

# NOTES ON THE BIRDS OF THE LOWER NERETVA VALLEY, YUGOSLAVIA

by

BRYAN L. SAGE

## INTRODUCTION

This paper is based on observations made by the writer and a party of ornithologists who visited the Neretva Valley from 1st-14th September, 1963. During this period we recorded over 160 species. I am particularly grateful to the following members of the party for notes and records.—A. BURROWS, R. BURROWS, J. G. CHIPPERFIELD, M. GAUNTLETT, and G. C. GORE.

The *Neretva River* enters the Adriatic about 95 kilometres NW of *Dubrovnik* on the *Dalmatian coast*. The area defined as the Lower Neretva Valley is approximately that lying between Gabela and the coast, and consists of the predominantly marshy floor of the valley and the surrounding mountains which rise to a maximum of about 700 metres. This lower section of the valley was formed by the sinking of the Adriatic coast after the Ice Age; this formed a shallow bay which in the course of time became silted up by alluvial deposits and clothed with marsh vegetation. The whole area lies in the Karst region of Bosnia-Herzegovina. In autumn and winter the prevailing winds are from the east and north-east, in spring the west and south-west, and in summer the west. Snow rarely falls, much flooding occurs in the winter, and in summer there are frequently periods of severe drought.

Near Gabela lies the famous State Reserve of the Hutovo Blato, an important haunt of wildfowl and other birds. In past years the extent of flooding was much greater than is now the case. In 1948 the area of marshland was given as about 16,300 hectares, and arable land as 2,000 hectares. Unfortunately, although the Hutovo Blato remains largely untouched, vast changes have been taking place in the remainder of the area. Some years ago the lower reaches of the Neretva River were canalised and only a few isolated arms of water remain to indicate the original course. Widespread drainage operations are still in progress and as a result the areas of permanent marshland are being steadily reduced by reclamation for cultivation. This has had the inevitable effect of reducing the numbers of marshland birds, and certain species which formerly bred no longer do so. Bags of wildfowl have also

decreased in recent years. This steady decrease of wetlands is going on all over Europe, with the result that the areas that remain become even more important as bird habitats. There are a few papers in the Yugoslavian literature, mainly in Serbo-Croat, dealing with certain aspects of the ornithology of this most interesting area, but there is very little literature in other European languages. The most important paper is that by RUCNER (1954) which lists 204 species for the Lower Neretva Valley. Further short papers (RUCNER 1958, 1963) bring the total number of species recorded in the area to 287. Our observations in the autumn of 1963 added 7 new species bringing the total to 294, this does not include our record of a possible Marsh Warbler. In addition D. D. HARBER saw what he is certain was a Tawny Eagle *Aquila rapax* at the Hutovo Blato on 18th April, 1962. There is little doubt that more intensive observations during the periods of spring and autumn migration would add more species to this list.

#### HABITATS IN THE AREA

In the long paper by RUCNER (1954) two main habitat divisions with nine subdivisions are recognised, and for detailed ecological data this paper should be consulted. In the present less exhaustive treatment two main habitat divisions are recognised, (1) the mountainous areas, and (2) the lowlands.

##### (1) *The Mountains*

The mountains surrounding the lower Neretva Valley provide a range of habitats varying from the more or less bare upper regions largely devoid of vegetation, and in places with almost vertical rock faces and cliffs, through low scrub to the pinewoods on the lower slopes. The area lies just within the evergreen region of the Mediterranean and has a characteristic vegetation of deciduous and evergreen trees and a variety of aromatic shrubs.

It would appear that the original and once widespread natural woodland was primarily Oak *Quercus pubescens*, and some small areas of this survive in association with Ash *Fraxinus ornus*, Maple *Acer monspessulanum*, Hornbeam *Carpinus orientalis*, and some Turkey Oak *Quercus cerris*. Examples of this type of woodland occur at Prud and in the Glusci Valley. In the latter locality there are some quite extensive stands of the evergreen Jasmine Box *Phillyrea media*, a very interesting habitat. The woods on the lower slopes of the mountains are primarily of Aleppo Pine *Pinus halepensis*, whilst here and there the Cypress *Cypressus occidenta-*

*lis* is dominant. The Stone Pine *Pinus pinea* is of much less frequent occurrence.

(2) *The Lowlands*

The low-lying areas of the Neretva Valley consist of a mixture of marshes and lakes, water meadows, land reclaimed for grazing and cultivation, riverain scrub and woodland, and the estuary itself. The major area of marsh and lake with the usual luxuriant marsh vegetation of reeds and associated plants is the Hutovo Blato and the Deransko Jezero. The area of water is greater in the winter due to flooding and is then an important haunt of wildfowl and other birds. Along the Neretva River and its tributaries occurs the usual riverain flora with *Salix*, *Populus* and other deciduous species. Sandy or shingly beaches and islands, and sections of almost vertical river bank occur at intervals. The smaller areas of marsh and swamp are scattered about over the floor of the valley. Associated with these are water meadows and more or less waterlogged grazing and hayfields. Most of the cultivated areas and their associated villages are reclaimed marshland. The cultivated crops include maize, grapes, peppers and other vegetables, and figs. Many of the fields are bordered by ditches full of water and a luxuriant vegetation of reeds and sedges etc., and *Salix* species occur in fair abundance. Finally there is the estuary of the Neretva, an extensive area of sand and mudflats, and typical estuarine vegetation. Although, as stated earlier, there has been a great deal of drainage and reclamation of the marshes in the Neretva Valley, the water table is not far below the surface. As a result of this flooding occurs quite readily although it may only be of short duration. During the period of our visit there was a very heavy storm with torrential rain following which many of the previously dry fields had an inch or so of water on them. At one place near Glusci these flooded meadows attracted literally hundreds of Yellow Wagtails *Motacilla flava* spp.

