

## INTRODUCTION OF THE HUNGARIAN PARTRIDGE INTO THE UNITED STATES.

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During the years 1908 and 1909 nearly 40,000 partridges have been transplanted from the game covers of Europe into those of America. Previous to 1908 less than 8,000 had been imported. This sudden and strong tide of popular favor for the partridge has created a demand for information concerning it.

In general, attempts to acclimatize foreign birds and mammals have been unsuccessful, or, if successful, have proved disastrous. The English sparrow in America, the mongoose in Jamaica, and the rabbit in Australia are notable examples of disastrously successful acclimatization, while the attempted establishment of the European quail in the United States and Canada thirty years ago is a well-known instance of expensive failure. On the other hand, the introduction of the pheasant into Europe, St. Helena, Australia, New Zealand, and recently into the northwestern part of the United States, of the gray partridge into Norway and Sweden, and the reintroduction of capercaillie into Scotland show that under some circumstances acclimatization may be successful and beneficial.

The present popularity of the European partridge for introduction into American covers may be justified by future developments, but the history of past experiments does not lend encouragement to such a view. The first widespread effort to establish a foreign game bird on American soil occurred from about 1877 to 1881, when a number of sportsmen of the eastern part of the United States and Canada undertook the importation and liberation of the migratory quail of Europe—Messina quail, they were generally called, as the supply was obtained from Messina, Italy. In three or four years several thousand of these small quail were brought from Italy and liberated in Iowa, Maryland, New Jersey, New York, New England, Ontario, Quebec, and elsewhere. The experiments failed. The birds mated, built nests, and reared young, but practically all disappeared with the autumnal migration.

The interest excited by the efforts to replenish our covers with European quail led to attempts to introduce various exotic game birds,

especially in Illinois, the game laws of which were soon modified so as to protect, in addition to native birds, such unusual species as the sand grouse and chukar partridge of India and the red-legged or French partridge of Europe, as well as ringneck, English, versicolor, golden, silver, and copper pheasants, and those gorgeously colored pheasants known as tragopans. Indiana protected several of these same species, while Maine and New Hampshire added the black game and capercaillie of Europe to their list of protected game. Most of these birds disappeared shortly after liberation. Meanwhile, in 1880-81, Oregon made its now celebrated attempt to acclimatize the ringneck pheasant. The success of this introduction revived the spirit of acclimatization, and pheasants, both ringnecks and English ringnecks, were quickly introduced into nearly every State in the Union and most of the Provinces of Canada. For more than twenty years determined and painstaking efforts have been made to establish these pheasants in America; but with the exception of a few regions, such as the Willamette Valley in Oregon, several circumscribed localities in Washington and British Columbia, the Genesee Valley in New York, and possibly one or two other places, it is safe to say that the pheasants surviving in the United States and Canada not in private preserves have cost (on the basis of dividing all expenses of the experiments by the number of living birds) not less than \$50 apiece. Furthermore, the few that are left will probably soon disappear if the stock is not replenished by fresh liberations.

The unsatisfactory results of these ventures, together with one or two bad seasons for two of our principal native game birds, the bobwhite and the ruffed grouse, have turned attention to the European partridge; and this interest has been intensified by the inability of Northern States to procure bobwhites for restocking depleted covers, owing to the recent adoption of stringent nonexport restrictions by Southern States, the source of former supplies. But the failures of the past make it wise to consider carefully whether the partridge is better suited for acclimatization than were its predecessors in favor.

#### CONFUSION OF NAMES.

Most of the partridges recently imported from Europe are known as Hungarian partridges. Other names have been applied to various consignments, such as English partridge, European partridge, Bohemian partridge, German partridge, and German quail. These birds, however, all belong to the one species, *Perdix perdix*, ordinarily known as the gray partridge, in contradistinction to the red-legged partridge (*Caccabis rufa*) of southern Europe (sometimes called the French partridge). While there is no specific distinction among

the partridges imported from different parts of Europe, there are certain differences recognized by the trade which appear to be substantial. It is generally agreed that the partridges of Hungary and Bohemia are larger and hardier than those of England. This point of view was well expressed by the writer of a recent article in the London Field, who says:

