flocks were c.5000 near Sofia on 28.iii.1975 and 210 at Yambol on 8.iv.1978.

Calidris canutus, Knot

Robel et al. (1974) report the only 2 records to date from Bulgaria: 1 found dead on 2.viii.1966, and 2 seen on 7.ix.1968 - both records from Atanasovsko.

Calidris alpina, Dunlin

Given by Prostov (1964) as occurring from 17.viii. to late December (heaviest passage 5–13.ix.) and 17.iii. to 12.iv., with groups of 5–8 staying until early June. Mauersberger (1960) saw 50 on Batovo Lagoon on 24.v. 1959. Johnson & Biber (1971) saw 6 at Vaia, c.1000 at Atanasovsko and c.100 at Pomorie on 20.xii.1970. Records from inland are lacking.

Dunlin wintered on Atanasovsko in 1977 and 1978 (see Tables 1 and 2), and on 6.i.1976 I counted 210 there. January and February flocks of 2–70 were seen on the coast N and S of Burgas in 1976–1978. Inland, I saw the species near Sofia on 24.ix.1975 (1) and on 29.x.1975 (14), and at Yambol on 8.iv.1978 (18). No evidence of the June build-up detected in *Tringa* spp. was found in this, or other *Calidris* spp.

Calidris ferruginea, Curlew-Sandpiper

Described by Prostov (1964) as common, with main migration dates of 19. viii. to 27.ix. (4 on 5.x.1959) and 13.iv. to 18.v. (latest record, 29.v.1956). Late May and June flocks are reported by Grössler (1967), Mountfort & Ferguson-Lees (1961) and Petrov & Zlatanov (1955). Inland records, of flocks of under 10, are given by Simeonov (1968, 1971).

Abundant on Atanasovsko in my study, but for very restricted periods (see Table 1). My earliest records were 1.iv.1977 (1) and 11.iv.1978 (2).

Calidris minuta, Little Stint

Prostov (1964) gives passage dates of 18.viii. to 17.ix. (small groups remaining into December) and 6.iv. to 8.vi., with mass passage in May. Johnson & Biber (1971) saw 15 on Atanasovsko on 20.xii.1971, this suggesting wintering. Inland records are given by Donchev (1977) and Simeonov (1968, 1971).

I saw the species throughout winter 1976/1977 and my first sighting in 1978 was on 21.ii. (see Tables 1 and 2). Inland, I saw 16 at Yambol on 8.iv.1978.

Calidris temminckii, Temminck's Stint

Recorded 3 times only up to 1962: 2 collected by Heinrich, near Plovdiv, on 7.ix.1935 (per Jordans, 1940); 1 at Mandra on 27.v.1960 and 1 at Vaia on 30.v.1960 – "perhaps the same bird" (Mountfort & Ferguson-Lees, 1961); and 12 and 6 on Atanasovsko on, respectively, 7 and 12.vi.1962 (Grössler, 1967).

I saw the species fairly regularly on Atanasovsko: 30.iii.1975 (1); 30.v. 1975 (1); 29.viii.1976 (8); 2 and 8.ix.1976 (4); 5.iv.1977 (1); 25.iv.1977 (3); and 6.v.1977 (3). On 2.v.1975 I saw 3 at Poda.

Calidris alba, Sanderling

Described by Prostov (1964) as regular from 6.ix. to 20.x. (flocks of 20–50) with smaller groups recorded later, up to 9.ii. He gives no spring records. Donchev (1963) saw a maximum of 80 at Durankulak on 1.xi.1961. Grössler (1967) reported 1 at Atanasovsko on 7 and 12.vi.1962.

In addition to several winter records (at Sozopol, Durankulak and on Burgas Beach) I saw 12 on Atanasovsko on 12/13.v.1977.

Limicola falcinellus, Broad-billed Sandpiper

Described by Prostov (1964) as uncommon, with autumn passage 3–13.ix. (flocks of 50–60), but only 2 spring records – 13.v.1956 (6) and 17.v.1957 (number unspecified). Grössler (1967) reported 3 on Atanasovsko on 7.vi.1962 and 7 there on 12.vi.1962.

My only records are from autumn 1976: 7 on 31.viii., 45 on 2.ix., 1 on 16.ix. and 13 on 17.ix. – all on Atanasovsko. I know no record from inland.