SOME REMARKS ON MIGRATION

The study of migration in this area during a comparatively short visit is made slightly difficult by the fact that it is not always easy to distinguish true migrants from local breeding stock in several instances. In addition a number of the species that we recorded—Stock Dove, Wryneck, Blue Tit, Coal Tit, Wren, Stonechat, Black Redstart, Robin, Moustached Warbler, Chiffchaff, Meadow Pipit, Starling, Serin, and Crossbill—are, according to the literature, primarily winter visitors to

the area. This being so it is impossible to say with certainty whether our records refer to migrants passing through the area, or to the vanguard of the winter visitors. A great deal of further study is required in this area before any detailed account of the migration pattern, particularly in the autumn, can be made. Therefore, only a few selected species are discussed in this section.

So far as the Hirundines are concerned it can be seen from the Systematic List that whilst Swallows were recorded in large numbers, we saw only very small numbers of Sand Martins and even fewer House Martins. This is in accordance with the data discussed by MOREAU (1961), where it is shown that the latter species probably migrates at a great height. Whilst the Golden Oriole breeds in the Neretva Valley, many of the individuals we saw were certainly migrants. This is a species that moves south-east in the autumn, and MOREAU (1961) suggests that its frequent occurrence in Tunisia and Tripoli at this time of the year is due to birds crossing from Italy and Dalmatia. The autumn movements of the Icterine Warbler are somewhat of a mystery, and it is comparatively rare in all sectors of the Mediterranean at this time. It is, therefore, interesting that we found this species to be quite abundant in the Metkovic area in September, where it is not a local breeding species. Our single record of the Barred Warbler is also interesting, as this is a species which the accumulated evidence suggests moves a great distance eastwards in the autumn from its westernmost breeding areas, or possibly makes very long continuous flights. Similar remarks apply also to the Lesser White-throat, which appears to cross the Mediterranean mainly at its eastern end. But as MOREAU (1961) has said, some at least must cross the more westerly sectors. The Wood Warbler is another species which is believed to make very long unbroken flights in the autumn. It is virtually unrecorded at this time in well documented places such as Malta and Crete, but BATESON & NISBET (1961) found it not uncommon in eastern Greece in the autumn of 1960. At Metkovic we found it the most numerous and widespread *Phylloscopus* species. Another species that makes a lot of easting in the autumn is the Red-backed Shrike which we also found numerously at Metkovic, far more so than could be accounted for by the local breeding stock. This is well in accordance with the general migration pattern, for it is common in autumn in Greece, Crete, Cyprus, the Cyclades, and from Cyrenaica to Egypt. On the other hand records from west of Cyrenaica in autumn are few and far between. The migration pattern for the Woodchat Shrike is much less clear, and it is thought that there is a south-westerly tendency

in autumn. This species does not breed in the Neretva Valley and our records clearly refer to migrants. The comparative scarcity of this species on the southern side of the Mediterranean in the autumn is probably due to their making long unbroken flights. Generally speaking the winter quarters of this species lie due south of the breeding areas.

#### DISCUSSION OF THE SYSTEMATIC LIST

##### (1) *Species new to the area*

Bonelli's Eagle is a species that does not breed in Yugoslavia, but does so in southern Italy and Greece. Our one definite record refers to an immature bird which presumably indicates a wanderer from one of the breeding areas, most probably from Italy. The single record of a Greater Black-backed Gull in the Neretva estuary is interesting, and this area would appear to lie outside the normal non-breeding range of this species. In the case of the Savi's and possible Marsh Warblers, Yugoslavia lies within the breeding range of both species and the lack of previous records from the Metkovic area is surprising in view of the existence of plenty of suitable habitat. Our records must presumably refer to migrants en route for the winter quarters in East Africa. These comments would seem to apply also to the Barred Warbler. The record of Spectacled Warblers is also of considerable interest and is apparently the first for Yugoslavia. This species has a restricted distribution in the Mediterranean and is known to be partially migratory. It seems probable that our record refers to post-breeding dispersal across the Adriatic from Italy, a similar case to that of the Bonelli's Eagle mentioned earlier. It is surprising that Bonelli's Warbler has not been recorded previously from Metkovic, particularly as the race *Phylloscopus bonelli orientalis* breeds in Hercegovina. The record of Bearded Tit may well be the first, but on the other hand it could occur quite regularly in the vast reed beds of the Hutovo Blato and remain undetected.

