

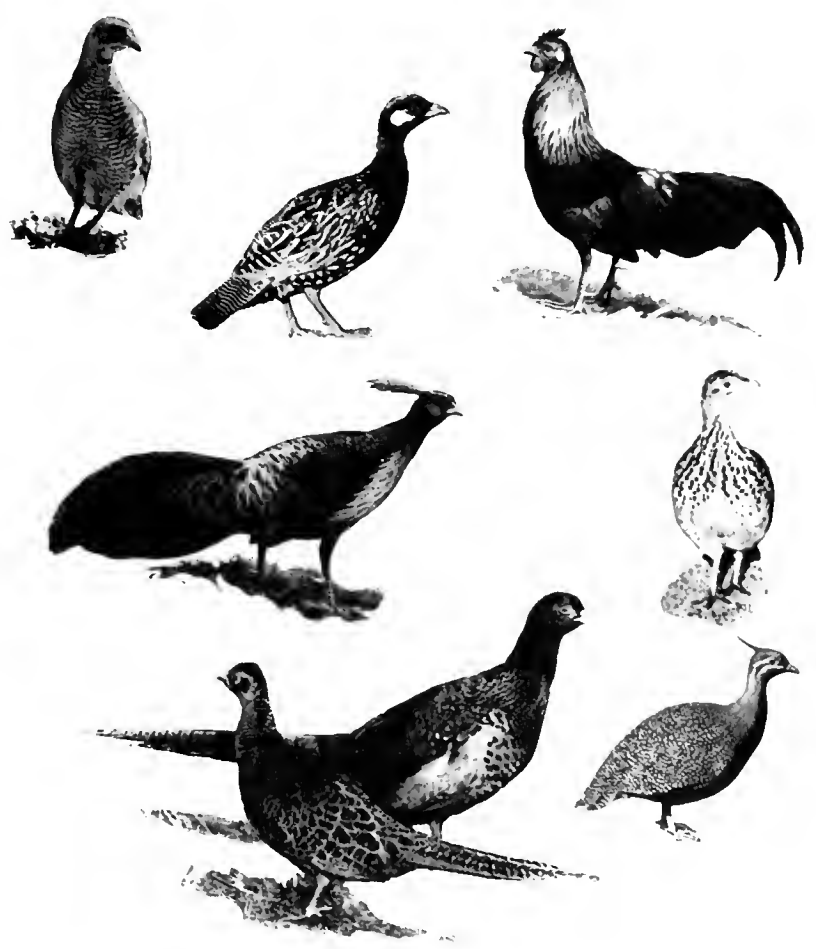


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# SUMMARY OF FOREIGN GAME BIRD LIBERATIONS 1960 to 1968 AND PROPAGATION 1966 to 1968

- Black Francolin
- Gray Francolin
- Bamboo Partridge
- Red-Legged Partridge
- Turkish Chukar
- Seesee Partridge
- Red Junglefowl
- Iranian Pheasants
- Japanese Green Pheasant
- Korean Pheasant
- Afghan Pheasant
- Kalij Pheasant
- Reeve's Pheasant
- Himalayan Snowcock
- Argentine Tinamous
- Chilean Tinamous



UNITED STATES DEPARTMENT OF THE INTERIOR  
 FISH AND WILDLIFE SERVICE  
 BUREAU OF SPORT FISHERIES AND WILDLIFE  
 Special Scientific Report—Wildlife No. 130

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ON THE COVER

Gray Francolin

Red Junglefowl

Black Francolin

Kalij Pheasant

Spotted Tinamou

Iranian Pheasants

Crested Tinamou

# SUMMARY OF FOREIGN GAME BIRD LIBERATIONS 1960 to 1968 AND PROPAGATION 1966 to 1968

By

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Special Scientific Report--Wildlife No. 130  
Washington, D.C. • February 1970

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## The Foreign Game Investigation Program

Year by year the number of individuals seeking recreation through hunting is increasing. Yet the area available for this sport is slowly decreasing. Likewise, much of the habitat which mothers the game crop is becoming less and less able to produce shootable surpluses under the impact of clean farming, over-grazing, drainage, power equipment, increased use of insecticides and herbicides, scientific forestry, and urbanization.

Faced with this situation, common sense dictates an all-out effort to increase habitat productivity. But there are many habitats which have been so thoroughly changed by man that native game species can no longer maintain themselves therein in numbers sufficient to provide good hunting. Competing interests and the cost of reversing this trend are such that only a part of these lands can be restored to reasonable productivity in the foreseeable future. There are other coverts which never were fully occupied by native game birds or mammals possessing the characteristics requisite to survival in the face of today's intensive hunting pressure. For these, new adaptable species possessing a high hunting resistance should be sought, so that such areas might provide greater hunting opportunities. This is the logic behind the foreign game investigation program as developed cooperatively by the U.S. Bureau of Sport Fisheries and Wildlife, 45 cooperating State Fish and Game Commissions, and the Wildlife Management Institute.

