PHOTOGRAPHIC STUDIES OF SOME LESS FAMILIAR BIRDS

XCVIII. SQUACCO HERON

Photographs by Eric Hosking

(Plates 33-36)

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DISTRIBUTION

The herons and bitterns (Ardeidae) are a world-wide family of some fifty-nine species, and all but four of the fifteen in the Palearctic have extensive breeding ranges that take them much or all of the way across Asia and Europe, while ten of these are also found in Africa, five of them in Australia and four of them in America. The Squacco Heron (Ardeola ralloides) is no exception to this, although its range is more limited than some. In the south of Europe, where it is a summer visitor, it breeds from Spain to the Balkans and south Russia, and from there it extends across Asia Minor, Iraq and Persia to Turkestan; at the same time it nests in Morocco and Tunisia, and over the southern half of the African continent including Madagascar. However, in Europe, and indeed over much of its range, it is scarce or even rare and forms but a small fraction of the great mixed colonies of, for example, Little Egrets (Egretta garzetta), Cattle Egrets (Ardeola ibis) and Night Herons (Nycticorax nycticorax), in which it invariably nests. According to Dementiev and Gladkov (1951; see Harber, 1955), it is numerous in the area of the lower Dnieper and along the Kura in Transcaucasia, and in some years in the Astrakhan sanctuary, but “elsewhere over its range it is rare”. In 1956 James Fisher and the writer estimated only some 60-90 pairs of this species in the huge Coto Doñana heronry in Spain, in a grand total of nearly 7,000 pairs of small heron species. Curiously, on the other hand, it has occurred nearly a hundred times in the British Isles—the last in Cambridgeshire and Glamorgan in 1954 (antea, vol. xlvi, p. 129)—and thus much more frequently than the other vagrant herons from southern Europe, with the exception of the Night Heron, though in the last eight years the Little Egret is the one that has become of annual occurrence.

FIELD-CHARACTERS AND DISPLAY

The Squacco is a bird of contrasting plumage: settled, particularly when on the ground, it appears predominantly yellowish-brown (and rather dingy at a distance), but the moment it takes the air it shows large areas of white and thus it seems almost as if it changes colour in a flash. This is because the white of the back, rump, tail, wings and lower under-parts is almost completely concealed by the long cinnamon feathers of mantle, scapulars and breast when the bird is at rest. The Cattle Egret always looks mainly white on the ground and so there is
no chance of confusion between these two species as might be suggested by the plate in the *Field Guide*. In flight, even at a distance, the Squacco's head always looks dark and stripy.

At close range the Squacco has a strikingly serpentine appearance at times, due to the combination of a small and narrow head and a long, if thin, neck (plate 33) which merges into the body rather like a Bittern's (*Botaurus stellaris*). The serpent effect is somehow enhanced by the zebra-striped crest (plates 34 and 35) which is always present except in juvenile and first-winter plumages. In these plumages, and in the adult winter, the yellowish-buff of neck and throat is striped with more or less blackish lines, but in adult summer the throat and neck, as well as the long feathers of the lower throat and upper breast and the even longer filmy scapulars, become a uniform golden-buff—while the mantle changes to a rich pinkish, almost purplish-pink. All these feathers, and the crest, are raised in times of excitement at the nest (plate 34): they may be used in actual sexual display as well as in appeasing ceremonies during nest-relief, though the matter needs further study. As with the Little Egret, the feathers of mantle and scapulars have long, loose rami: these give a filmy effect to the raised spray of gold and pink, which because of these colours seems even more beautiful than the Little Egret's white tracery.

