

less greenish, less streaked than in the more western examples. There is a noticeable contrast in the general tone of the top of the head and of the back in the Kakamega bird which is not present in the others. Additional material from Kakamega will be required to permit any decision as to the possible distinctness of the population there.

When Chapin discovered *I. pumilio* and described it in 1958, it came as a surprise that there was a small, long overlooked species sympatric with *I. exilis*. When he later (*Ibis*, 1962, pp. 40-44) elucidated the status of still another small, superficially similar honey-guide, *I. willcocksii*, even more extensively sympatric with *I. exilis*, it became apparent that our knowledge required much re-evaluating. To find now that *pumilio* has a discontinuous distribution east as far as the Kakamega forest of western Kenya serves to accentuate still more the realization that there are still discoveries to be made in areas assumed to be well known.

A presumed trigen duck involving Mallard, Pintail and Gadwall

by JAMES M. HARRISON and JEFFERY G. HARRISON

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INTRODUCTION

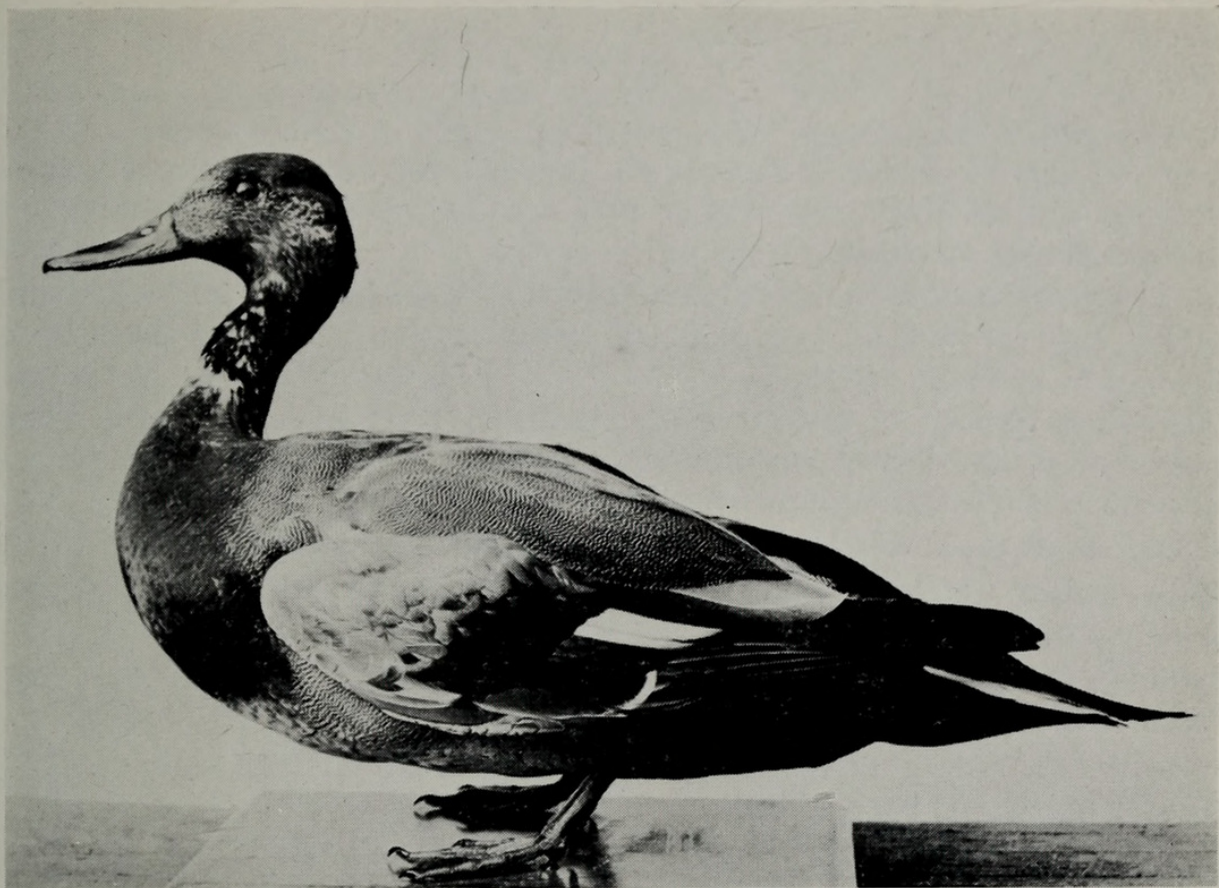
On 28th December, 1963, a remarkable hybrid duck was shot at Dersingham, Norfolk, by Mr. J. Ellis of Worksop. The bird, a drake by plumage, was single and was shot at dawn as it was flying out to sea.

Mr. Ellis made a most astute guess at its identity, namely that it was a trigen involving Mallard *Anas platyrhynchos platyrhynchos* Linnaeus, Pintail *A. acuta acuta* Linnaeus and Gadwall *A. strepera* Linnaeus. He had the bird mounted and later very kindly loaned it to us for study and we are able to support his identification.

