INLAND WADER COUNTS - THIRD PROGRESS REPORT

by OAG Munster

One of the most obvious results from the inland wader counts project in 1983 was that inland waders seem to become more and more attractive to European ornithologists. In other words, the number of sites has increased again. There are now some 180 sites in 10 European countries from which data are available or expected (see Figure 1). It is surprising that most places (65%) at which waders rest in appreciable numbers in inland Europe are man-made. This emphasises the importance of reservoirs, gravel pits and sewage farms for the migration of some wader species. We are grateful to the around 300 volunteers who went out each weekend to count the birds in these, sometimes at least, evil-smelling places.

Most of the data have now been stored on computer at the Biologische Station in Munster and are, therefore, available for preliminary evaluation. At the moment, the material consists of data from more than 8000 counts from the various sites. However, from some of these sites there are data from one year only, whilst from others there are now counts from four years. These differences in the data base make the interpretation of the results rather difficult at present.

To show what can be done with the material available now, we have calculated the autumn mean migration dates of some *Tringa* species, and the Common Sandpiper *Actitis hypoleucos* (Figure 2). The values on these maps were calculated as follows. For each site where counts and regular sightings of a species were made, an arithmetic mean of the migration date was calculated. These means were combined for each of the regions shown on the maps to give regional mean migration dates. There are certainly more elegant methods of calculating such means, but the material does not permit their use yet.

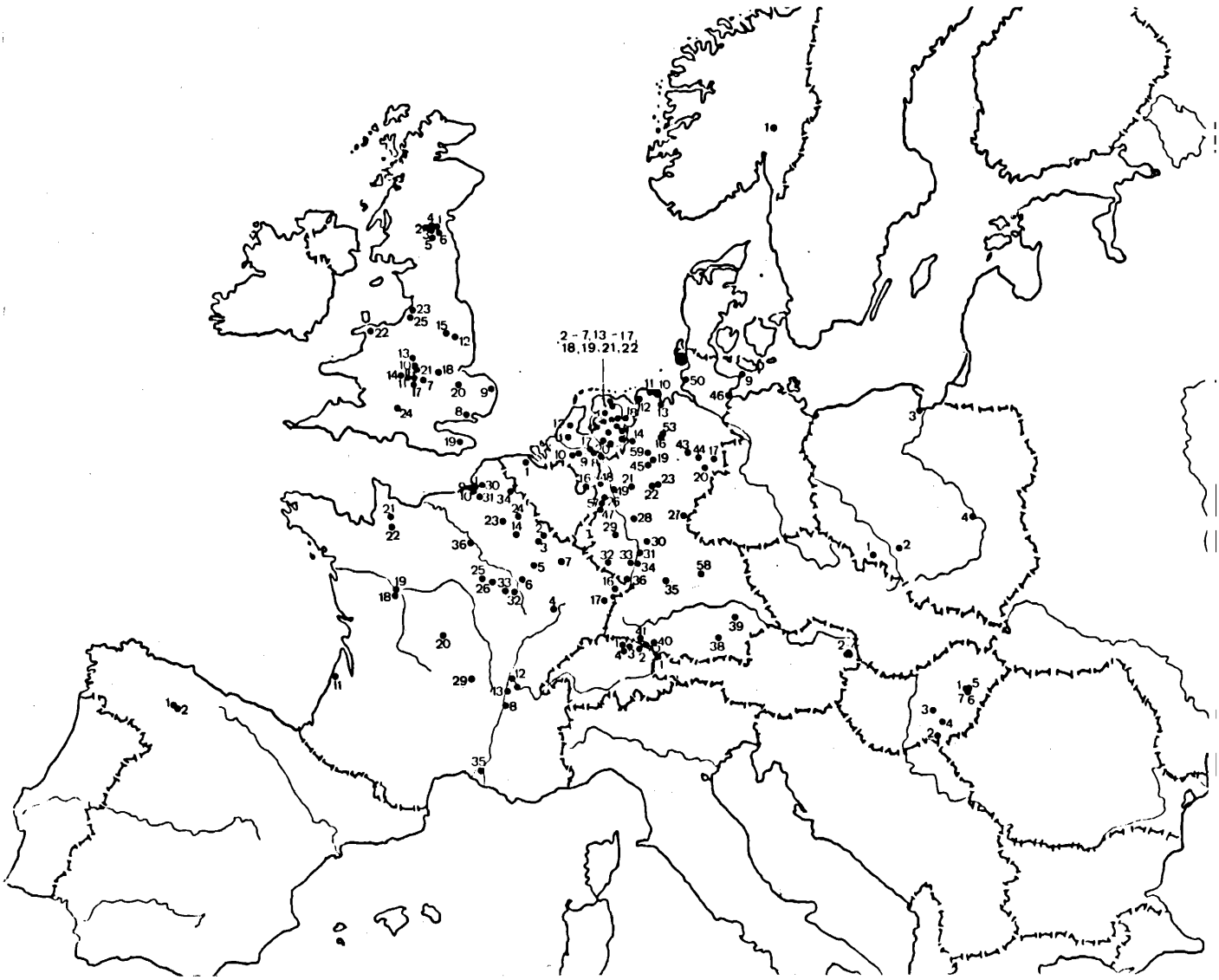

Figure 1. Sites from which data are available or expected.