##### (2) *Species rarely recorded in the area*

Taking the three papers by RUCNER (1954, 1958, 1963) as the basis for comparison there are about 15 or so species which could apparently be classed as being of rare occurrence in the area. There is little doubt that in the case of a number of these, such as the Spotted Redshank, Little Stint, Dunlin, Little Gull, and Common Tern, the lack of records is primarily due to the paucity of observers at the appropriate seasons. There are, however, a few species for which there are apparently no records at all later than those mentioned in REISER (1939). The records of two of the raptors seem to call for comment. So far as can be traced

the only previous record for the Goshawk is that listed by REISER of one seen at the Hutovo Blato in January 1919. This seems extraordinary in view of the fact that it breeds widely in Yugoslavia, and that plenty of suitable habitat exists in the Metkovic area. The same comments apply to the Honey Buzzard which is mentioned by REISER on the authority of F. LANZA. Even if this species does not breed in the area it must surely occur on migration, but it is very odd that the behaviour of the birds we saw did not, in some cases, suggest that they were migrants from elsewhere. In the case of the Lesser Black-backed, Common, and Mediterranean Gulls scarcity of previous records is curious, especially as the Neretva estuary lies well within the normal non-breeding range of all three species. REISER quotes records of the Lesser Black-backed Gull in October 1893 and the Common Gull in December 1888 from the Hutovo Blato. The Mediterranean Gull was seen at the Hutovo Blato in March 1906, and G. A. WARBURG saw one in the Neretva estuary in May 1963. The only previous mention of the Rock Thrush appears to be that made by REISER on the authority of F. LANZA. Possibly the most interesting case is that of the Olive-tree Warbler. According to REISER it was recorded at Mlinister in June 1907, but there is no further mention of it in the literature relating to the Neretva Valley. In late May 1963, however, G. A. WARBURG saw one carrying nesting material near Metkovic, and we saw three birds in September the same year. If this species is indeed breeding in the Metkovic area then this would constitute its northernmost limit at present. This could well represent a recent extension of range.

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#### SYSTEMATIC LIST

Species known to breed in the *Lower Neretva Valley* are indicated with an asterisk (\*); those suspected to breed, but for which definite evidence is lacking, are indicated with an asterisk and a question mark (\*?). Breeding species not observed by us are included in square brackets []. The provisional list of breeding species amounts to 87, all but 8 of these were observed by us in the period *1-14 September 1963*.

*Gavia arctica*. Black-throated Diver—One was seen in the river estuary on 11 September. There appear to be only three previous records of this species, one on 30 November 1952, one shot on the Hutovo Blato on 22 November 1961, and one in the estuary in May 1963 seen by G. A. WARBURG.

\* *Podiceps cristatus*. Great Crested Grebe—At least 7 on the Deransko Jezero on 13 September, all in winter plumage.

*Podiceps nigricollis*. Black-necked Grebe—At least 3 on the Deransko Jezero on 13 September.

\* *Podiceps ruficollis*. Little Grebe—Present on most still waters in the area, and also on tributaries of the Neretva. Very numerous on the Deransko Jezero where more than 100 were counted on 13 September.

*Phalacrocorax carbo*. Cormorant—A flock of 8 were present in the estuary on 11 September.

\* *Phalacrocorax pygmaeus*. Pygmy Cormorant—A total of 100-116 of this species were counted on the Deransko Jezero on 9 September. Assuming an average brood of 4 per pair, this would give a breeding population of roughly 20 pairs. Local observers say that this bird has decreased. H. E. DRESSER visited the area in 1902 with OTHMAR REISER and recorded several hundred breeding pairs on the Deransko Lug, a lake that does not now exist.

\* *Ardea cinerea*. Heron—The least common of the herons and generally seen singly. On 6 September 5 flew over the Glibusa Marshes, and on 9 September a total of 12 were seen in the vicinity of the Deransko Jezero.

\* *Ardea purpurea*. Purple Heron—In addition to what were assumed to be local breeding stock there was evidence of some passage movement. On 7 September at 17.30 h a flock of 36 in V-formation passed to the SE at a height of about 1200 ft., and at 18.00 h another flock of 25 in V-formation passed over in the same direction. At 04.30 h on 8 September a flock of 25 in V-formation passed low to the SE in torrential rain. On 10 September parties of 20 flew W. over the marshes near Opuzen at 18.37 h and 18.43 h, respectively. On 9 September about 50 were counted along the Gluka River and on the Deransko Jezero.

\* *Egretta garzetta*. Little Egret—Small numbers were seen regularly on the local marshes and occasionally flying up the Neretva River, for example, flocks of 16 and 9 on 2 September. On 9 September about 20 were present on the Deransko Jezero. The only apparent evidence of migration were single birds with the flocks of Purple Herons flying SE on 7 and 8 September. There is certainly considerable spring migration as G. A. WARBURG saw hundreds in marshy fields near Gabela in May 1963, and it is now regarded as a rare breeding species locally.

\* *Ardeola ralloides*. Squacco Heron—Probably the most numerous breeding heron in the area as G. A. WARBURG saw many on the Hutovo Blato in mid-May 1963. We found it numerous in September with juveniles predominating. On 9 September there were about 90 along the Gluka River and on the Deransko Jezero, one was watched eating a tree frog (*Hyla*).

\* *Nycticorax nycticorax*. Night Heron—Very few seen; an adult and an immature by the Neretva, and a flock of 15 roosting in Aleppo Pines on 7 September; 2 by the Gluka River and 2 more on the Deransko Jezero on 9 September, and 2 at the former locality again on 13 September.

\* *Ixobrychus minutus*. Little Bittern—Up to 2 were seen by the Neretva and Gluka Rivers on several dates.

\* *Botaurus stellaris*. Bittern—One was seen flying over the Neretva River on 1 September, and another over the Gluka River on 13 September.

*Ciconia ciconia*. White Stork—One at Metkovic on 11 and 13 September was probably the same bird.

\* *Anas platyrhynchos*. Mallard—Small numbers seen on the Gluka River, Deransko Jezero, Hutovo Blato, and in the river estuary on various dates. A flock of 20 were noted over the Glibusa Marshes on 8 September.