The program is based on requests for assistance from State Fish and Game Commissions following an ecological appraisal of their game-deficient habitats. After such information is in hand, biologists are assigned to make a careful study of game species occupying similar habitats including climates in foreign countries. From dozens considered, one or two may be selected on the basis of their characteristics, habits, reproductive capacity, resistance to predation and disease, relationship to agriculture, ability to withstand heavy hunting pressure and the possibility of competition with game species native to the United States. Modest, carefully planned trial introductions of these species, utilizing wild-trapped or farm-reared individuals, carefully quarantined before shipment, are then carried out in cooperation with interested State Fish and Game Commissions. Unplanned or "hit and miss" introductions are actively discouraged.

## Abstract

State Foreign Game Investigation Program reports covering the success of trial liberations from 1960 through 1968, and propagation 1966-1968 of foreign game birds are summarized with the details presented in tabular form. During 1966-1968 a total of 19 species were used as breeders under the program on the game farms for a combined production of 128,405 birds with 94,486 liberated in these years. A small number of South American tinamou, 161, were experimentally released while several species of Argentine ducks are being studied at waterfowl research units. Foreign game birds imported independently by States and not through the Foreign Game Investigation Program comprised eight species and subspecies with liberations from 1966 through 1968 totalling 36,397 birds. Most of these were from the partridge and pheasant groups.

For most of the species experimentally released it is still too early to evaluate results while others have become so successful that hunting has commenced. Hunting has begun in certain States for the Afghan white-winged pheasant, black and gray francolins, and bamboo partridge. The black francolin, Iranian blackneck pheasant cross, and Japanese green pheasant could have been hunted in one State by the mid-1960's except for the limited area involved. Considered as very promising are other game birds including the Korean ringneck, red junglefowl, and the Turkish chukar. Seesee partridge are yet to be tested in numbers in arid southwestern habitats. The Indian sandgrouse is still considered a failure while Reeve's pheasants liberations have been largely discontinued because of lack of success from game farm reared birds. Likewise bamboo partridge production and liberations have been stopped in the Southeast because of lack of success anywhere with major emphasis to be placed on rearing and liberating this bird in the Pacific States.



## SUMMARY OF FOREIGN GAME BIRD LIBERATIONS 1960 to 1968 AND PROPAGATION 1966 to 1968

Periodic situation reports are an integral part of any well-run research program. This tabulation and summary marks the third prepared by Foreign Investigation Program personnel. The first was Progress Report No. 12, 1960-1962 followed by a second Scientific Report--Wildlife No. 80 covering the years 1960 to 1963. Two further reports concerning propagation and liberations were compiled by the Southeastern Foreign Game Committee and published by the Missouri Department of Conservation. The first report was entitled "A Summary of Foreign Game Bird Propagation; 1964 and Liberations: 1960-64" while the second was "Summary of Foreign Game Bird Propagation 1965, and Liberations 1960-1965." Both of these were considerably edited by Glen D. Chambers of Missouri while the Bureau Foreign Game Investigation personnel were in Argentina.

Today's Program acceptance includes signed cooperative agreements with 44 States and 3 Territories. Ecological appraisals of problem habitats have been prepared by most of these States. These cover about 1/5 of the United States. Currently through 1968, 25 States and Guam have released game birds procured through the Foreign Game Investigation Program while 23 States and Guam are propagating either gallinaceous game birds or tinamous. Three southeastern States are studying semi-resident Argentine ducks.

It is again appropriate to review what is happening to the birds released and to look into the program of raising additional birds on State propagation units. To further this objective, Program personnel, under the guidance of State biologists and farm foremen, have continued on-the-spot inspections of most of the areas or units on which foreign species have been liberated or are being propagated. In addition, cooperating States were requested to fill out questionnaires covering a brief summary of activities and results for the earlier period 1960 through 1963. Later reports carried the summaries through 1965 while this report carries these operations through 1968. Most records of previous years' operations are not repeated, and previously reported failures are not included in the present tabular presentation of 1959-1965 liberations. Included for the record are reports on eight species, subspecies and crosses of foreign game birds with which various States have been experimenting on their own, the parent stock not having been secured under the Cooperative State-Federal Foreign Game Investigation Program.

## Releases and Results

Trial liberations of 16 species or subspecies and of 6 pheasant crosses are either underway or being evaluated. Thirteen of these occupy farmland and adjacent brush, grass or waste lands. Sixteen of the 22 are potentially adaptable to range, either brush or grasslands, and dry or irrigated farmlands. Three are woodland species. Areas in which these and tinamou are being or will be tried range from southern, central and southwestern to far western States.

