

TAXONOMIC STATUS OF THE BOBWHITE QUAIL IN NEW ZEALAND

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The introduced Bobwhite Quail (*Colinus virginianus*) in New Zealand have not hitherto been determined subspecifically and are in the *Checklist of New Zealand Birds* (1953) listed as *Colinus virginianus* subspecies. As wild populations of this bird persist in the Waikaremoana area where they have been hunted as game birds for many years (Westerskov, 1956) it is not only of theoretical but also of practical value to find out where the stock originally came from, and thus the subspecies to which the New Zealand birds belong.

ORIGIN OF STOCK

The five shipments of Bobwhite Quail arriving in New Zealand between 1899 and 1902 were supplied by an American dealer in game birds, Mr Charles Payne, Wichita, Kansas. Examination of the annual reports of acclimatization societies, the relevant minute books of the Wellington Acclimatization Society, and files of the Department of Internal Affairs have not revealed the localities where the introduced birds had been trapped; but Phillips (1928) records that Payne about 1890 to 1895 began to ship large quantities of Bobwhite Quail mostly to eastern and north-eastern United States and that they were trapped in Kansas and the Indian Territory (later to become part of Oklahoma). After a time he had to stop as he violated the laws protecting game on Indian lands; later he obtained Bobwhites from Texas under a so-called 'scientific permit' until this method was stopped by the combined action of thoroughly aroused Texas sportsmen. Bobwhite Quail were very plentiful in Kansas at the time of Payne's mass-exports; they had increased rapidly when farming operations began.

BOBWHITE SUBSPECIES

The genus *Colinus* is endemic to the Americas. The species *Colinus virginianus* occurs in eighteen subspecies from southern Canada and the United States in the north through Cuba and Mexico to Guatemala in the south (Friedmann, 1946). Bobwhite Quail have been introduced as game birds to western United States, British Columbia and Manitoba, the West Indies and New Zealand. They were unsuccessfully introduced in China, France, Germany, Sweden, and Denmark (where the results of recent plantings cannot be evaluated yet).

There are six subspecies of Bobwhite Quail in the United States (Aldrich, 1946): (1) New England Bobwhite, *C. v. marilandicus*, in New England, Pennsylvania and Virginia; (2) Eastern Bobwhite, *C. v. virginianus*, from Virginia, south through the Carolinas, Georgia and northern Florida; (3) Florida Bobwhite, *C. v. floridanus*, lower part of the Florida peninsula; (4) Interior Bobwhite, *C. v. mexicanus*, interior eastern United States from New York, south-eastern Ontario, Michigan, Wisconsin, Minnesota and eastern South Dakota in the north to the Mexican Gulf; western boundary of range is in Kansas, Oklahoma; on the eastern side meets with subspecies mentioned above; (5) Plains Bobwhite, *C. v. taylori*, from central South Dakota through the Great Plains to northern Texas; (6) Texas Bobwhite, *C. v. texanus*, central and southern Texas. A seventh subspecies, the Masked Bobwhite, *C. v. ridgwayi*, was formerly present in southern Arizona, but is now extinct in this area and found only south of the United States-Mexico border.

The Eastern Bobwhite has been introduced into the West Indies and both eastern and western United States. The Florida Bobwhite has been introduced in the Bahama Islands. The Interior Bobwhite has been introduced both in eastern and western United States. The Plains Bobwhite has been established

in Washington, Oregon and Idaho, but has also been introduced in eastern states. The Texas Bobwhite has been transplanted extensively into many parts of the United States.

Wichita, Kansas, from where Mr Payne operated, is almost the geographical centre of the range of the Plains Bobwhite. Both his trapping in Kansas and Oklahoma were within the range of this subspecies. The only two other subspecies he is likely to have obtained for shipment are *mexicanus* from east of Kansas, and *texasus* from Texas.

These three subspecies differ in the following respects:

(1) SIZE. The Texas Bobwhite is smaller than *mexicanus* and *taylori*, which are approximately of the same size:

	Wing (mm)	Tail (mm)	Culmen (mm)	Tarsus (mm)
<i>C. v. mexicanus</i> —	106-119 (112)	49-71 (62)	12.5-15.5 (14.4)	30-36 (33)
<i>C. v. taylori</i> —	105-117 (112)	56-68 (62)	13-15 (14)	30-33 (32)
<i>C. v. texanus</i> —	102-111 (108)	53-67 (61)	13.5-15.5 (14.6)	30-33 (32)
(All male specimens)				

(2) COLORATION: The small Texas Bobwhite is pale, excessively greyish above and relatively heavily barred below; it has a more variegated appearance than *mexicanus* and *taylori*; the back patch in *texasus* is flecked and barred with grey and black to a high degree; the whiteness of the light markings and edgings of the remiges further adds to the variegated appearance. The Interior Bobwhite is of a medium shade with a greyish wash; the back patch is a darker, warm reddish as contrasted with the paler, more greyish back patch in *taylori*. The Plains Bobwhite has upper parts much lighter and greyer than in *mexicanus*; rump and tail greyish with no brown or reddish brown; dark areas of back, tertials, and scapulars more sharply defined and less mottled with brown.

NEW ZEALAND BOBWHITES

The New Zealand specimens examined consisted of two Bobwhites — a cock and a hen — shot at Ruapapa, Wairoa, in 1952, and now kept in the Dominion Museum, Wellington, and thirty-seven specimens — thirteen cocks and twenty-four hens — from the original shipments to Wellington in 1900, also kept in the Dominion Museum.