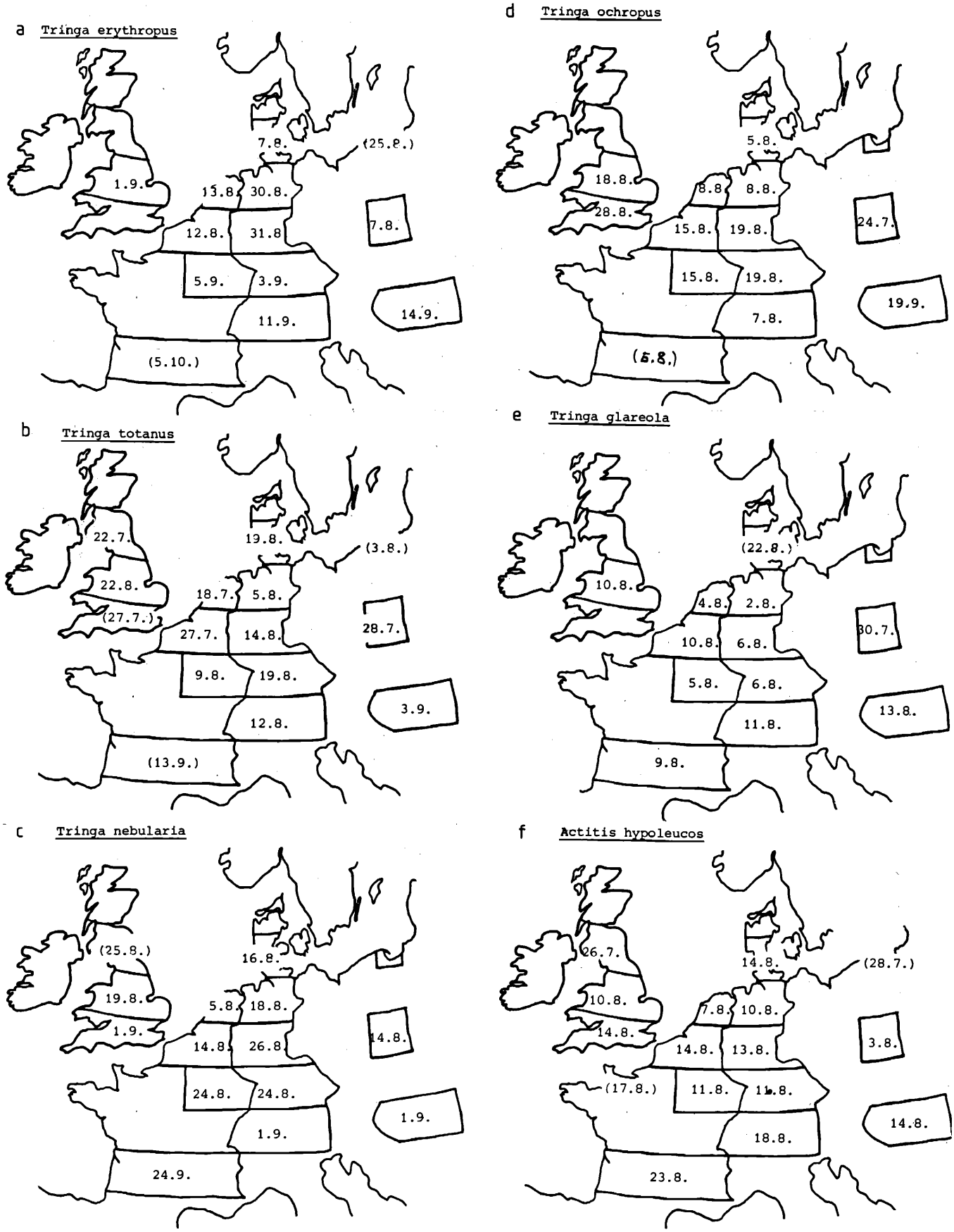

Figure 2. Mean autumn migration dates (day and month) in different regions of Europe of Tringa sandpipers and the Common Sandpiper Actitis hypoleucos.

The mean migration dates of the Spotted Redshank *Tringa erythropus* (Figure 2a) show that resting birds were seen considerably later in the south-western part of the area counted than in the north-eastern part. This fits with the main south-westerly direction of migration shown by ringing recoveries. There is a delay of about two months between the dates in Schleswig-Holstein and southern France. It is clear that migration occurs much earlier at sites near the coast in Schleswig-Holstein, the Netherlands, Belgium and northern France, than in the inland sites. This phenomenon may arise because adults, which start migrating earlier than juveniles, are found in considerable numbers only near the coast, and are seldom seen inland. The late inland dates may therefore result from the occurrence of late-migrating juveniles. If the dates for the coastal sites (and with them most of the adult Spotted Redshanks) are excluded, there is a difference of about one month between mean migration dates in northern Germany and southern France.

The dates for the Redshank *Tringa totanus* (Figure 2b) provide an excellent example of how difficult it is to interpret some results. It is almost impossible to find a clear picture of the timing at different sites, especially those near the North Sea coast. This is because of the inclusion of many different categories of birds in the counts. These include breeding birds from the North Sea coast, as well as migrants from northern and north-eastern Europe, and wintering birds from Iceland and elsewhere. If only the truly inland sites are considered, the pattern resembles that of the Spotted Redshank, with a difference of about one month between mean migration dates in northern Germany and southern France. There are some indications that birds at inland sites are mainly juveniles, but this has yet to be confirmed.

Greenshanks *Tringa nebularia* (Figure 2c), like the previous two species, occur in their largest numbers on North Sea coasts. However, both juveniles and adults are seen in considerable numbers also on inland sites. The rather early migration dates at the coast may be because of the presence of a high proportion of early-migrating adults, as found for the Spotted Redshank. However, there is little reliable data on the age composition of Greenshanks at coastal and inland sites. Like Spotted Redshanks and Redshanks, Greenshanks show a clear trend of migration from the north-east to the south-west, with again a difference of about one month between the extreme dates.

The migration pattern of the Green Sandpiper *Tringa ochropus* (Figure 2d) differs from those of the larger *Tringa* species in that Green Sandpipers seem to reach all areas of central and western Europe at about the same date. There is little difference between the mean migration date in the north and south of the region. The Green Sandpiper is a typical inland-migrating species. Large numbers at coasts are unknown.

The distribution of dates for the Wood Sandpiper *Tringa glareola* (Figure 2e) resembles that for the Green Sandpiper. Differences between mean migration dates at northern and southern sites are small. The date for Schleswig-Holstein is unexpectedly late but may be because we have little data for this region.

Common Sandpipers (Figure 2f) occur regularly at many inland resting sites, so the data are more comprehensive than for other sandpipers. Most birds migrate inland through central Europe, although quite large numbers have been reported at some coastal sites. The migration pattern of Common Sandpipers is thus intermediate between the Spotted Redshank and Redshanks, which occur mainly on the coast, and the Green Sandpiper and Wood Sandpipers, which occur mainly inland during autumn migration. Figure 2f shows the progress of the autumn migration south-west from Poland and northern Germany to southern France, and south from Scotland to southern France. The difference between the extreme dates is almost one month.

It is too early to draw far-reaching conclusions from the data presented above. However, at least two different patterns of the timing of autumn migration can be distinguished. In Spotted Redshanks, migration occurs much earlier on the coast than inland. This pattern seems also to occur in Redshanks and Greenshanks. In the other species (Green, Wood and Common Sandpipers) there are no differences in the timing between coastal and inland sites. This may be due partly to inter-specific differences in the proportion of adults and juveniles counted. There seems to be a relationship also between migration pattern and the primary moult sites of adults. Many adult Spotted Redshanks and Redshanks moult in early summer in the Wadden Sea. There are probably very few moulting adults of these species on inland sites. Resting birds on inland sites are mainly juveniles, which tend to migrate later than their adult conspecifics. The primary moult of Wood Sandpipers and Common Sandpipers seldom occurs in the region covered by our survey. Data from the Camargue, southern France, which is an important moulting site for Wood Sandpipers, have not yet been included in the analysis and figures. Other moulting sites are near the wintering grounds of these species, i.e. the Mediterranean and Africa. Both adults and juveniles occur at inland sites, so the mean migration dates are unlikely to reflect age differences. Greenshanks adopt an intermediate strategy. Some adults start primary moult in the Wadden Sea, but moult usually takes place much further south. Many adult Green Sandpipers moult their flight feathers at inland sites in temperate Europe, but the relationship here between moult and migration pattern is not yet clear.

Two points emerge from this preliminary analysis. The first is that more data are needed to confirm these findings, especially from sites in southern and eastern Europe. We hope to collect these data during the next few years. Secondly, ringing data would help greatly, at this stage of the analysis, in the interpretation of our count data by giving information on age composition, the proportion of moulting adults, and perhaps speed of migration. We intend to check on how much ringing data is available from such inland sites, and to see if ringing can be organised at sites from which there is little or no data.

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