Release areas are selected by State and Program biologists based on overseas studies and Program interim reports covering ecological conditions within the native range of the species. Wherever feasible, evaluation of new release areas are now made well in advance of liberations. The trend now is to encourage releases in those States with the best potential liberation areas to insure that sufficient numbers can be released on any one area which, in consequence, reduces initial chances of success. Foreign Game Investigation Program personnel meet periodically with State biologists to review and revise liberation and propagation methods to better the chances of successful liberations. Factual, constructive criticism is a necessary approach in basic research programs.

The need for yearly State follow-up liberations of ample numbers of birds on the same area is generally recognized today. This realization should improve the chances of establishment of quality-raised game farm birds or, when available, wild-trapped stock from overseas. For example, extensive wild-trapping did not prove profitable in recent South American tinamou work except for spotted tinamou, so most birds were kept as breeders for game farm production. In utilizing either wild-trapped or propagated birds for release stock, some States liberate large numbers in consecutive years, others utilize lesser numbers over a longer period of time. Follow-up studies are needed increasingly to determine the reasons for the lack of success of certain releases or, for that matter, certain successes. From these results we can empirically apply the information in planning future liberations.

Liberated birds tend to disperse widely. To discourage this, many are liberated by the gentle release method. Certain species, however, tend to disperse widely regardless of release techniques. These include the Indian sandgrouse, gray francolin, chukars and the ring-necked pheasant group. It is still too early to determine what part dispersion will play in tinamou introductions.

Relationships between introduced and native game birds of the United States continue to be evaluated by State personnel. There have been no documented reports over a twenty-year period, however, which

indicate adverse relations between the two groups. If our studies in South America hold true, we can anticipate little, if any, conflict between the more shy, non-aggressive tinamou and our native, unrelated gallinaceous game birds. California valley quail, acclimatized in Chile about 1879, thrive almost side-by-side with Chilean tinamous without evidence of population limiting competition.

### Summary of Releases 1966-1968

Individuals for trial release may represent wild stock usually secured by Program biologists or birds raised by State propagation units from stock so secured, as indicated in table 3. During the current period almost all of the birds liberated came from the latter source.

During the three year period covered in this report 130,883 individuals were released. Represented were 27 species, subspecies or crosses as listed in table 1.

Table 1. Releases of Foreign Game Birds by Species, States and Numbers Liberated, 1966-68.

<u>Species</u>	<u>States</u>	<u>Number</u>
Black francolin	Ark., Fla., Fla.(Eglin A.F.B.) La., N. Mex., Tenn., Va.	4,524
Gray francolin	Calif., Tex.	3,820
Bamboo partridge	Ala., Oreg., Tenn., Wash.	2,406
Spanish red-legged partridge	Calif. <sup>1</sup>	2,984
French red-legged partridge	Calif. <sup>1</sup> , Okla., Tex., Va., Wash.	7,158
Greek chukar partridge	Calif. <sup>1</sup>	2,331
Turkish chukar partridge	Calif., Nebr. <sup>1</sup>	11,723
Barbary partridge	Calif. <sup>1</sup>	1,520
Seesee partridge	Calif. <sup>1</sup> , Okla.	467
Red junglefowl	Ala., Fla., Fla.(Eglin A.F.B.) Ga., Ky., La., Okla., S.C., Tenn.	3,872
Western Iranian pheasant	Ala., Ky., La., Mo., Okla., S.C., Tenn., Tex., Va.	4,053
Western Iranian-ringneck cross	Ark., Fla., Ga., Ind., Ky., Tenn., Va.	20,724
Eastern Iranian pheasant	Ky., Okla.	1,927
Eastern Iranian-ringneck cross	Ky., Md.	1,002
Chinese ring-necked pheasant	Tex. <sup>1</sup>	691
Chinese-ringneck cross	Tex. <sup>1</sup>	276
Japanese green pheasant	Idaho, Ky., La., Md., N.Y., Va., Wash.	10,044
Korean ring-necked pheasant	Ind., Mo., Pa., Va.	8,638
Korean-western Iranian cross	Mo.	1,927
Korean-ringneck cross	Pa. <sup>1</sup>	14,463
Afghan white-winged pheasant	Ariz., Calif., Nev., N.Mex., Okla., Tex., Utah	19,886

Table 1 (cont.)