**COLOUR-CHANGES IN SOFT PARTS**

More striking, however, than the summer plumage changes are those of legs and bill. In the last few years it has become increasingly realized that a number of heron species with soft parts that are brown, yellow or green tend to develop red, pink or orange legs and bills (and sometimes eyes as well) for a short period at the beginning of the breeding-season. Apart from a few isolated references to common Herons (*Ardea cinerea*) with red or orange legs, bills and eyes—of which one of the earliest appears to have been that quoted in Salter (1904)—this phenomenon was almost entirely overlooked until it was brought into prominence by Gough (1945)*. Her observations on common Herons in Co. Galway in 1944 were developed tentatively for this species by Ruttledge (1949) and Tucker (1949), the former from systematic work at one colony and the latter from summarizing a number of isolated reports from various parts of the British Isles; Tucker at the same time quoted Binsbergen (1941) as evidence from Holland and drew upon his own experience in Spain with Cattle Egrets (see also Tucker, 1936). A more detailed account, again with particular reference to the common Heron, then appeared in Lowe (1954) who summarized his own extensive observations and discussed the closely allied carotenoid pigments of yellow and red and the chemical changes involved. Lowe also showed that at times of excitement some reddening is momentary and akin to the human blush. Apart from common Herons and Cattle Egrets, other European species which have these changes include Little Egret (feet only), Night Heron (legs and feet) and
Little Bittern (*Ixobrychus minutus*). Our own work on the Coto Doñana suggested that the changes were entirely confined to the pre-nesting period and early stages of incubation, and this is confirmed by the observations on other species in India by Abdulali and Alexander (1952) and in Surinam by Haverschmidt (1953), though Gush (1952) in East Java gave records of four species which were mostly after the main local breeding-season.

Reverting to the Squacco Heron, this has very marked colour changes. In winter, and indeed for most of the year, the legs and the basal half of the bill (including the bare loral patch) are varying shades of yellowish-green, while the tip and top of the bill are blackish and the eye is pale yellow. Our observations in Spain seem to show that most, if not all, breeding Squacco Herons develop bright red or at least pinkish-red legs at the onset of the nesting-season. These fade, as incubation advances, through dull pink and pinkish-brown to yellowish-brown and the normal off-season yellowish-green. The birds at the nest in these photographs (plates 33-35) were noted by Roger Peterson to take 2½ weeks to change from "red" to "greenish-yellow". (No "blushing" was seen in this species, though momentary colouring was frequently noted in the Cattle Egrets in the Coto Doñana colony.) At the same time as the reddening of the legs, or more probably a little earlier (see below), the bill and loral patch apparently become a clear bright blue; this evidently fades more quickly until by the time the eggs are laid a typical individual has the distal third of the bill black (plates 33-35), shading through grey and grey-blue to bright blue at the base, which in turn gives way to a bright emerald green on the loral patch and round the eye. There is considerable variation in the amount of blue, perhaps indicative of the development of the individual, and in some cases the green of the loral area extends to the base of the bill. As far as the writer knows, the first people to comment on this blue colour-change, as recently as 1953, were Dr. P. R. Westall and John Wightman who visited the Coto Doñana colony on 26th April of that year: breeding was not so far advanced as it was in 1956 ("few, if any, completed clutches of any herons were present") and they found that every one of about 20 Squaccos seen in the colony had "a uniform brilliant Cambridge blue bill without any noticeable dark tip". It is interesting to note that all the Squaccos seen by Westall and Wightman still had yellowish-green legs, supporting our impression that in this species the reddening of the legs begins later than the colour change in the bill. In 1956, when most of the herons had eggs by the time we arrived, we saw only two Squaccos with completely blue bills, but the leg colour was evidently at its peak. Also in 1956 there were a few Squaccos in

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*It is interesting to note, however, that some earlier writers, describing herons of various species from birds shot at breeding colonies, used the word "reddish" not infrequently—and Seebohm (1884), for example, generalized on the soft parts of the Squacco Heron from a stage which must have been not far past the peak of colour.
the colony with the normal off-season yellowish-green bills and legs, and these were thought to be either first-summer or other non-breeding individuals. In 1957 when few herons and no Squaccos were nesting on the Coto Doñana, owing to drought conditions, only a small percentage of the Squaccos showed any blue on the bill or red on the legs, and only three (out of over a hundred examined) were in a condition approaching the incubation-stage colours of the previous year. At all stages the iris of the Squacco Heron appears to remain lemon-yellow.