The two birds shot in 1952 — in an area where they have persisted since the liberations in 1900 — have the following measurements:

Young male, Ruapapa, 10/5/1952 — wing 113 mm; tail 58 mm; culmen 14.5 mm; tarsus 29 mm. Serial No. Dom. 2406.

Adult female, Ruapapa, 30/6/1952 — wing 115 mm; tail 57 mm; culmen 14.8 mm; tarsus 30 mm. Serial No. Dom. 2405.

Measurements of ten cocks of a shipment in 1900, landed in Wellington, are: wing 107-116 (111.5) mm; tail 58-66 (62.3) mm; culmen 14.5-16.2 (15.0) mm; tarsus 28.5-31.0 (29.6) mm.

Measurements of ten hens obtained similarly are: wing 107-115 (110.4) mm; tail 57-63 (59.9) mm; culmen 14.4-15.0 (14.8) mm; tarsus 29-31 (29.8) mm.

A comparison of the mean measurements of males of the four groups: *mexicanus*, *taylori* and *texasus* from the United States and New Zealand specimens is given in Table 1.

TABLE I

Mean measurements in mm of 67 male specimens of *C. v. mexicanus*, 15 male specimens of *C. v. taylori*, 52 male specimens of *C. v. texanus* (from Aldrich, 1946) and 10 New Zealand specimens.

	Males			
	<i>mexicanus</i>	<i>taylori</i>	N.Z. specimens	<i>texanus</i>
Wing	112	112	112	108
Tail	62	62	62	61
Culmen	14.4	14	15	14.6
Tarsus	33	32	30	32

From the measurements alone it appears that the New Zealand population of Bobwhite is not derived from *texanus* stock. Furthermore, the New Zealand specimens have *not* the back patch heavily flecked and barred with grey and black, and their appearance does not compare generally with examined specimens of this subspecies.

The acclimatized population of Bobwhites in this country accordingly stem from *mexicanus* or *taylori* stock. Examination of series of skins in the U.S. National Museum, Washington, D.C., as well as comparison with selected study skins sent to me from the National Museum collection, have proved that the New Zealand Bobwhites are the Plains Bobwhite, *Colinus virginianus taylori* Lincoln. The lighter and greyer coloration generally, the lack of reddish brown on back and rump, and the paler back patch in the examined New Zealand specimens characterize them as belonging to the subspecies *taylori*.

The Plains Bobwhite was first described from specimens collected by Dr F. C. Lincoln at Laird, Yuma County, Colorado, in 1915 (Lincoln, 1915).

An interesting point in connection with the subspecific status of New Zealand Bobwhites is the fact that the original stock was trapped and shipped here (1899-1902) before the large importations of Texas Bobwhites into the northern ranges of the Bobwhite. These importations began in 1910 (Phillips, 1928) and the result is that the Bobwhite Quail populations of many eastern states as well as in the west are 'now hopelessly mixed beyond the point of subspecific identifiability' (Friedmann, 1946). The New Zealand Bobwhite population has remained undisturbed from introductions of other subspecies and should thus be pure *C. v. taylori*.

Another interesting point in the establishment of the Plains Bobwhite in New Zealand is the fact that they only became permanently acclimatized within latitudes corresponding closely to the areas from where they came. Wichita in Kansas, the centre of Bobwhite Quail exports, is situated between 37 and 38° N. In New Zealand Bobwhites were liberated in many localities over a vast range from 36° S. in Northland to 47° S. in Stewart Island (cf. Westerskov, 1956). Up till 1923 or later, populations were established in the South Auckland area, between 37 and 38° S., and the Wairoa-Waikaremoana area where Bobwhites are permanently established in various localities is situated between 38 and 39° S. Roughly, light conditions and day lengths are similar in the area of origin and the area where these birds became acclimatized.

VERNACULAR NAME

The Bobwhite Quail has hitherto in New Zealand literature been referred to as Virginian Quail (Bobwhite has been given as a second choice), as in, for example, Thomson (1922), Oliver (1930), and McKenzie (1953). In the shooting schedules of the New Zealand *Gazette* they have always been listed as Virginian Quail, which name was also given to this species in the *Checklist of New Zealand Birds*.

It is undesirable that a North American bird acclimatized here, a game bird about which there is an extensive literature, should be called by a different name from that under which it is known in its country of origin. The official name of this species in North America is Bobwhite Quail, often

in short referred to as Bobwhite (Stoddard, 1931; *Checklist of North American Birds*, fifth edition, from the manuscript belonging to Dr F. C. Lincoln).

It is suggested that this bird in future be called Bobwhite Quail to accord with its name in its country of origin, to avoid misunderstanding, and to facilitate location of literature references.

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SUMMARY

The Bobwhite Quail introduced to New Zealand now only persisting in scattered populations in the Wairoa-Waikaremoana area, belong to the western prairie form, the Plains Bobwhite, *Colinus virginianus taylori* Lincoln. The introduced birds came from Kansas and/or the old Indian Territory around 1900. This bird ought in future to be called Bobwhite Quail and not Virginian Quail.

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THE WHITE HERON (*Egretta alba*) IN NEW ZEALAND

An inquiry based on available records 1951-54

By H. G. Warburton

This report has been written up from the observations and notes of many people throughout New Zealand that were collected and sorted out by Mr D. Brathwaite, Napier, then handed on to me to see what information I could sift from them. In its present form, this could act as a pilot inquiry into the status and general movements of the White Heron throughout New Zealand. From the details of observations and dates, I have arranged a summary for each year, month by month, as follows: