Introduction

The dark-breasted form of the Barn Owl *Tyto alba guttata* [hereafter *guttata*] has for many years occurred in Britain as a vagrant. Although none of the world’s races of Barn Owls has yet been found to be migratory, dispersal of continental *guttata* is more pronounced (e.g. over 54% of recoveries of chicks ringed in a German study were found more than 50 km from the natal site; Bairlein 1985) than that of British (white-breasted) *T. a. alba* [hereafter *alba*], individuals of which on average move some 12 km from their natal site (Wernham et al. 2002).

In those years when good breeding success is followed by a widespread crash in vole *Microtus* populations (a key element of the species’ diet), a marked increase in the dispersal of *guttata* is evident, and the Germans have even applied the phrase ‘Wanderjahren’ to such years.

The range of *guttata* encompasses southern Sweden (although it now may be extinct there), Denmark, the Netherlands, Germany, Poland, western Russia, Austria, Hungary, Switzerland and Bulgaria (Bunn et al. 1982; Mátics & Hoffmann 2002) or, more specifically, to the east of the 3°C January isotherm in central Europe (Hagemeijer & Blair 1997). Nominate *alba* is found in Britain, western and southern France, Iberia, Switzerland, Italy and North Africa (Bunn et al. 1982). A zone of intergradation is found in eastern France, the Netherlands, Belgium, western Germany, central Switzerland, Hungary and the central Balkan area (*BWP*). There is extensive interbreeding between the two races in these areas, resulting in birds of somewhat variable appearance, with the depth and distribution of colour varying individually. When combined with the plumage variability inherent in all Barn Owl races, this presents considerable problems when it comes to assessing the racial identification of vagrants.

Kehoe (2006) included *guttata* in the list of
taxa thought to be sufficiently rare in Britain to be considered by BBRC. Following that report, BBRC set out to establish whether *guttata* was identifiable out of range and to come up with a set of criteria against which future records could be assessed, and this paper presents a summary of the findings. A review of past records of *guttata* is beyond the scope of this paper, but observers and county recorders are encouraged to submit past records to BBRC that are thought to meet the acceptance criteria.

**Identification**

**White-breasted Barn Owl**

The first step towards identifying *guttata* in Britain is to become fully familiar with the resident population of nominate *alba*. The majority of *alba* should be easily separable from *guttata*. Nonetheless, it should be borne in mind that there is considerable variation within *alba*, and that the sexes may also differ markedly. On average, males are paler than females, and many individuals have unmarked silky white underparts, yellowish-toned upperparts, pale sides to the neck and pale remiges and rectrices. Females can look similar to males, but are usually slightly darker above with more grey markings, have more extensive black spotting below and show darker and more barred remiges and rectrices. They also usually show a buff wash to the upper breast. The ratio of grey to buff on the upperparts is approximately equal for the darkest females. Dark spots can extend from the neck sides down onto the breast, belly and flanks, and even onto the thighs and feathered tarsi. The underwing-coverts may also be spotted. The buff wash to the upper breast varies in extent, but is usually not as dark as on *guttata*. The belly is invariably white, as are the thighs on the vast majority of birds (perhaps all). Importantly, the facial disc is always predominantly white, with darker markings restricted to the area immediately in front of the eye.

**Dark-breasted Barn Owl**

A ‘classic’ *guttata* is extremely distinctive, and should cause no real identification problems. The base colour to the upperparts is a deep, rich buff. This may be strongest on the scapulars, wing-
coverts and remiges and contrasts with the more yellowish hues of many alba. Dark grey marbling covers more than half of the upperparts of guttata, typically two-thirds or more. The grey is especially dense and prominent on the crown, where it may be the only colour (rarely the case in all but the darkest alba). Individual variation is marked, and some birds show almost solidly grey mantle, scapulars and coverts. Dark buff wraps around the sides of the head and onto the breast, extending down across the entire underparts, including the belly, feathered tarsi, undertail- and underwing-coverts. It may be darkest on the breast, but is generally fairly uniform in intensity over the underparts. Any bird showing an obvious contrast between dark breast and pale belly is not guttata. The underparts of both sexes are liberally spotted, unlike those of most alba. The size and intensity of spotting does vary, but should at least be present.

The two races differ consistently in facial pattern. In particular, guttata shows a prominent dark surround to the eye; this can be almost purplish in colour, and radiates outwards from the eyes to cover varying amounts of the facial disc. This seems to be present on all guttata to some degree, but appears less prominent among individuals from the western parts of the range. The edge of the facial disc is also darker in guttata, on average.
Identification of Dark-breasted Barn Owl in Britain

Another useful distinction between the two races is the pattern of the remiges. The primaries of *guttata* have prominent dark grey tips and, on the closed wing, these form a well-marked line of dark grey that is much more distinctive than in *alba*. Furthermore, the cross bars on the primaries are usually darker and more extensive in *guttata*, typically extending right across the feather, a pattern which is not usually found in *alba*; this is often apparent in photographs of birds in flight. At present, there are no known differences between the vocalisations of *alba* and *guttata*, although research into this is continuing (Mark Constantine and Arnoud van den Berg pers. comm.).