Recurvirostra avosetta, Avocet

Described by Prostov (1964) as breeding at Atanasovsko, and in small numbers at Mandra, Vaia and Alepu; he gives passage dates of 30.ix. to 19.x. (with November/December observations suggesting wintering). Kumerloeve (1957) mentions a complete absence of birds after early September. Johnson & Biber (1971) saw 50 on Atanasovsko on 20.xii.1970. The only inland records are from near Yambol (1) on 9.x.1962 (Boev et al., 1964) and from Cherni Osum (1) in December 1953 (Donchev, 1974).

Mountfort & Ferguson-Lees (1961) estimated the Atanasovsko breeding population at 500–750 birds. They proved breeding at Vaia (25 birds seen) and suspected it at Pomorie (25 birds) and Mandra (12 birds).

Avocets now winter in some numbers on Atanasovsko (see Tables 1 and 2; and 438 on 6.i.1976). I saw 2 at Alepu on 21.i.1977; 1 at Shabla on 23.ii.1978 and 16 at Kamchiya on 24.ii.1978. Inland I saw 4 near Sofia on 16.iii.1975 and 5 at Yambol on 8.iv.1978.

Between 1–15.v.1977, 725 nests were located on Atanasovsko. A sudden storm swamped 60 % of all nests, those most affected being on low, narrow, wood-framed dykes. Further losses were inflicted by gypsy egg-gathering (an annual occurrence), weasels, rats and foxes.

Himantopus himantopus, Black-winged Stilt

Given by Prostov (1964) as breeding on Atanasovsko and less commonly at Mandra and Vaia. He gives passage dates of 2–21.ix. (1 on 11.x.1948), with spring arrival commencing 19–22.iii. Patev (1950) mentions breeding near the Danube, and Petrov & Zlatanov (1955) described the species as

breeding commonly at Durankulak and Shabla. Mountfort & Ferguson-Lees (1961) estimated Atanasovsko breeding numbers at c.100 birds, with 30 at Vaia and 20 at Pomorie. At Mandra they saw 50+ birds on 27.v.1960, but on 31.v. there were only 4–5 pairs. Donchev (1977) reports 1 young bird caught at Sokolitza on 25.v.1974, while on 4.vii.1974 he saw 7 birds there, including juveniles. The species thus breeds inland, though it is rare there.

My earliest and latest records are 3 on Atanasovsko on 9.iii.1975 and 1 at Poda on 6.xii.1976. In 1977 22+ pairs bred on Atanasovsko, chiefly on the shallow, muddy fringe of the lake. A gathering of 150–200 migrants/non-breeders at Poda on 17.v.1977 recalls Mountfort & Ferguson-Lees's observation at Mandra (see above).

Phalaropus fulicarius, Grey Phalarope

Recorded once only, by Donchev (1967), who shot an adult hen at Shabla on 17.xii.1960.

Phalaropus lobatus, Red-necked Phalarope

Boev (1957) cites 2 museum specimens: September 1930, Karaboasko Marsh, and spring 1948, near Pleven. Kumerloeve (1956) saw a maximum of 9 between 7–17.ix.1941 on Atanasovsko, and Donchev (1975) shot 1 at Durankulak on 26.viii.1972. Ts. Petrov (pers. comm.) shot 1 near Plovdiv on 27.ix.1977.

I saw the following on Atanasovsko: 3 on 10.ix.1975; a maximum of 5 from 29.viii. to 19.ix.1976; 1 on 5.v.1977. At Pomorie on 4.ix.1976 I saw 1 also.

Burhinus oedicnemus, Stone-Curlew

Described by Patev (1950) as breeding "uncommonly" inland, more often near the coast, but Prostov (1964) called it a very rare breeding species in his area. He gave passage dates of 15.ix. to 17.x. (1 record on 8.xi.1946). Robel et al. (1972) describe it as breeding fairly commonly on the Bulgarian Dobrogea, thus confirming Petrov & Zlatanov (1955). July records from Harmanli are reported by Boev et al. (1964) and Robel (1973); the latter saw the species in July, E of Kurdzhali. Donchev (1977) recorded several birds near Muglish on 18.viii.1974. These inland records suggest breeding.

On 6.v.1976, with P. Simeonov and Dr. I. Vatev, I saw a pair on stony ground 10 kms N of Sofia. My only autumn 1976 Atanasovsko record was on 31.x. (1). Recent records indicate sporadic distribution, numbers reaching moderate level only in Dobrogea.