The advantage of turning out Hungarian birds can not be overestimated. They are suitable from every point of view—stronger and hardier than our native birds and therefore more capable of rearing large coveys. As an example of their hardiness, I may mention that last autumn two coveys of these birds found their way to an elevation of 2,000 feet on the Badenoch moor, having been reared on the arable ground below. There they wintered, and in spite of the snowstorms throughout January are still apparently in good condition.<sup>a</sup>

The writer adds that Hungarian birds seem to be less dependent on the proximity of arable lands than the native British partridge. These differences may perhaps be accounted for by the fact that the birds of Hungary and Germany have not been so closely interbred or so closely confined as those of English preserves, or even those at large in English coverts. Such differences doubtless exist between partridges of different sections throughout their range; it is well known that birds are influenced in size, coloration, and other characteristics by their environment. Such variations may be made serviceable in improving stock, but in the absence of specific differences will probably disappear in time, so that Hungarian partridges bred side by side with English partridges will be indistinguishable from them in the course of a few generations.

#### RANGE.

The gray partridge (*Perdix perdix*, Pl. XIV) nominally occupies a large territory. Its range extends from the British Isles and northern Portugal on the west to the Barabinska Steppes and Altai Mountains of central Asia on the east, southward to Naples, northern Greece, the Caucasus, Asia Minor, and northern Persia, and northward to southern Norway and Sweden and south central Russia. The climate in this range corresponds in large degree to that of the eastern half of the United States, excepting the Gulf States and the extreme northern part—that is, the Transition and Upper Austral life zones.

#### SIZE.

In size the partridge is between the bobwhite (our southern 'partridge') and the ruffed grouse (our northern 'partridge'), as is shown by the comparison given in the table on the following page.

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<sup>a</sup> London Field, CXIII, p. 786, May 8, 1909.

*Comparative sizes of bobwhite, gray partridge, and ruffed grouse.*

	Length.	Extent.	Weight.
	<i>Inches.</i>	<i>Inches.</i>	<i>Ounces.</i>
Bobwhite.....	10-10½	14½-15	5½- 6½
Gray partridge.....	12-14	18 -22	12 -13
Ruffed grouse.....	16-18	23	30 -40

## HABITS.

Whatever differences in weight and strength there may be between the Hungarian partridge and the ordinary partridge of England, their habits are practically the same. Like the bobwhite, the partridges of Europe sleep on the ground in circular groups with heads pointed outward, ready to detect an enemy in any direction and to scatter to all points of the compass should danger threaten. Wheat, clover, millet, and potato fields are said to be favorite feeding grounds. Their food, like that of the bobwhite, embraces considerable variety, including insects of various kinds (which they apparently prefer to corn), cabbage leaves and other green food, wild berries, and doubtless many other kinds of sustenance furnished by field, forest, and garden.

Partridges offer much the same kind of shooting as the bobwhite; when flushed they scatter explosively and may fly a quarter of a mile before lighting; however, they do not usually lie so well to dogs.

## NESTING.

Partridges are not polygamous, but separate into pairs in spring and seek places for nesting and for raising their broods. At this time the males are usually exceedingly pugnacious, and each will jealously guard his chosen territory and viciously attack any intruders of his kind. The nest, which is very simple, is constructed in May, earlier or later in the month according to latitude. The number of eggs laid is variable, depending on food supply and weather. In England, under unfavorable circumstances, the hen partridge may content herself with 6, while with more propitious conditions she may lay as many as 20 before beginning the labor of hatching. Sometimes two or more partridges lay in one nest.

The eggs can be readily distinguished from those of the bobwhite and ruffed grouse by their slightly smaller size and their olive color, as contrasted with the white of the bobwhite and the buff of the ruffed grouse. In shape they are a pointed oval.

The period of incubation is said to be from 21 to 26 days, but the former number is probably more nearly normal than the latter. The chicks are prettily marked with dark longitudinal stripes on



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head and back, like young bobwhites, and, like the latter, become indistinguishable in the field from adults when, with cold weather, the scattered coveys unite into large flocks.