*Anas crecca*. Teal—A flock of 40 were seen over the marshes near Narona on 3 September, and there were at least 35 on the Deransko Jezero on 13 September.

*Anas querquedula*. Garganey—There were 5 at the Hutovo Blato on 3 September; at least 10 on the Deransko Jezero on 9 September, and 6 on 13 September; about 10 in the Neretva estuary on 11 September.

*Anas strepera*. Gadwall—A party of 5 on the Deransko Jezero on 9 September.

*Anas penelope*. Wigeon—A pair on the Deransko Jezero on 13 September.

*Anas clypeata*. Shoveler—There were 4 at the Hutovo Blato on 3 September and at least 8 on the Deransko Jezero on 9 September.

*Netta rufina*. Red-crested Pochard—Two at the Deransko Jezero on 9 September and 4 on 13 September.

*Aythya fuligula*. Tufted Duck—A flock of 10 on the Deransko Jezero on 9 September, but only 4 on 13 September.

*Aythya ferina*. Pochard—A party of 6 on the Deransko Jezero on 9 September, and a flock of 21 (17 males) on 13 September.

\* *Aythya nyroca*. Ferruginous Duck—On 9 September a party of 5 were seen on the Gluka River and about 20, including some juveniles, on the Deransko Jezero.

*Oxyura leucocephala*. White-headed Duck—A female or an immature bird was seen on the Deransko Jezero on 9 September. This species is a winter visitor to the area.

\* *Neophron percnopterus*. Egyptian Vulture—One was seen over the mountains above Matijevic on 2 September; a total of 6 over the hills above the Glibusa Marshes on 3 September; one near Metkovic on 7 September; and one over the Hutovo Blato on 9 September.

\* *Gyps fulvus*. Griffon Vulture—Odd birds seen on several dates, including 2 over the Glibusa Marshes on 3 September and 2 near the town on 7 September. On 9 September about 6 were seen in the vicinity of the Hutovo Blato and the Deransko Jezero.

*Aquila chrysaetos*. Golden Eagle—Two immature birds were seen over the hills near the Glibusa Marshes on 3 September.

*Hieraetus fasciatus*. Bonelli's Eagle.—An immature bird was seen over the hills near Dracevo Doljane on 8 September.

*Buteo buteo*. Buzzard—One at Vid on 12 September, and another over Grudine on 13 September.

*Accipiter gentilis*. Goshawk—One was seen at a considerable height near Dracevo Doljane on 7 September, and another near the Deransko Jezero on 13 September

*Pernis apivorus*. Honey Buzzard—Two near Vastela on 2 September rose in a thermal and disappeared to the SE. Single birds were seen in the vicinity of the pinewoods above Metkovic on several dates, and on 13 September there were at least 3 at Vastela. One was seen near the Hutovo Blato on 9 September, and 2 near Dracevo Doljane on 12 September.

[\* *Haliaeetus albicilla*. White-tailed Eagle—Not seen.]

\* *Circus aeruginosus*. Marsh Harrier—A pair were seen on the Glibusa Marshes on 3 and 12 September. At Deransko Jezero a pair were seen on 9 September and a single bird on 13 September.

*Circus macrourus/pygargus*. Pallid/Montagu's Harrier—An immature bird was present at the Przine Marshes on 12 September.

\* *Circaetus gallicus*. Short-toed Eagle—The most numerous raptor in the area, up to three or four being recorded daily.

*Falco subbuteo*. Hobby—An adult at Vastela on 2 September and an immature on 6 September. One near Narona on 3 September, and another at Dracevo Doljane on 5 September.

*Falco peregrinus*. Peregrine Falcon—Single birds over the Neretva River near Ada Atr on 1 and 5 September, and 2 on 7 September. One near the Kravice Waterfalls on 5 September, and one near Metkovic on 11 September.

\* *Falco biarmicus*. Lanner Falcon—Three in the air together over the hills above the Glibusa Marshes on 3 September, and one near Vid on 12 September.

*Falco vespertinus*. Red-footed Falcon—A male near Grudine on 10 September.

\* *Falco tinnunculus*. Kestrel—A female in the hills at Dracevo Doljane on 12 September, and one over the Glibusa Marshes on 7 September.

\* *Alectoris graeca*. Rock Partridge—Although a not uncommon resident in the Metkovic area this species is very difficult to flush. We were successful in putting up a covey of 8 on the lower slopes of Rujnica Mountain on 7 September.

[\* *Perdix perdix*. Partridge—Not seen.]

\* *Coturnix coturnix*. Quail—One on the Przine Marshes on 5 September.

\* *Rallus aquaticus*. Water Rail—A juvenile and 2 adults were seen at Deransko Jezero on 9 September.

*Porzana porzana*. Spotted Crake—At least 3 at the Deransko Jezero on 13 September.

\* *Gallinula chloropus*. Moorhen—Recorded from the Neretva and Gluka Rivers and the Deransko Jezero.

\* *Fulica atra*. Coot—Seen only on the Deransko Jezero where there were at least 60 on 13 September.

*Vanellus vanellus*. Lapwing—Our only records were one by the Gluka River on 9 September, and an adult and 6 juveniles at Deransko Jezero on 13 September.

*Charadrius hiaticula*. Ringed Plover—At least 2 in the Neretva estuary on 11 September.

\* *Charadrius dubius*. Little Ringed Plover—At least 3 in the estuary on 11 September.