To the best of our knowledge this is the first example of a presumed trigen duck occurring in the wild, while, of course, it is known that Mallard X Pintail hybrids are fertile and that all three species are found nesting in Norfolk.

The term trigen was introduced by the late J. L. Bonhote (1905) when a nomenclature was being sought to express individuals of multiple genetic constitutions, and at the suggestion of Professor Skeat a simple interspecific cross was termed a digen, and where more than two species were involved the individual was designated as a trigen, tetragen, pentagen and so on, according to the number of species concerned.

Before describing the present specimen it would be well to quote from Bonhote's paper (*loc. cit.*) as to the different varieties which hybridisation can produce. Such individuals can bear (1) resemblances to one or other of the parent species or (2) they may produce variations resembling species other than those involved in the parentage, or (3) individuals resembling no known species, or again (4) white coloration. A frequent variation can be recognised as being more or less intermediate in character between the parent species. Broadly speaking the interpretation of a simple interspecific hybrid presents little difficulty, but as the genetic constitution becomes more complex, the resulting morphology concomitantly becomes more obscure.



Photograph: Pamela Harrison

Presumed trigen Mallard x Pintail x Gadwall

DESCRIPTION

UPPER PARTS:

Back adjacent to neck: brownish-grey, finely though indistinctly vermiculated sepia.

Mantle: a triangular area of warmish-brown, feathers broadly edged paler warmish-brown.

Lower back: much as mantle, but paler.

Rump: as lower back, but a shade darker.

Upper tail-coverts: blackish-sepia, central pair elongated into a short "pin", a few feathers faintly warmish-brown.

Rectrices: central pair elongated, greyish-sepia, rest pale beige patterned rather as in a ♀ *A. platyrhynchos*, with brownish and whitish oblique, somewhat arrow-shaped markings with the points directed towards the tip of the tail. One outermost on left side is finely vermiculated greyish and whitish. Tips of all rectrices pale.

UNDER PARTS:

Breast: strong chestnut, on sides showing somewhat obscured but heavy barring; centrally a series of obscured spots, small bars and smaller arrow-heads. The spots are rather similar to those seen on the breast-shield of drakes of *A. p. conboschas*, and the small arrow-heads could represent very modified crescents as on the breasts of drake *A. strepera*.

Lower breast and upper belly: whitish with some bay suffusion, heavily spotted with dark sepia; lower belly and vent greyish, due to fine and close vermiculations.

Under tail-coverts: rich black.

Rectrices: pale sepia, tips lightish.

Flanks: whitish, vermiculated in grey.

Wing: (upper surface)

Coverts: near Isabella (Ridgway, Pl. iii., 23), feathers edged paler. Some median and all greater coverts broadly and variously edged blackish and faint to strong chestnut.

Speculum: innermost part whitish tipped blackish, middle part strong green, rest blackish. Lower edge of speculum finely edged white. Fore-edge of wing white, mottled "Drab Grey" (Ridgway, Pl. ii, 13), and white.

Scapulars: innermost and median "Bistre" (Ridgway, Pl. iii., 6), some uniform, others finely vermiculated in sepia. Longest, "Drab Grey" (Ridgway) uniform, somewhat paler at edges.

Primaries and secondaries: sepia darker on tips and outer vanes.

Wing (under surface) axillaries white, under wing-coverts white, tipped faintly grey; rest of under surface of wing pale grey.

HEAD AND NECK :

Forehead: a pale area lightly speckled sepia, extends for 18 mm. from feather margin at base of bill.

Crown: dusky chestnut with dull purple reflections, barred sepia.

Nape: lighter and somewhat brighter chestnut, almost uniform.

Back of neck: dark chestnut with some streaking of dusky metallic green.

Lores: as forehead, but from base of bill a chestnut loreal stripe (incomplete on left side).

Cheeks: strong chestnut, finely striated sepia anteriorly; below loreal stripes whitish, striated finely with sepia. Posteriorly, a whitish area striated sepia with dull greenish reflections. This broad pattern is to be regarded as a variation of the bimaculated pattern seen in other duck hybrids. (Harrison, J. M. and J. G., 1963).

Sides of neck: a broad dark bluish-black band measuring 38 mm. encircles the neck; below this is an incomplete and narrow white ring, most strongly marked anteriorly.

Chin and throat: dusky greenish-black.

Soft parts: not recorded (but artificial eye brown).

Tarsi and toes: dull yellowish, webs and nails dusky.

Bill: this would appear to have been darkish.

MEASUREMENTS (in mm.)