#### THE HUNGARIAN PARTRIDGE IN ENGLISH PRESERVES.

The utility of the Hungarian partridge in improving stock was discovered by the preserve owners of England a decade ago, and by 1904 was believed to have been thoroughly established. A contributor to the *Field* in that year says:

The value of Hungarian partridges has of late years been fully demonstrated, and their introduction has now long passed the experimental stage. Several shootings might be mentioned where within the last decade the bags have been doubled, and even trebled, where 200 brace are now killed in a day on beats which formerly yielded at most 120 head. The adoption of driving is partly responsible for such marked improvement, but in all cases the owners and keepers are satisfied that the extensive introduction of Hungarian partridges is at the root of the whole matter.<sup>a</sup>

About five years ago the rearing of partridges in confinement (known as the French method) was suddenly and generally introduced in England. By this method, which has been practiced in France and probably in parts of Holland for a quarter of a century, the partridges are confined in a central cage. The individual birds are distinguished by differently colored bands of ribbon on the legs, so that their predilections may be more satisfactorily noted. When the mating season arrives, the pairs are allowed access to side pens, which radiate from the general pen. As soon as a pair retires to one of these breeding pens, communication with the main pen is cut off, and the birds are left to breed in seclusion, protected from enemies and inclement weather. When the chicks are a few days old, they and the parent birds are liberated.<sup>b</sup>

Despite the attempt in England to improve stock by the introduction of Hungarian partridges, and notwithstanding the adoption of the French method of rearing, the partridge shooting has steadily grown poorer during the past few years, a condition which a recent contributor to the *London Field* suggests should be investigated, as it is not due to rainy seasons, poachers, or vermin. The growing custom of 'driving' partridges may be responsible, at least partly, for the decrease of birds. Where driving is practiced, beaters are sent through the coverts to flush the birds, while the 'guns' (shooters) are stationed outside and shoot the birds as they fly overhead from one covert to another. By this method it is possible to secure a

<sup>a</sup> Hungarian Partridges, by H. B. M. *London Field*, CIV, p. 960, Dec. 3, 1904.

<sup>b</sup> An interesting account of this so-called French method of rearing partridges, originally contributed by C. J. Cornish to the *Cornhill Magazine*, appeared in *Forest and Stream*, LXIII, p. 198, Sept. 3, 1904.

larger percentage of the birds than by 'walking up' or shooting over dogs, and the temptation to increase the bag beyond a safe limit is very strong. The season of 1909 was particularly poor; on some of the best grounds in England coveys did not average the usual number of birds and were in much poorer condition than they should have been. On the higher and drier land they did fairly well, but even there the coveys were reported to be much smaller than usual.<sup>a</sup>

#### THE HUNGARIAN PARTRIDGE IN AMERICA.

Owing to the confusion of names, it is impossible to separate with certainty the Hungarian from the English partridges in the records of importations into America, but the earliest attempt to introduce the Hungarian partridge as such into American covers seems to have been made in 1899,<sup>b</sup> when 24 birds brought from Europe were placed on a private preserve at Lynnhaven, Princess Anne County, Va. This venture was subsequently transferred to Montague, Essex County, Va., and fresh importations were made until by 1906 about 180 birds had been brought over. Meantime, sportsmen and preserve owners in other States were making occasional importations. In 1900, 97 of the birds were imported and liberated in the Willamette Valley, Oregon, where the ringneck pheasant had been successfully introduced a few years previously; in 1904, 192 were liberated on Hilton Head Island, South Carolina, and 57 in Fraser Valley and other places in British Columbia; in 1905, 20 were placed on a preserve in Massachusetts, and 91 on one in North Carolina; in 1906, besides a fresh lot that went to the Virginia preserve mentioned, birds were placed on preserves in New York, New Jersey, Pennsylvania, North Carolina, and Mississippi. In addition to these, which consisted of comparatively small consignments, 1,000 were imported in 1906 by the state game commissioner of Illinois and 200 by the state game warden of Kansas for restocking the covers of those States. The last two importations are apparently the earliest official efforts to introduce the Hungarian partridge into any State. In 1907 about

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<sup>a</sup> London Field, CXIV, p. 465, Sept. 4, 1909.