The type specimen of *guttata* (plates 327–329) was collected in eastern Germany by Brehm in 1831. It is slightly paler than the ‘classic’ (dark) *guttata* specimens from Germany held in the Natural History Museum (NHM) at Tring, and these darker birds seem prevalent in the core parts of the range.

**Intergrades**

There has been discussion and confusion over the identification of vagrant *guttata* in Britain for many years and, as a consequence, inconsistent recording. Just how extensive does the buff on the underparts have to be before a Barn Owl can safely be identified as *guttata*? In a study on Barn Owls in Hungary, Mátics & Hoffmann (2002) classified those birds with entirely buff-coloured underparts as *guttata* while only those with entirely white underparts were attributed to *alba*. Experience in Britain shows that *alba* can in fact show buff tones to the upper breast at least, but reference to the original type
Identification of Dark-breasted Barn Owl in Britain

specimen (plates 327–329) and to birds in the core range of *guttata* suggests that their definition holds water. The main problem, however, is the extensive zone of intergradation and the variability of intergrades, many of which look confusingly similar to *guttata*. The key areas to concentrate on are the legs and the belly/undertail area. Pure *guttata* will be buff in these areas, while intergrades will be white. Other key points to note include the exact extent of dark around the eyes, the exact base colour to the upper-parts and the extent of grey marbling above.

In parts of continental western Europe, particularly from the Netherlands south to France, intergrades are common and widespread (*BWP*), while studies in Hungary have shown that the transition zone between *alba* and *guttata* there is at least 500 km wide (Mátics & Hoffmann 2002). Many British records of *guttata* probably originate from intergrade zones in western Europe, and this is borne out by ringing recoveries. Of the 18 foreign-ringed Barn Owls recovered in Britain, ten were ringed in the Netherlands, five in Germany, one in Denmark and two in Belgium (Mark Grantham, BTO Ringing Scheme in litt.). It is possible that the Barn Owl population in East Anglia contains a small number of immigrants from the near continent that remain to breed, and the instance of a female *guttata* found nesting in Norfolk and subsequently

327–329. The type specimen of Dark-breasted Barn Owl *Tyto alba guttata* was collected at Altenburg, Germany (c. 80 km west of Dresden), and is beginning to show its age, but the main features are still visible. The dark surround to the eyes is most intense immediately next to the eye (as in nominate *alba*), but then radiates out across the facial disc. The underparts are slightly paler buff than on *guttata* in the NHM, and they are also more lightly spotted. Note, however, that the buff extends all the way down the belly and onto the feathered tarsi. The upperparts are heavily marked with grey, although not as extensive as on most other *guttata*. The dishevelled state of the upper mantle makes it hard to be certain what it looked like in life. Note the strong barring on the tail.

Margaret Hart © Ornithology Dept, AMNH

British Birds 102 • September 2009 • 494–503
Identification of Dark-breasted Barn Owl in Britain

Graham Catley

330 & 331. Barn Owl Tyto alba, Lincolnshire, 2008. This interesting bird is either a fairly dark alba, almost certainly a female, or an intergrade. The darker remiges have quite prominent barring, while the darker buff of the neck sides extends onto the upper breast and then fades into pale buff across the lower breast. Small dark spots extend down the flanks and onto the underwing-coverts. Note the obvious contrast between the white thighs and undertail-coverts with the rest of the underparts in the top photo. In the lower photo, with a slightly different background and light conditions, note how the underparts appear deeper and more uniformly buff. Although hard to see from this angle, this bird also showed extensive grey markings to the crown and mantle. This individual might even have been identified as guttata by inexperienced observers in brief views. It illustrates the difficulties in applying a name to every individual.
found dead (in 2008) reinforces this. That bird had been ringed on 4th June 2007 as one of six chicks in a nest at Bingerden, near Doesburg, Overijssel, the Netherlands (http://www.birdguides.com/webzine/article.asp?a=1378). Barn Owls are largely nocturnal and inhabit farmland areas on which few birders concentrate, so there could be more dark birds in eastern England than we realise. There is also a potential problem related to the previously unrestricted release of captive-bred Barn Owls into the British countryside. The ancestry of these birds is unknown and it is quite possible that intergrades or even *guttata* were released.

It would be interesting to collate all sightings of presumed intergrades, to find out just how common they are, to see whether any kind of occurrence pattern is emerging, and whether conditions in East Anglia favour darker birds compared with other parts of Britain (for example, factors such as the relative abundance of mice and voles, climate and proximity to the continent may all play a role). The key difficulty, of course, is in determining the dividing line between a dark *alba* and an intergrade, and Plates 330 & 331 illustrate one such difficult individual.