Wing: 275

Bill:

Length: 47

Width at nostrils: 19

Width at widest point: 19.5

Tarsus: 48.5

Middle toe with nail: 54.5

Tail: 120

DISCUSSION

Any discussion on hybrids, particularly when they are of unknown parentage, must involve some speculation. Notwithstanding this, the study of such material, which has been sadly neglected in the past, may well disclose underlying biological principles of great interest. Bonhote, in his paper already referred to, based as it was on birds bred in captivity and therefore of known parentage and age, may be said to have been among the first to have made a scientific approach to the problems involved.

Bonhote found that most of the hybrids discussed in his paper were fertile *inter se* and he noted that the sex ratios on hatching were approximately equal, but that there was a greater early mortality in ducks than drakes. This may be significant in the fact that many more drake than duck hybrids are reported in the wild, although, of course, they are far more easily recognised.

In so far as the trigen duck is concerned, which is the subject of this paper, being wild-shot we have no certain knowledge of its parentage or age. It was not sexed anatomically, but is a presumptive male on plumage. Neither is there any note of any other important anatomical criteria of age and it is unfortunate that the tracheal bulla was not saved for anatomical study, for it has been proved that this structure often provides valuable data. Notwithstanding this, the plumage characters are of extreme interest. In studying the characters presented by this hybrid, we were fortunate to have a pair of Mallard X Gadwall hybrids on loan from the Carlisle Museum and a drake Mallard X Pintail in our own collection. The following characters in the hybrid support the theory of its trigen constitution:—

Upper parts: the vermiculations of the back are intermediate in character between Mallard X Gadwall and Mallard X Pintail. In both the trigen and the Mallard X Pintail there is a triangular area of the mantle which is a dark brownish-grey colour, which is lacking in the Mallard X Gadwall. On the other hand, the presumed trigen lacks any black edging to the outer vanes of the scapulars as is seen in Pintail and Mallard X Pintail hybrids.

The rump and upper tail-coverts match Mallard X Gadwall, but the central pair of upper tail-coverts are elongated into a short "pin", although not as marked as in Mallard X Pintail, nor do these two feathers show any tendency to curl upwards. The underlying pair of central tail feathers are also somewhat elongated in the trigen.

Under parts: the chestnut breast shield is predominantly Mallard, as is seen in varying degrees in different individuals of Mallard X Pintail. The amount of spotting and barring suggests Mallard X Gadwall, but only very vestigial crescentic markings are seen on the breast.

Wing-coverts and speculum: those of the trigen are virtually indistinguishable from Mallard X Gadwall.

Head and neck: these tend to resemble Mallard X Gadwall, particularly in the blue-black coloration of the neck anteriorly, which is also present as a strong patch of colour in the drake Mallard X Gadwall (Harrison J. M. and J. G., in press). The narrow whitish neck ring is intermediate

between that of the Mallard X Gadwall, which is buff, and that of the Mallard X Pintail, which is white. The cheeks are strongly chestnut, as we have described in some Gadwall drakes (Harrison J. M. and J. G. 1963.)

The dull purple reflections on the crown and the greenish reflections on the cheek behind the eye support the influence of Pintail and Mallard respectively.

SUMMARY

A wild shot presumptive trigen duck is described, showing characters which may be attributed to Mallard, Pintail and Gadwall, as well as to hybrid Mallard X Pintail and Mallard X Gadwall. The bird shows a tendency towards the development of a bimaculated facial pattern.

ACKNOWLEDGMENTS

We are most grateful to Mr. J. Ellis for the loan of the trigen and to Dr. Pamela Harrison for the photograph of the specimen. We must also thank Mr. A. Blezard, Keeper of Zoology at the Carlisle Museum for the loan of a pair of Mallard X Gadwall hybrids which are to be the subject of a further paper.

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The nest advertisement display as a *Passer*/Ploceidae link

by C. J. O. HARRISON

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The sparrows of the genus *Passer* were shown by Suskin (1927) to be related closely to the true weavers, Ploceidae, by reason of their structure, but, apart from these morphological affinities there is little obvious indication of relationship. The domed nest sets the sparrows apart from the finches, Fringillidae, with which they were earlier grouped, but Collias and Collias (1964) show that in its loose structure and haphazard arrangement of material the typical sparrow nest differs from the woven nests of most weavers. Behaviourally there is little evidence to link the two groups. More recent studies suggest, however, that the nest advertisement display may reveal a strong ethological link between the two.

This display is very poorly developed in the House Sparrow, *Passer domesticus*, but occurs in a much more striking form in the Dead Sea Sparrow, *Passer moabiticus*. This species was little known, but the Jordan Valley Expedition of 1962, led by Guy Mountfort, to whom I am indebted for permission to use this data, filmed this species among others and the film was shown at the British Ornithologists' Union Conference at Southampton in 1964. In addition still photographs were taken and I am deeply indebted to Eric Hosking for the photograph shown here and for the opportunity to examine others.



Harrison, J M and Harrison, J G. 1965. "A presumed trigen duck involving mallard, pintail and gadwall." *Bulletin of the British Ornithologists' Club* 85, 22–26.

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