<sup>b</sup> As far back as the latter part of the eighteenth century the gray partridge had been introduced into the United States by Richard Bache, son-in-law of Benjamin Franklin, who stocked his place on the Delaware River, near the present town of Beverly, N. J., with English pheasants and partridges in large numbers; and attempts were subsequently made from time to time by wealthy landowners in New Jersey and Virginia to introduce these birds, but all were failures. The most elaborate was made by Pierre Lorillard, who established three game preserves of 100, 40, and 25 acres, respectively, on his place at Jobstown, Burlington County, N. J., known as the Rancocas Stud Farm, and put up costly houses for breeding partridges and pheasants, which he imported from England for the purpose. There is now no trace of any of these birds. (Forest and Stream, XXV, p. 103, Sept. 3, 1885.)

2,500 more were brought in for this purpose, and in 1908 the number of official importations rose to 12,000, while in 1909 it advanced to the important total of 27,000. The States thus experimenting with the acclimatization of this popular game bird include California, Connecticut, Delaware, Illinois, Indiana, Kansas, Nebraska, New Jersey, and Washington.

The total importations of partridges from July 1, 1900, to December 31, 1909, are shown in detail in the following table:

*Importations of European partridges, July 1, 1900, to December 31, 1909.*

Period.	Un-specified.	Hungarian.	Total.	Period.	Un-specified.	Hungarian.	Total.
July 1 to Dec. 31, 1900...	815	200	515	1906 .....	311	2,250	2,561
1901.....	40	20	60	1907 .....	422	2,556	2,978
1902.....	4	62	66	1908 .....	957	11,875	12,832
1903.....	72		72	1909 .....	1,665	27,425	29,090
1904.....	23	228	251	Total.....	4,173	44,797	48,970
1905 .....	364	181	545				

While every effort has been made to insure accuracy in these figures, they are only approximate, because sometimes it is impossible to ascertain the mortality on the ocean voyage, the figures being based in these cases on the number shipped. The mortality en route, under the best care, may be safely placed at 20 to 25 per cent, and is sometimes much greater. Thus, of 400 Hungarian partridges shipped from England in 1906, consigned to the Essex Park Game Preserve in Virginia, only 50 reached their destination alive. While this loss of 350 out of 400 in crossing the ocean and making the land voyage from New York to Essex County, Va., is exceptionally great, other instances might be cited where the percentage of loss was very high, even after the experience derived from ten years of importation. On the other hand, an occasional consignment will come through very well. Thus in a recent shipment of 300 birds from Bohemia to Windsor Locks, Conn., only 5 died.

#### ACCLIMATIZATION EXPERIMENTS MADE BY STATES.

**CALIFORNIA.**—Two hundred Hungarian partridges were liberated in California in 1908 and about 1,600 in 1909. These were placed in several counties in both lowlands and small mountain valleys up to several thousand feet above sea level. Coveys of young birds resulting from the 1908 plantings were reported from 9 counties. Interest in the experiment remains unchanged.

**CONNECTICUT.**—The game commission of Connecticut imported 740 Hungarian partridges in the spring of 1908 at a cost of \$2,640



and liberated them in lots of 10 pairs in nearly every county. Since then about 2,500 more have been obtained and liberated. The commission men and the sportsmen of the State are greatly interested and find much encouragement in the number of coveys noted. According to a communication to the American Field of October 9, 1909, the birds seem to have done well during the past breeding season, though their habit of nesting in hay fields has caused the loss of some broods. Arrangements have been made for securing and liberating a large number of Hungarian partridges during the spring of 1910.

**DELAWARE.**—In Delaware 100 pairs of Hungarian partridges were distributed in 10-pair lots in 1909. No further experiment will be made until the result of these plantings is known.

**ILLINOIS.**—Since its first importation in 1906, Illinois has imported several thousand partridges for distribution and breeding experiments at the state game farm. The results are yet doubtful.