**Taxonomy and discussion**

Considering that *alba* and *guttata* interbreed across a large area, and intergrades of variable appearance are common, any future split seems unlikely. Even the recent nine-way split of
Barn Owl (Konig & Weick 2008) retained *guttata* as a race of *alba*.

Work recently undertaken in central Europe has demonstrated that pairing between the two races is random and that mixed pairings may produce offspring which resemble pure individuals of either race (Mátics & Hoffmann 2002), which helps to explain the extensive intergrade zone described previously. This, together with the fact that at least one pair of (apparently) pure *alba* in Britain has produced dark-breasted offspring (French 2006), calls into question the true status of *guttata* and whether it is possible to identify it safely in the field outside the core breeding range. Roulin (2004) showed that diet differs significantly between the two races, both in sympatry and in allopatry, with *guttata* feeding mostly on Common Voles *Microtus arvalis* and *alba* mainly on mice *Apodemus*. A consistent difference in prey selection such as this may be sufficient to maintain the status quo regarding the distribution of the two races. Interestingly, *guttata* also seems to be more strictly nocturnal than *alba* (Alan Ball pers. comm.) and that could be linked to the activity pattern of favoured prey. In other species, different colour morphs have been shown to maintain different feeding strategies, for example Pacific Reef Herons *Egretta sacra*.
Whether this is sufficient to maintain subspecies status rather than simply treating as different colour morphs is open to debate and beyond the scope of this paper.

Concluding comments
Although it is not in doubt that pure *guttata* does occur in Britain occasionally, it does seem that records are somewhat less common than currently thought. Intergrades may make up a significant proportion of migrant Barn Owls from the near continent and, indeed, some claims of *guttata* may even be of birds within the variation shown by *alba*. Nonetheless, *guttata* is identifiable in the field providing that the following key features are seen (and described or photographed) well, preferably in a variety of light conditions and ideally with some or all of the supplementary features described also.

Key features of *guttata*
1. Dark buff underparts, extending right down onto belly, legs and undertail.
2. Extensive dark markings around the eye, spreading out across the facial disc.
3. Extensive grey markings over the entire upperparts, with clearly more grey than buff visible.

Supplementary features
4. Mostly (preferably all-) grey crown.
5. Bold dark bars across the outer primaries.
6. Dark grey tips to the primaries.
7. A darker brown edge to the facial disc.

BBRC’s view is that a pragmatic approach is to accept records of birds clearly showing all the key features of *guttata* listed above, and to treat those records that fall short on one or two features as probable intergrades. This effectively ignores the (admittedly small) possibility that an acceptable *guttata* could have been born in Britain to non-*guttata* parents, but at the present time this approach seems most realistic.

Acknowledgments
I would like to thank Mark Adams and Katrina Cook at NHM for allowing access to specimens, and Margaret Hart and Paul Sweet in the ornithology department of the American Museum of Natural History (AMNH) for providing images of the type specimen of *guttata*. Chris van Rijswijk supplied many photos of Dutch *guttata* and intergrades, and much useful discussion. Alan Ball and Kevin Durose provided very useful comments on darker-breasted *alba* in Lincolnshire. Several BBRC members, in particular Brian Small and Adam Rowlands, assisted with

---

337. Barn Owls *Tyto alba*, Gelderland, the Netherlands, June 2007. This brood of intergrades all show strong buff coloration to the upper breast, which contrasts sharply with the whitish belly, and dense black spotting. Birds like this occur regularly on the near continent. This brood was raised at the same nest-site as the brood shown in plate 323 and it seems likely that one of the *guttata* parents was subsequently replaced by an intergrade.
my work at NHM. Mark Constantine provided a stimulating discussion on owl vocalisations. Thanks also to Günther Bachmeier, Nigel Blake, Graham Catley, Kevin Durose, Michiel Schaap and Willem van Rijswijk and all the photographers who have posted on various websites, particularly www.birdpix.nl and www.birdfocus.nl. Even though they have not been used here, images from these sites were consulted during the preparation of this paper.

References

Paul R. French, 3 Drakards Lane, Boston, Lincolnshire PE21 6DB

The British Birds Rarities Committee is sponsored by Carl Zeiss Ltd

Chairman
Adam Rowlands, East Walks Bungalow, Minsmere RSPB Reserve, Westleton, Suffolk IP17 3BY

Secretary
Nigel Hudson, Post Office Flat, St Mary’s, Scilly TR21 0LL; e-mail secretary@bbrc.org.uk

BBRC members
Chris Batty, Chris Bradshaw, Lance Degnan, Paul French, Martin Garner, Nic Hallam, James Lidster, Richard Millington, Mike Pennington, John Sweeney

Archivist John Marchant • Museum Consultant Brian Small
Summariiser and RIACT Chairman Reg Thorpe • RIACT Secretary Peter Kennerley