<u>Species</u>	<u>States</u>	<u>Number</u>
Afghan white-winged- ringneck cross	Okla.	39
Kalij pheasant	Tenn., Va., Wash.	2,993
Reeve's pheasant	Iowa, Mo., Tenn.	3,055
Spotted tinamou	Ala., Fla., Tex. (King Ranch) <sup>1</sup>	236
Chilean tinamou	Hawaii	69
Pale crested tinamou	Calif.	55
	Total	130,883

<sup>1</sup> Breeding stock not secured through the F.G.I.P.

A few States possess contacts overseas through which they occasionally secure breeding stock. To provide a continuing record of all trial introductions of foreign game birds such releases are included above. Of 130,883 individuals liberated, 94,486 were from stock provided by the F.G.I.P.

#### Current Status of State Releases by Species

For many of the species experimentally released it is still too early to evaluate results, while some have become so successful that hunting has commenced. Establishing a huntable population is the overall objective of the introduction program and this has been well demonstrated in recent years when New Mexico and Nevada began hunting the Afghan white-winged pheasant and Hawaii, the black and the gray francolins and the bamboo partridge. Established populations of the black francolin in Louisiana and Florida, of Iranian-ringneck pheasant hybrids and of Japanese green pheasant in Virginia currently provide potential reservoirs for trapping and transplanting. The Korean ring-necked pheasant appears promising in Missouri and several northern States, the red junglefowl is at least holding its own in limited woodland habitats in Georgia and in South Carolina. Conversely, Indian sandgrouse have disappeared following early 1960 releases and Reeve's pheasants, even with more recent blood infusion, appear to have failed or are barely hanging on.

The current status of species procured through the Foreign Game Investigation Program, as detailed in table 3, may be summarized as follows:

Black francolin - Established and being hunted in the Hawaiian Islands, especially Molokai; well established in one area in Louisiana and two in Florida and showing promise in Guam.

Gray francolin - Established and expanding range in Hawaiian Islands, being hunted in Lanai, Molokai and Maui; reproduction observed in Imperial Valley areas, California; indifferent survival in Guam and Texas.

Bamboo partridge - Liberations have been phased out in the South-east with no success reported; Oregon and Washington are currently testing out this species; open hunting on Maui in Hawaii although sustaining population is small.

French red-legged partridge - Success or failure status still undetermined in three States while some reproduction was reported in eastern Washington in early 1960's.

Turkish chukar partridge - Wild reproduction continues to be reported from California each year with some promising sight records noted from New Mexico; distribution and abundance sketchy in Hawaiian Islands.

Seesee partridge - No success following two small releases in Oklahoma; breeding stock later sent to California. This State has recently released 324 wild-trapped birds from West Pakistan into the Mojave Desert.

Red junglefowl - Population increase reported from Georgia and South Carolina. Status uncertain in Alabama and Louisiana. Failure indicated in several other States.

Western Iranian pheasant - Good evidence of survival and increase in parts of Virginia and Oklahoma. Five States indicate fair to discouraging results. Three of these are using Korean or ringneck crosses after first trying pure western Iranian pheasants.

Western Iranian-ringneck cross - Crosses are proving more adaptable than pure strains in Virginia habitats with fair-to-good reproduction reported for five States. Two others report poor results.

Eastern Iranian pheasant - Except for one evolving population in Virginia, this subspecies has not proved to be as adaptable as is the western Iranian subspecies. Poor to discouraging results for most States with little reproduction reported. Crosses of eastern Iranian ringnecks have been superior to releases of the pure strain. Some States report several hundred wild broods observed to date. One State reports poor survival from an eastern-western Iranian ringneck cross compared to a western Iranian-ringneck cross.

Japanese green pheasant - Initial Eastern Shore stockings, 1960-1962, in Virginia are definitely evolving while liberations of this strain discontinued in other counties because of indication that interbreeding with other ringnecks may produce mutants or a sterile hybrid. Results undetermined in five States with none exhibiting the success of Virginia's Eastern Shore populations.

Korean ring-necked pheasant - Excellent wild reproduction observed in Missouri and Pennsylvania with small populations or remnants persisting in two other States. Korean pheasants crossed with western Iranian

or with northern ringnecks were unsuccessful in one State while in a second it is too early to evaluate results.

Afghan white-winged pheasant - Hunted since 1964 in New Mexico and since 1966 in Nevada, with Arizona, Texas and Hawaii desiring to test this strain in their arid habitats where ringnecks have never been established. California reports good reproduction from several areas including Imperial Valley. Evaluation continuing in release areas of higher rainfall in Oklahoma; status uncertain in limited habitats of southwestern Utah.

Kalij pheasant - Three States continue to release this woodland species but it appears still too early to draw any definite conclusions. Tennessee indicates their use of gentle-release pens reduced dispersion of liberated birds. This pheasant considered well worth testing in mountainous woodland areas.