**INDIANA.**—The game commissioner of Indiana has distributed several thousand Hungarian partridges throughout the State. He reports that he is receiving favorable accounts of these plantings, and that the birds are staying close to the localities in which they have been placed. The unique plan has been followed of liberating partridges and pheasants on preserves ranging in size from several hundred to several thousand acres and composed of contiguous farms, the owners of which have agreed to protect the birds. Thus far this method seems to have met with more than average success.

**KANSAS.**—Several hundred Hungarian partridges have been liberated in Kansas in the last four years, but are said by the fish and game department of the State, under date of December 2, 1909, to "have made no showing whatever."

**NEBRASKA.**—In Nebraska the chief deputy game warden secured about 250 Hungarian partridges in the latter part of 1907 with funds raised by popular subscription. The birds were distributed throughout the State and appear to have done well. The warden reports that he has information of large coveys of birds at all these plants except three not heard from.

**NEW JERSEY.**—About three years ago a few pairs of Hungarian partridges were liberated in New Jersey by the Essex County park commission, but the results were not satisfactory. In 1909 the fish and game commission distributed 800 partridges in small lots to persons agreeing to look after them, but the birds failed to multiply as rapidly as had been expected, and it was the opinion of the commission that 1,353 pheasants liberated at the same time had done better than the partridges. The experiment will be continued in 1910, and arrangements have been made for the liberation of 3,000 partridges and 4,000 pheasants.

WASHINGTON.—More than 2,000 Hungarian partridges have been liberated in Washington in the last three years, principally by county game wardens. It is reported by a contributor to the American Field of December 4, 1909, that along the northern border of the State Hungarian partridges have become almost as plentiful as pheasants.

#### CONCLUSION.

While most of the reports received of these various colonization experiments with the Hungarian partridge are favorable, persons interested should not be too sanguine of ultimate success. Similarly favorable accounts were received after the attempted acclimatization of the migratory quail of Europe and of English and Asiatic pheasants. In fact, the general rule in all such experiments is unexpected success at the outset, followed sooner or later by equally unexpected failure. After multiplying with surprising rapidity, the subjects of such experiments usually disappear with corresponding rapidity. Rev. H. A. Macpherson, an English authority, says with reference to attempts to colonize the partridge:

The partridge solves the problem of existence better, on the whole, than might be expected, though we do not mean that every attempt to introduce partridges is likely to succeed, for such experiments have failed signally, even when outward circumstances appeared to be most promising. On the contrary, some attempts at the colonization of partridges proved full of disappointment, the strange stock becoming extinct in a very short time and leaving no trace of its existence. The same may be said, however, of almost any species that we try to naturalize in a strange locality.<sup>a</sup>

Not only is acclimatization of an exotic species difficult, but it may, if successful, lead to unexpected results. Birds and mammals often disclose new traits on colonization in a strange land. Thus the skylark, chaffinch, yellowhammer, blackbird, linnnet, and other small songsters of Europe, which are more or less innocuous in their native land, became such pests when transplanted to New Zealand that they receive regular consideration in agricultural reports under the head of 'The small bird nuisance.' It is possible that successful acclimatization of European game birds might be followed by changes of characteristics that would lower their value as objects of sport and perhaps render them objectionable to agriculturists.

The possible effect on native game birds of the successful introduction of the partridge should also receive careful consideration. The partridge is pugnacious at breeding time, and, while there is small probability of its killing our native birds by direct assault, its presence may create a struggle for nesting places that will prove serious, at least to the bobwhite.

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<sup>a</sup> The Partridge. By Rev. H. A. Macpherson, Fur and Feathers Series, p. 5, 1893.

The experiment has already been a costly one. At \$6 a pair (a low average price) the birds brought in have cost \$150,000, an amount with which much might have been accomplished had it been applied to the restoration and protection of our native game birds. American birds are already adapted to American conditions, and their value is well proved. They hold a place in the estimation of sportsmen that can not be rivaled by any introduced bird, and the farmer appreciates the important service they render as destroyers of insects, in which the bobwhite particularly is almost unequaled. The Hungarian partridge may never satisfactorily adapt itself to conditions in this country; or it may develop objectionable traits. Hence it would seem wise to devote less energy and money to the establishment of this and other exotic species and give more attention to the restoration and maintenance of our native game birds.