*Gallinago gallinago*. Snipe—Several were flushed in the Glibusa Marshes and at Hutovo Blato on 3 September, and at least 6 at Deransko Jezero on 13 September.

*Tringa ochropus*. Green Sandpiper—One at the junction of the Gluka and Neretva Rivers on 9 and 13 September.

*Tringa glareola*. Wood Sandpiper—One was present at the Deransko Jezero on 9 September and 2 on 13 September.

*Tringa hypoleucos*. Common Sandpiper—Odd birds were seen in the estuary and along the Gluka and Neretva Rivers on various dates.

*Tringa totanus*. Redshank.—Two over the Glibusa Marshes on 3 September; 3 at Deransko Jezero on 9 and 13 September; and a maximum of 28 in the Neretva estuary on 11 September.

*Tringa erythropus*. Spotted Redshank—Two flew down the Neretva River on 8 September, and one was seen in the estuary on 11 September.

*Tringa nebularia*. Greenshank.—One in the estuary on 11 September.

*Tringa stagnatilis*. Marsh Sandpiper—There were about 12 at the Deransko Jezero on 9 September, and one or two in the estuary on 11 September.

*Calidris minuta*. Little Stint—Three in the estuary on 11 September, and about 7 at the Deransko Jezero on 13 September.

*Calidris alpina*. Dunlin—About 20 at the Deransko Jezero on 9 September, but only one on 13 September. Four in the estuary on 11 September.

*Crocethia alba*. Sanderling—One in the estuary on 11 September.

*Philomachus pugnax*. Ruff—One at the Deransko Jezero on 9 September and 2 on 13 September. One or two in the estuary on 11 September.

*Larus marinus*. Greater Black-backed Gull—One in the estuary on 11 September.

*Larus fuscus*. Lesser Black-backed Gull—A flock of about 12 were seen over the Neretva River on 1 September and a single bird on the following day. Three in the estuary on 11 September.

\* *Larus argentatus*. (Yellow-legged) Herring Gull—A few were seen along the Neretva River on most days, and a party of 22 flew over to the S on 5 September. On 11 September there were ca. 150 in the estuary. About 6 at the Deransko Jezero on 13 September.

*Larus canus*. Common Gull—An adult at the Deransko Jezero on 9 September.

*Larus melanocephalus*. Mediterranean Black-headed Gull—Four at the Deransko Jezero on 9 September, and one on 13 September. At least 5 in the estuary on 11 September.

*Larus minutus*. Little Gull—Two juveniles in the estuary on 11 September.

*Larus ridibundus*. Black-headed Gull—At least 6 at the Deransko Jezero on 9 September, and up to 40 on 13 September. At least 30 in the estuary on 11 September.

*Chlidonias niger*. Black Tern—Small numbers were seen daily along the Neretva River. At the Deransko Jezero on 9 September there were a total of 250-300 present.

*Chlidonias leucopterus*. White-winged Black Tern—A juvenile at the Deransko Jezero on 9 September, and another on 13 September.

*Sterna hirundo*. Common Tern—Two over the Neretva River on 11 September.

*Columba oenas*. Stock Dove—A flock of 22 flew SE over Gabela on 12 September, and one was seen at Grudine on 13 September.

\* *Columba livia*. Rock Dove—Odd birds were seen in the mountains on several dates, but it did not seem to be very numerous.

\* *Streptopelia turtur*. Turtle Dove—Small numbers were seen around Metkovic on various dates, but there were at least 20 on 2 and 12 September. At least 10 were present in the woods above the town on 6 September, and a similar number were noted in the vicinity of the Gluka River on 9 September.

\* *Streptopelia decaocto*. Collared Dove—At least 2 pairs were present in Metkovic.

\* *Cuculus canorus*. Cuckoo—At least 3 seen near the Deransko Jezero on 9 and 13 September.

\* *Otus scops*. Scops Owl.—One heard calling in Metkovic on several dates.

[\* *Bubo bubo*. Eagle Owl—Not seen.]

\* *Athene noctua*. Little Owl—Two seen near Metkovic on 3 September, and one on 5 September.

\* *Caprimulgus europaeus*. Nightjar—One seen near Vastela on 13 September.

\* *Apus apus*. Swift—Up to about 6 seen almost daily.

\* *Apus melba*. Alpine Swift—Flocks of up to 30 were seen on most mornings. On 2 September there were at least 100 over the Neretva River, and a further 60 at Opuzen. There were up to 50 over the Gluka River on 9 and 13 September.

\* *Alcedo atthis*. Kingfisher—Up to 2 seen frequently along the Neretva and Gluka Rivers, and at the Deransko Jezero.

\* *Merops apiaster*. Bee-eater—A flock of 95-100 were seen flying east at ca. 1,500 ft. over the Kosevo vineyards on 5 September. About 50 were noted over the hills above Vastela on 6 September. A flock of about 95 over the Neretva River on the evening of 7 September were obviously looking for a roosting site; about 50 were seen in the same area on 10 September. At the Deransko Jezero there were 20-25 on 9 September, and a total of 22 on 13 September.

\* *Coracias garrulus*. Roller—One was seen near the Deransko Jezero on 13 September.

\* *Upupa epops*. Hoopoe—Single birds seen near Metkovic on 7 September, Deransko Jezero on 9 September, and in the estuary on 11 September.

\* *Picus viridis*. Green Woodpecker—The only record was one seen near the town on 1 September.

[\* *Dendrocopos major*. Great Spotted Woodpecker—Not seen.]