Glareola pratincola, Collared Pratincole

Patev (1950) gave as breeding mainly near the Danube and on the coast, but Prostov (1964) never proved breeding in his area, and had only 1 breeding season sighting, 1 bird on 31.v.1956. His passage dates are 28.viii. to 26.ix. and 22.iv. to 5.v. Harrison (1933) saw 20 on Atanasovsko on 13.v.1932, and Mountfort & Ferguson-Lees (1961) saw 4 there on 1-3.vi.1960, as well as 4+ at Mandra and 5 at Vaia. On 15.vi.1972 Königstedt & Robel (1977) saw 12 on Atanasovsko; and these authors (ibid.) give the following records from the Dobrogea coastal strip for June 1972: c.10 pairs S of Durankulak, with a further 13 individuals; 4 individuals at Shabla; 5 pairs NW of Kavarna; odd individuals NE of Kavarna; and 12 N of Rusalka. Donchev (1977) gives the only recent inland breeding record: 4-5 pairs reported from Sokolitzha, in summer 1974.

My earliest record was 1 on Atanasovsko on 11.iv.1978. Birds bred near Burgas as follows: at Vaia in 1976 (numbers unknown) and in 1977 (c.8 pairs, 4 nests found); at Poda in 1977 (c.4 pairs, 1 nest); at Atanasovsko in 1976 (maximum of 10 pairs, 8 nest found) and 1977 (5 pairs, 3 nests found). On 24.vi.1976 c.40 birds gave wing-dragging on the parched mud bed of a dried out pool at Poda, and in mid-June 1977 8 performed similar antics on a muddy islet on Atanasovsko. In neither case was breeding taking place.

Glareola nordmanni, Black-winged Pratincole

Recorded twice since Reiser's record of 1 bird at Svishtov on 27.v.1893 (quoted by Patev, 1950): 2 pairs at Dolno Ezerovo, Burgas, on 30.v.1964 (Paspaleva-Antonova, 1965); and 1 shot at Durankulak on 28.viii.1972 (Donchev, 1975).

Wader distribution in Bulgaria and the significance of Atanasovsko

The paucity of Bulgarian wader records from sites other than Atanasovsko may be explained variously. Major river estuaries are lacking in the country; most lakes are deep and without muddy shores (e.g. Varna and Mandra Lakes and all inland reservoirs) or are polluted (Vaia); and once extensive marshlands have been reduced to minimal dimensions (e.g. Aldomirovtsi, Straldzhensko). In addition, the Plovdiv area rice-fields and the increasing network of inland fish-farms have received little attention from ornithologists.

My records from Yambol fish-farm, and Donchev (1977) 's from Sokolitzha fish-farm, suggest that this comparatively new biotope attracts considerable numbers of passage migrants. Conditions on drying out and newly flooding basins resemble those on old-fashioned sewage farms. Where fish farms

occur in the middle of extensive areas of well-drained arable land, their significance for passage waders must be accentuated.

With their peculiar constitution, Atanasovsko and Pomorie "saltings" are probably the only major wader station in the country. The closest significant wader stations are the Sinoie-Techergiol complex in Rumania, the Meric/Evros delta on the Graeco-Turkish border, Bujuk Cekmece on the Sea of Marmora, and Terkos Golu on the Black Sea coast. The distances separating Atanasovsko from these sites must make it a refuelling station of international importance.

The Mid-June build-up of *Tringa*, etc.

Numbers of most *Tringa*, Black-tailed Godwit and Ruff, after a falling off by mid-May, again build up during June. This phenomenon was particularly marked with Redshank and Black-tailed Godwit. Whether these birds are late (non-breeding) migrants or, as seems more probable, early returning failed breeders or non-breeders, remains unresolved. However, the presence of Black-tailed Godwit and Wood Sandpiper at Durankulak in June is probably a reflection of this late spring build-up, not, as Petrov & Zlatanov (1955) supposed, evidence of breeding. This may also apply to Marsh Sandpiper status, as interpreted by these authors.

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Summary

Results are given of counts of Charadriiformes on Atanasovsko Lake, Burgas, from September 1976 to June 1977 and February to mid-April 1978, along with scattered observations from other coastal and inland sites. Wader records in the literature are reviewed, and current status is discussed. The importance of Atanasovsko as a "refuelling station" is stressed.

A mid-June build-up of *Tringa*, Ruff and Black-tailed Godwit on the coast is described; previous statements that Black-tailed Godwit and Wood Sandpiper probably breed in NE Bulgaria are ascribed to misinterpretation of this phenomenon.

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