Reeve's pheasant - Occurs locally on three islands in Hawaii. Experiments with newer "wild French strain" obtained from Tennessee and Missouri have not proven to be very productive in Iowa. Game farm stock appears to lose its wildness very quickly resulting in the liberation of very tame birds.

Spotted tinamou - Information available regarding first releases in 1966 of 92 birds in Florida is that some birds continue to be observed in some liberation areas.

Chilean tinamou- Two subspecies, liberated in 1966, localized around release site on Hawaii with status unknown on Kauai.

Pale crested tinamou - California, in 1968, released this subspecies for the first time in the Mojave Desert.

#### ADAPTABILITY OF SPECIES TO COVER TYPES AND GEOGRAPHIC AREAS

The following revised lists may be helpful in considering releases in reference to the predominant cover favored by various species in their native range in comparison with the principal regions in the United States to which they might be climatically adapted.

#### Predominant Cover Favored by Various Species

<u>Cultivated lands and adjacent woody-brushy areas</u>	<u>Woodlands</u>	<u>Dry, cultivated areas, grassy-weedy ranges and/or brushy</u>
Iranian pheasant	Red junglefowl	Gray francolin
Japanese green pheasant	Kalij pheasant	Red-legged partridge
Korean pheasant	Reeve's pheasant	Turkish chukar
Bamboo partridge		Seesee partridge
		Afghan pheasant
		Pale spotted tinamou
		Northern Chilean tinamou

More humid grasslands and brushlands often with cultivation

Southern Chilean tinamou  
Large brushland tinamou  
Spotted tinamou  
Red-winged tinamou  
Black francolin

Arid, semi-arid desert, brushlands, grassy-woody

Crested tinamou

Species Potentially Adaptable to Various Regions of the United States

Mid-Atlantic

Korean ringneck pheasant  
Western Iranian pheasant crosses  
Japanese green pheasant  
Reeve's pheasant

Southeast

Black francolin  
Red junglefowl  
White-crested kalij pheasant  
Western Iranian pheasant crosses  
Japanese green pheasant  
Korean ringneck pheasant  
Red-winged tinamou  
Spotted tinamou  
Large brushland tinamou

Midwest

Korean ringneck pheasant  
Iranian pheasant crosses  
Japanese green pheasant  
Reeve's pheasant

Rocky Mountains

Turkish chukar  
Seese partridge  
Korean ringneck pheasant  
White-crested kalij pheasant  
Afghan white-winged pheasant  
Reeve's pheasant

Southwest

Gray francolin  
Turkish chukar  
Seese partridge  
Afghan white-winged pheasant  
Eastern Iranian pheasant  
White-crested kalij pheasant  
Pale spotted tinamou  
Crested tinamou  
Large brushland tinamou

Pacific (including Hawaii and Guam)

Black francolin  
Gray francolin  
Bamboo partridge  
Red-legged partridge  
Turkish chukar  
Seese partridge  
Red junglefowl  
Korean ringneck pheasant  
Afghan white-winged pheasant  
Japanese green pheasant  
White-crested kalij pheasant  
Reeve's pheasant  
Chilean tinamou  
Crested tinamou

## **Propagation of Foreign Game Birds by Species**

Most foreign countries will not permit the exportation of native species in numbers needed to complete satisfactory trials in the United States. The only alternative is to rear thrifty birds, adequately conditioned for survival in the wild, in numbers sufficient for trial acclimatization.

Realizing this, 23 States and Guam are now using stock secured through the Foreign Game Investigation Program to produce additional birds for trial release. In table 2 are listed the species now being studied and reared on State propagation units. Included are 2 francolins, 4 partridges, 7 pheasants and some crosses, the red junglefowl and 7 tinamous. The last names are newcomers to State units with production expected to rise in coming years.

Table 2. Propagation of Foreign Game Birds for Trial Release by Species, States and Number Reared, 1966-1968.