\* *Dendrocopos minor*. Lesser Spotted Woodpecker—Seen in riverain scrub by the Neretva River on at least four dates.

\* *Jynx torquilla*. Wryneck—Up to 2 birds seen in the Przine orchards on at least five dates, and one near the Deransko Jezero on 9 September.

\* *Galerida cristata*. Crested Lark—Small numbers seen regularly in the cultivated areas.

\* *Hirundo rustica*. Swallow—Moderate numbers were seen daily and there was clear evidence of pre-migration gathering. At Kosevo on 5 September there were ca. 150 over the vineyards in the evening. About 500 were present over the Neretva River during the afternoon and evening of 11 September. On the afternoon of 8 September thousands of this species were heading NE in front of a storm, a little later this movement was reversed with thousands of

birds pouring back down the river to the SE, flying just above the surface of the water. A little later on the same day several hundred birds were circling in a confused mass high over the river, apparently uncertain which direction to move in.

\* *Delichon urbica*. House Martin—Up to about 15 were seen daily on the telegraph wires around Metkovic, but there was no apparent evidence of much migratory movement.

\* *Riparia riparia*. Sand Martin—Small scale movements only were noted, the numbers on the telegraph wires near the town fluctuating from 15 to 50 or more during the first twelve days of our stay. On 9 September about 60 passed SW along the Gluka River, and about 90 were present over the Neretva River on the evening of 11 September.

\* *Anthus campestris*. Tawny Pipit—At least 5 near Pocitelj on 4 September. Two near Glusci on 10 September. A minimum of 8 in a loose flock in the Przine maize fields on 12 September. One near Grudine on 13 September.

*Anthus trivialis*. Tree Pipit—Seen regularly in the fields at Ada Atr where there were at least 10 on 2 September. Recorded in small numbers also from the Glibusa marshes, Glusci, Grudine, and the Przine marshes.

*Anthus pratensis*. Meadow Pipit—Several seen in the fields at the Przine marshes on a few dates.

\* *Motacilla flava*. Yellow Wagtail—A party of 6 on the Przine marshes on 1 September. Very numerous (ca. 100) on the Glibusa marshes on 3 and 7 September. About 250-300 in flooded meadows in the valley below Glusci on 10 September. We made no attempt at racial identification, but 3 males on the Przine marshes on 11 September appeared to be almost typical *M.f. feldegg*.

\* *Motacilla alba*. White Wagtail—Two by the Neretva River at Ada Atr on 8 September.

\* *Lanius collurio*. Red-backed Shrike—The most numerous shrike in the area, the majority being females or immature birds. About 10 were present around the Przine orchards on 1 September, but only 2 remained by 12 September. At least 12 were seen along the Gluka River and about 15 around Deransko Jezero on 9 September, but only 4 in this area on 13 September.

*Lanius senator*. Woodchat Shrike—An immature bird near the Przine marshes on at least four dates. An adult male and two immature birds at the Glibusa marshes on 3 September. One at Pocitelj on 4 September. Two immatures between Metkovic and Kula Narinska on 7 September, and one by the Gluka River on 9 September.

\* *Lanius minor*. Lesser Grey Shrike—Up to 3 seen in the vicinity of the Przine marshes on several dates. Two on the Glibusa marshes on 3 September. A minimum of 6 between Metkovic and Kula Narinska on 7 September. Two adults and an immature bird along the Gluka River on 9 September.

*Lanius excubitor*. Great Grey Shrike—One near an orchard on the Przine marshes on 2 and 4 September.

*Cinclus cinclus*. Dipper—One at the Kravice Waterfalls on 5 September.

*Troglodytes troglodytes*. Wren—Seen in scrub by the river near Metkovic on one date only.

\*? *Turdus merula*. Blackbird—Noted on two occasions in woodland by the Neretva River near Metkovic. It is suspected that there is a small breeding population in this habitat, but definite evidence is lacking.

*Monticola saxatilis*. Rock Thrush—A male seen in the valley below Glusci on 10 September.

[\* *Monticola solitarius*. Blue Rock Thrush—Not seen.]

*Oenanthe oenanthe*. Wheatear—Three above Metkovic on 2 September; 2 near Vid on 3 September; a total of 6 along the Gluka River and 2 at Deransko Jezero on 9 September; about 6 in the vicinity of Glusci on 10 September; one at Grudine on 13 September; one on the slopes of Rujnica Mountain on 7 September, and one at Pocitelj on 4 September.

\* *Oenanthe hispanica*. Black-eared Wheatear—Two seen on the Vastela slopes on 2 and 8 September; one at Pocitelj on 4 September; one at Kravice on 5 September; Grudine, 2 on 6 September and 3 on 10 September; about 6 in the vicinity of Glusci on 10 September.

*Saxicola rubetra*. Whinchat—A common species in the cultivated areas, at Przine alone there were generally up to 20 present.

*Phoenicurus phoenicurus*. Redstart—Single birds seen at Vastela on 6 September, near Matijevic on 7 September, by the Gluka River on 9 September, Grudine on 10 September, and near the estuary on 11 September.

*Phoenicurus ochruros*. Black Redstart—One seen near Grudine on 13 September.

\* *Luscinia megarhynchos*. Nightingale—One in riverain scrub near Metkovic on 1 and 8 September; one at Kravice on 5 September; and one in the pine-woods at Vastela on 6 September.

*Erithacus rubecula*. Robin—One at the Kravice waterfalls on 5 September.