HABITAT AND NESTING

Although The Handbook describes the habitat as similar to that of the Little Egret, there are distinct differences in Spain in the foraging zones and there, too, the Squacco Heron is more specialized in its choice of nest-site. Whereas the Little Egret feeds particularly in the open shallows and the Cattle Egret on dry or wet grassland, the more skulking and crepuscular Squacco Heron is found chiefly in lush water-meadows where it feeds mainly on aquatic insects and some fish (see also Mountfort, 1958; Valverde, 1958). Single birds may also be seen in stagnant ditches or vegetable plots, feeding on beetles, dragonflies and other insects.

In other parts of its range the Squacco breeds in trees and reeds, as well as bushes, and a photograph of a more arboreal nest was published in British Birds in 1952 (vol. xlv, plate 64). But on the Coto Doñana, nests of this species are confined to denser parts of the tangles of bramble (Rubus) and tree-heath (Erica arborea), and are seldom, if ever, to be seen in the surrounding cork oaks (Quercus suber) like some of those of the Cattle and Little Egrets and Night Herons. The Squacco is slightly later than these others in settling down to breeding, though it had eggs in the Coto Doñana colony in the first week of May in 1956 (cf. Handbook). It is clearly irregular in its nesting-season and seems dependent on an established colony of other species. Nests vary from the extremely flimsy to the quite substantial. The light greenish-blue eggs are smaller than those of the other European herons; the clutch is usually 4-5, though quite often 6 eggs may be found. Incubation is by both sexes and the period is probably 21-22 days, though this needs confirmation. The nestling has been described in detail by Valverde (1953).

REFERENCES

RUTTLEDGE, R. F. (1949): “Bill and leg colouration of the Common Heron in
1904, p. 70.
TUCKER, B. W. (1936): “The colouring of the soft parts of the Buff-backed
——— (1949): “Remarks on a seasonal colour change in the bill and legs
21: 250-251.
1-23.
Apart from the Little Bittern (*Ixobrychus minutus*), this is the smallest European heron, only half the size of the common Heron (*Ardea cinerea*). A small, narrow head combines with a rather thick neck to give a serpent effect. The back, tail and wings are white; the rest is mainly yellowish-brown, striped on the neck, in winter and plain golden-buff and pinkish in the summer. White parts are conspicuous in flight, but at rest are concealed by the scapular plumes (see page 186).
The feathers of crown and nape are whitish edged with black, and very long—thus forming a crest of zebra ribbons which make a striking spray when raised. During nest-relief the long golden-buff feathers of the throat and upper breast, and the filmy pink and gold plumes of the mantle and scapulars, are also raised (even more than in this photograph) and make this one of the most beautiful heron displays (see page 186). Both sexes incubate the 4-6 greenish-blue eggs.
As with some other herons, the yellowish-green legs become red early in the breeding-season, but in this species the bill (with the bare loral region) changes from black-tipped yellowish-green to a clear light blue (see page 187); the bill is soon black-tipped again (as here) and fades to blue-grey, while the loral area becomes emerald green. The iris remains pale yellow. The often rather flimsy stick-nests were 3-8 feet above ground in thickets of bramble and tree-heath.
Squacco Heron (*Ardeola ralloides*) perched: Coto Doñana, May 1956

Nests may be in reeds, bushes or trees, though in this Spanish colony the species breeds only in the thickets. Like other small herons, the Squacco clumbers about and clings to the most flimsy perches: here one is balancing on some dead twigs of tree-heath (in time the vegetation is mostly killed in the densest parts of the colony). The head always looks dark and stripy, and this is useful in flight when the bird might otherwise be confused with the Cattle Egret (*A. ibis*).