<u>Species</u>	<u>State</u>	<u>Number</u>
Black francolin	Cal., Fla., Ky., La., Tenn., Utah, Va.	4,669
Gray francolin	Calif., Te., Utah	4,757
Bamboo partridge	Ala., Ky., La., Ore., Tenn., Wash.	4,446
Spanish red-legged partridge	Calif.	1,958
French red-legged partridge	Calif. <sup>1</sup> , Va., Wash.	4,806
Seesee partridge	Calif., Utah	717
Turkish chukar partridge	Calif., Nebr. <sup>1</sup>	11,087
Greek chukar partridge	Calif. <sup>1</sup>	1,586
Barbary partridge	Calif. <sup>1</sup>	1,499
Red junglefowl	Ala., Fla. (Eglin A. F. B.) Ga., Ky., La., S. C., Tenn.	4,409
Western Iranian pheasant	Ala., Ind., Okla., S. C., Tenn., Va.	5,263
Western Iranian-ringneck cross	Fla., Ind., Ky., Tenn., Tex., Va.,	28,814
Eastern Iranian black-necked pheasant	Okla.	1,981
Eastern Iranian-ringneck cross	Ky., Md.	3,579
Japanese green pheasant	Idaho, Ind., Ky., La., Md., N. Y. <sup>1</sup> , Va., Wash.	13,149
Korean ring-necked pheasant	Ind., Ky., Mo., N. Y. <sup>1</sup> , Pa. <sup>1</sup> , Tex., Va.	13,380
Korean-ringneck pheasant cross	Pa. <sup>1</sup>	22,565
Korean-western Iranian cross	Mo.	2,297
Chinese ring-necked pheasant	Tex. <sup>1</sup>	950
Afghan white-winged pheasant	Calif., N. Mex., Nev., Okla., Tex., Utah	24,548
White-crested kalij pheasant	Oreg., Tenn., Va., Wash.	3,818
Reeve's pheasant	Iowa, Mo., Tenn.	1,084
Himalayan snowcock	Nev. <sup>1</sup>	117
Elegant crested tinamou	Calif., Okla., Utah	123
Crested tinamou cross	Nev.	78
Pale crested tinamou	Calif., Nev.	166
Southern crested tinamou	Nebr.	--
Spotted tinamou	Ala., Ga., La., Okla., Tenn.	445
Pale spotted tinamou	Colo., Okla., Utah	245
Red-winged tinamou	Ala., Guam, Okla.	222
Canyon tinamou	Tenn.	20
Large brushland tinamou	Okla.	147
Chilean tinamou	Oreg., Wash.	183
Blue tinamou	Ala., Okla.	--
	Total	163,118

<sup>1</sup> The F.G.I.P. did not provide these breeders.



These units are attempting to provide birds required to complete the trials begun with either wild-trapped or hand-reared stock. But unless vigorous individuals, well conditioned for survival in the wild, are produced such releases could also seriously impede progress through the rearing of substandard stock. This happened in some instances in the earlier years but propagators today appear to be more aware of their responsibility to provide the best bird possible for trial releases. Program personnel have continued to maintain frequent contacts with State biologists and with men rearing the birds, offering technical assistance and advice where desired. It is believed that through these contacts substantial improvement has resulted, both in numbers of birds produced as well as in the quality of stock available for trial.

### Current Status of Attempts to Propagate Foreign Species

All of the foreign species secured through the F.G.I.P. have been successfully propagated on one or more State propagation units. But the degree of success has varied, often widely, from unit to unit usually in response to differences in the propagation techniques employed. Farm managers with bird breeding problems are often unaware that methods for resolving such differences may have been developed elsewhere. It is for this reason that a record of foreign game bird propagation results by States has been presented in table 4.

Progress by species, with particular reference to results obtained in 1966 through 1968, is summarized as follows:

Black francolin - Florida has been particularly successful in propagating this species. Privacy, egg production and getting newly hatched chicks to start eating were earlier problems solved.

Gray francolin - Texas and California have produced this species in substantial numbers. California reported 33.4 eggs per hen in 1966 which is the highest by far of all in that year. Texas raised the most birds, amounting to 3,386 over the three year period.

Bamboo partridge - Due to lack of success, this species has been discontinued in the Southeast with concentration now in the Pacific Coast States. Low egg fertility and hatchability are continuing problems. Washington reports that setting the eggs within a day or two after laying appears to increase hatchability.

Red-legged partridges - Both the Spanish and the French races have proven easy to propagate. California imported its stock direct from Europe; Virginia and Washington utilized birds secured through the F.G.I.P. from Spain or Great Britain.

Seese partridges - Problems are still being encountered in propagating large numbers of this species. California and Utah are making substantial progress in resolving them.

Turkish chukar partridge - California reports rearing 485 birds in 1966. Nebraska, importing its own eggs direct from Turkey, produced 10,602 individuals in 1966-1968. Large numbers of this species were reared by New Mexico in earlier years, but their production has been discontinued.

Greek chukar partridge - Introduced by California from Greece in exchange for mountain quail 1,586 birds were produced with 28.2 eggs being laid per hen during 1966 and 1967.

Red junglefowl - Few problems with propagating this species have been encountered with most individuals produced in Alabama, Georgia and South Carolina.

Western Iranian black-necked pheasant - Alabama, Indiana, Oklahoma, South Carolina, Tennessee and Virginia are rearing pure or crosses of western Iranian pheasant with strong indications that this strain is proving better in the wild than the eastern blackneck strain. A total of 5,263 pure-strain individuals were reared in 1966-1968 while Florida, Indiana, Kentucky, Tennessee, Texas and Virginia raised 28,814 birds of the western-ringneck crosses.