*Panurus biarmicus*. Bearded Tit.—The characteristic call of this species was heard on two occasions at the Deransko Jezero on 13 September.

\* *Cettia cetti*. Cetti's Warbler—A few noted in marshy areas on several dates.

*Locustella luscinioides*. Savi's Warbler—One seen in the Glibusa marshes on 3 September.

*Luscinia melanopogon*. Moustached Warbler—One in the maize fields at Przine on 1 September, and at least one again on 12 September. One at the Glibusa marshes on 3 September.

*Acrocephalus schoenobaenus*. Sedge Warbler—Indeterminate numbers were present in the Glibusa marshes on 3 September, and one was seen at the Deransko Jezero on 13 September.

\* *Acrocephalus scirpaceus*. Reed Warbler—Recorded in the Glibusa marshes and at Przine. Although not so numerous as the preceding species, there were probably more present than we actually saw.

\* *Acrocephalus arundinaceus*. Great Reed Warbler—Well distributed throughout the marshy areas, a number still in very good song.

*Hippolais icterina*. Icterine Warbler—The most frequently recorded and widely distributed member of this genus, with records from the woods at Vastela; the *Phillyrea media* woods at Glusci; the Glibusa and Przine marshes; riverain scrub by the Neretva River at Ada Atr where there were at least 5 on one occasion; and near the estuary.

\* *Hippolais pallida*. Olivaceous Warbler—One near the Przine marshes on 2 September, and one at Kravice on 5 September.

\*? *Hippolais olivetorum*. Olive-tree Warbler—Two at the edge of a maize field near the town on 1 September, and one in willows by the Neretva River on 12 September.

*Sylvia atricapilla*. Blackcap—Three records only, two by the Neretva River at Ada Atr on 7 and one on 8 September, and one at Kravice on 5 September.

*Sylvia nisoria*. Barred Warbler—A first winter bird near Glusci on 10 September.

\* *Sylvia hortensis*. Orphean Warbler—One in the pinewoods at Vastela on 6 September, and at least 2 in the *Phillyrea media* woodland at Glusci on 10 September.

*Sylvia borin*. Garden Warbler—One in the pinewoods near the town on 2 September; one at Kravice on 5 September; one at Glibusa on 7 September; and 2 in scrub by the Neretva River on 8 September.

*Sylvia curruca*. Lesser Whitethroat—One near the Przine marshes on 2 September, and 2 near Glusci on 10 September.

\* *Sylvia communis*. Whitethroat—Two at the Glibusa marshes on 7 September; Neretva River, one in scrub on 7 and 2 on 8 September; one at Deransko Jezero on 9 September; 2 at Grudine on 10 September.

*Sylvia conspicillata*. Spectacled Warbler—Two seen in bushy undergrowth at edge of pinewoods at Grudine on 10 September.

\*? *Sylvia melanocephala*. Sardinian Warbler—One near Pocitelj on 4 September, and one near Dracevo Doljane on 12 September.

[\* *Sylvia cantillans*. Subalpine Warbler—Not seen.]

*Phylloscopus trochilus*. Willow Warbler—One at Grudine on 6 September; 3 near Glusci on 10 September; and one at the Przine marshes on 12 September.

*Phylloscopus collybita*. Chiffchaff—Two at the Przine marshes on 12 September.

Single Willow Warblers or Chiffchaffs were seen at various localities on several dates, primarily in the cultivated areas.

\*? *Phylloscopus sibilatrix*. Wood Warbler—The most numerous and widespread *Phylloscopus* species, recorded daily in the pinewoods and quite frequently in the cultivated areas.

*Phylloscopus bonelli*. Bonelli's Warbler—On 6 September there was at least one in the pinewoods at Vastela, and several in the woods at Grudine. One was seen in riverain scrub by the Neretva River on 8 September.

\*? *Muscicapa striata*. Spotted Flycatcher—Widespread throughout the area, with up to 10 by the Neretva River on 8 September and at the Deransko Jezero on 9 September. At least 20 were present at Grudine on 13 September.

\*? *Ficedula albicollis* / *F. hypoleuca*. White-collared / Pied Flycatcher—A number of these flycatchers were observed in the wooded areas, many were juveniles and were not specifically identified. At least 5 definite Pied Flycatchers were noted, and definite White-collared Flycatchers included at least 3 in the *Phillyrea media* woods at Glusci on 10 September, and 2 in *Salix* by the Neretva River on 12 September.

\* *Parus major*. Great Tit.—Seen daily in small numbers, primarily in the *Pinus halepensis* woodland on the mountain slopes. But also in *Quercus pubescens* scrub near Grudine, and in the *Phillyrea media* woods at Glusci.

*Parus caeruleus*. Blue Tit.—At least one in the *P. halepensis* woods on 6 September; 2 in riverain scrub on 7 and 12 September; and one near the estuary on 11 September.

*Parus ater*. Coal Tit.—A few were noted in the pinewoods above Metkovic on 2 September.

\* *Parus lugubris*. Sombre Tit.—Although a local breeding species we did not see very many. There were 2 among rocky scrub by the Deransko Jezero on 9 September, and at least 6 in the *P. media* woods at Glusci on 10 September. We also saw one at Pocitelj on 4 September.

*Aegithalos caudatus*. Long-tailed Tit.—Seen on only two occasions, 6 in the pinewoods above the town on 6 September and a similar number in willows at Deransko Jezero on 13 September.