Eastern Iranian black-necked pheasant - In general, emphasis has shifted from this blackneck strain to the western subspecies. Oklahoma produced 1,981 birds. Kentucky and Maryland produced 3,579 individuals of the eastern Iranian-ringneck crosses. The eastern Iranian pheasant has survived in numbers in only one county in Virginia while the western strain has survived in numbers in four counties. No special problems have been encountered in rearing either the western or eastern black-neck pheasants.

Japanese green pheasant - This pheasant continues to be a good producer in captivity with Idaho, Indiana, Kentucky, Louisiana, Maryland, New York, Virginia and Washington rearing 13,149 birds. Stockings have been discontinued in Virginia except in the isolated Eastern Shore counties because of indication of interbreeding with ringnecks thus producing many mutants and sterile hybrids.

Korean ring-necked pheasant - Indiana, Kentucky, Missouri, Texas and Virginia raised 10,097 birds, with New York and Pennsylvania, using later, independently imported stock, rearing a total of 3,283 pheasants. Experimental crosses using Korean ringnecks and Chinese ringnecks or western Iranian pheasants, by Pennsylvania and Missouri, have resulted in the production of 24,862 birds.

Afghan white-winged pheasant - California, New Mexico, Nevada, Oklahoma, Texas and Utah are producing this pheasant with New Mexico raising approximately 16,500 of the 24,548 individuals raised. After almost ten years on the game farm this Afghan pheasant remains very wild.

White-crested Kalij pheasant - Problems earlier of fighting and of egg production in captivity are being currently resolved. Tennessee and Virginia produce most of these birds.

Reeve's pheasant - Iowa, Missouri and Tennessee raised 1,084 birds. Lack of wildness when propagated in captivity and survival in the wild have led to a pessimistic view of its establishment in the United States.

Himalayan snowcock - Privately introduced by Nevada, a total of 117 birds were produced at the Mason Valley game bird laboratory in 1967 and 1968. No large releases are planned until about 1969. Breeding ratios and diet problems, former major obstacles towards building sizeable release numbers have been solved.

Crested tinamou - Early game farm problems encountered by California, Nevada, Oklahoma and Utah have been similar to those noted in Argentine F.G.I.P. studies. These States have produced 289 individuals of two strains through 1968. Main problems involve incubation, diet needs and respiratory problems occurring in the first two to three weeks of life. This tinamou seems to be more susceptible to respiratory and/or diet problems at this age than other tinamous studied in Argentina and Chile. Nevada produced a total of 78 birds in 1966 and 1967 crossing two crested tinamou subspecies.

Spotted tinamou - Early problems associated with the propagation of a new species are rapidly being resolved. Production, particularly in Alabama, Colorado and Oklahoma, is building up sufficiently to permit early trial releases.

Red-winged tinamou - Alabama, Guam and Oklahoma produced a total of 222 tinamous. This species propagates easily in captivity.

Canyon tinamou - Tennessee produced a total of 20 birds in 1967 and 1968. Artificial incubation of eggs remains a problem though they hatch well under bantams.

Large brushland tinamou - Oklahoma raised 147 birds between 1967 and 1968. Egg production has been small but should improve with further experimentation. Egg eating can be a serious problem with these birds.

Chilean tinamou - Oregon and Washington report raising 183 individuals mainly from 1967 to 1968. Although egg production per hen has been small, this situation should improve following further breeding experiments.

### Foreign Game Investigation Program

Table 3. Summary of Foreign Game Bird Releases and Results - 1960-1968

Species	State	Year	Number Re-leased	Source	Direct or Gentle Release	Month of Re-lease	Area	Results to Date <sup>1</sup>
Black francolin ( <u>Francolinus</u> <u>francolinus</u> <u>asiae</u> )	Arkansas	1960-65	635	wild farm	direct	Apr.- Oct.	Wattensaw, Camp, etc.	Reproduction observed; considerable dispersion. No reproduction known.
		1966	132	farm	direct	Sept.	Prairie Co., Conway Co., Bayou Meto	
		1967	324	"	"	June	Bayou Meto, Holla Bend	Results inconclusive.
		1968	0					
	Florida	1961-62	110	wild	"	Apr.	Avon Park G.M.A.	Reproduction and dispersal; population well established by 1966.
		1962	70	"	"	Feb.	Belle Glade	"
		1964	34	farm	"	Dec.	Immockalee and Fisheating Creek	Disappeared.
		1966-68	0					Populations increasing.
	Florida (Eglin A.F.B.)	1967	9	"	"	Nov.	Eglin A.F.B.	No birds observed.
		1968	8	"	"	"	"	Discontinued releases.
	Guam	1961	200	wild	"	Apr.	Naval Magazine	Reproducing; expanding range; dispersion 4 to 10 miles.
		1966-68	0					Occasional sightings and calls. No evidence of expansion in numbers or range.