\* *Sitta neumayer*. Rock Nuthatch—Locally distributed and generally seen in pairs, confined to areas of rocky scrub in the mountains and foothills. We noted it at Grudine, Rujnica Mountain, above Deransko Jezero, and at Glusci where a total of 8 were seen on 10 September.

\* *Emberiza calandra*. Corn Bunting—Odd birds were seen on various dates on the Glibusa marshes, along the Gluka River, and at Grudine. The main stronghold of this species, however, were the maize fields and orchards at Przine marshes. In this area there were at least 20 on 2 September, and these had increased to about 100 by 4 September. These birds roosted in the rough grass among the scattered trees.

*Emberiza citrinella*. Yellowhammer—One flew over the Przine marshes on 2 September.

[\* *Emberiza cirius*. Cirl Bunting—Not seen.]

[\* *Emberiza melanocephala*. Black-headed Bunting—Not seen.]

\* *Emberiza hortulana*. Ortolan Bunting—A flock of about 20 were seen in the fields at Ada Atr on 7 September, and at least 12 in the same area on 8 September. On the latter date a party of 6 were seen on the rocky slopes at Vastela. Three were seen near the Gluka River on 9 September.

*Emberiza cia*. Rock Bunting—Seen only in the vicinity of the Cypress woods above Matijevic where there were about 8 on 7 September.

\* *Emberiza schoeniclus*. Reed Bunting—Not common, up to 4 were generally present in the Przine marshes, and one was seen in the Glibusa marshes on 3 September.

*Coccothraustes coccothraustes*. Hawfinch—Two in the woods at Grudine on 13 September. This species is a common winter visitor to the area.

\* *Chloris chloris*. Greenfinch—One in the woods above Metkovic on 2 September and another in scrub by the Neretva River at Ada Atr. At the latter locality there were a flock of 8 on 7 September; one on 8 September, and 4 on 12 September. At least 15-20 were seen in the *Phillyrea media* woods at Glusci on 10 September. A flock of about 50 were seen at Kravice on 5 September.

\* *Carduelis carduelis*. Goldfinch—A party of 7 in pines at Vastela on 2 September, and 2 on 6 September. Four near Vid on 3 September. At least 6 in scrub by the Neretva River on 7 September, and a flock of 25 on 12 September. About 6 near the maize fields at Przine on 4 September. A minimum of 8 along the Gluka River on 9 September. A total of 10 near Grudine on 13 September.

*Carduelis spinus*. Siskin—A party of 3 by the Neretva River at Ada Atr on 7 September.

\* *Carduelis cannabina*. Linnet—Four at Vastela on 2 September. Two at Ada Atr on the same date and 3 on 12 September. At least 7 near the Glibusa marshes on 3 September. A party of 6 near the Przine marshes on 4 September. A group of 3 by the Gluka River on 9 September.

*Serinus serinus*. Serin—Two singing and at least 6 others present in the *Phillyrea media* woods at Glusci on 10 September.

*Pyrrhula pyrrhula*. Bullfinch—The sole record is of one seen at Grudine on 6 September.

*Loxia curvirostra*. Crossbill—Small numbers were seen on many occasions in the pinewoods above the town. The maximum seen in the area generally were 16 by the Neretva River on 7 September, and a flock of 20 at Grudine on 13 September.

\* *Fringilla coelebs*. Chaffinch.—An uncommon species in this area where it is said to breed only at Prud. We saw a male at Grudine on 6 September.

\* *Passer domesticus*. House Sparrow—Common in the vicinity of Metkovic, there was a large roost in trees by the Neretva River to the west of the town.

*Sturnus vulgaris*. Starling—We had only two records of this species—4 by the Gluka River in the morning, and a flock of 35 flying over later in the day on 13 September. The main arrival of this species occurs normally in late October.

\* *Oriolus oriolus*. Golden Oriole—Fairly widespread, particularly in the riverain scrub by the rivers, and apparently with males predominating. Sample counts of birds seen from one point by the Neretva River are at least 6 on 2 September, 10 plus on 7 September, and 5 on 9 September.

\* *Corvus corax*. Raven—Seen only on Rujnica Mountain.

\* *Corvus corone*. Hooded Crow—A common species in the area. Every evening during the period of our visit movements of this species in an easterly direction were noted. These flights commenced about at 16.00 h and continued until at least dusk. The birds passed over on a wide front in no set formation, and generally flew at 1,500-2,000 ft. Detailed observations on five dates between 16.00-18.00 h indicated that up to 400-450 birds passed over the town itself each hour. Although these flights were seen every evening, no movements in the reverse direction were noted in the mornings. Nevertheless, it is probable that these were flights to a communal roost rather than actual migratory movements.

\* *Corvus monedula*. Jackdaw—Only one record, a single bird at Pocitelj on 4 September.

\* *Pica pica*. Magpie—A common species in the lowland areas where parties of up to 10 were seen daily, and maxima of 22 on 1 September and 20 on 2 September.

\* *Pyrrhocorax graculus*. Alpine Chough—A flock of 100-125 were seen on the peak of Rujnica Mountain (735 metres) on 7 September.

#### SUMMARY

The paper gives a brief description of the topography of the Lower Neretva Valley at Metkovic, Yugoslavia, and gives details of 165 species recorded there

from 1-14 September 1963. Seven of the species recorded appear to be new to the area and one is new to Yugoslavia (*Sylvia conspicillata*). Some of the more interesting aspects of the migration observed are discussed.

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