<sup>1</sup> Releases that were previously reported as failures are not included under results from 1960-1965. To avoid some duplication certain release data listed in "Summary of Foreign Game Bird Propagation 1965, and Liberations 1960-65," compiled by the Southeast Foreign Game Committee are not reproduced in their entirety in this report.

Black francolin ( <u>Francolinus</u> <u>francolinus</u> <u>asiae</u> )	Hawaii	1960-62	748	wild	gentle	Winter, Hawaii, Maui, Spring, Kauai, Molokai Sept.	Established Molokai, Maui; occur locally Hawaii, Kauai Now considered important game bird on Molokai. Hunting since 1967.
		1966-68	0				
	Louisiana	1961-62	311	"	"	Feb.- Apr. Gum Cove	Well established within a 5-mile radius of initial release sites. Population has steadily decreased through 1965; habitat much altered. Release looks favorable reproduction known.
		1961-62	342	"	"	Apr.- May Oak Ridge	Too early to evaluate. Questionable. Disappeared.
		1965-66	270	farm	"	Nov.- Mar. Bodcau G.M.A.	Too early to evaluate. Observed calling males; few broods. Good winter survival.
		1965-66	161	"	"	" " Fort Polk G.M.A.	
		1966-67	242	"	"	" " Bodcau G.M.A.	
		1966-67	308	"	"	Dec.- Mar. Fort Polk G.M.A.	
		1966-67	166	"	"	" " Cloutiersville	
		1968	367	"	"	Sept. "	
		1968	531	"	direct	Oct.- Dec. Lake Charles	
	New Mexico	1962	450	wild	"	May S.W. part of State	Limited breeding; a few birds still hanging on.
		1965	69	farm	"	Jan. " "	"
		1966	189	"	"	" " "	Apparently negative. Results not encouraging.
		1967-68	0	"	"		
	South Carolina	1960-65	30	wild	"	Apr.- 1960 York County	Three crowing birds heard May 1966. No evaluation information received for 1968.
	Tennessee	1963-65	688	farm	gentle	Fall, spring Three counties	Post-liberation survival poor; few observations; reproduction reported.

Table 3. Summary of Foreign Game Bird Releases and Results - 1960-1968 (Cont'd.)

Species	State	Year	Number Re-leased	Source	Direct or Gentle Release	Month of Release	Area	Results to Date	
Black francolin (Cont'd.)	Tennessee	1966	350	farm	direct	Apr., Oct.	Dyer County	Post-liberation survival poor; few observations; reproduction reported.	
		1966	332	"	"	Apr., Oct.	Maury County	"	
		1966 1968	67 459	" "	" "	Apr. Jul.-Oct.	Hawkins County Wilson County	" One more group of birds to be released. Observations to date are not encouraging.	
	Virginia	1960-65	1487	wild farm	gentle, direct	Apr.-Sept.	Five counties	Generally good brood rearing success but little over-winter survival; no further stockings in Piedmont; later releases in extreme southeast counties showing more promise. Little overwinter survival.	
			1966	100	farm	direct	Apr.	Greensville County	"
				200	"	"	"	Nansemond County	"
				100	"	"	"	Isle of Wight County	"
				77	"	"	May	Nansemond County	"
			1967	102	"	"	Apr.	Virginia Beach	Broods and overwinter survival reported. Stocking discontinued.
			1968	0					
Gray francolin (Francolinus pondicerianus interpositus)	California	1966	125	"	gentle	July	Imperial County, Imperial W.M.A.	Reproduction reported.	
			260	" (Texas)	"	Sept.	"	"	

Gray francolin ( <u>Francolinus</u> <u>pondicerianus</u> <u>interpositus</u> )	California	1967	200	farm	gentle	Feb.	Imperial Co., Imperial W.M.A. Finney-Ramer Unit Imperial Co., Imperial Unit, Imperial W.M.A. Gray Lodge Area, Butte County	Reproduction reported.
		1968	148	"	direct	July		Too soon to evaluate.
	Guam	1961	200	wild	"	Apr.	Northwest Field	Some reproduction; little expansion of range.
		1966-68	0					
	Hawaii	1960-62	432	"	gentle	May- Jan.	Maui	Established; expanding range.
		1960-62	425	"	"	Dec.- May	Lanai	Established; brood size, survival excellent.
		1961-62	312	"	"	Feb.- May	Hawaii	Occur locally; brood size, survival excellent.
		1961-62	375	"	"	Mar. May	Kauai	Status uncertain.
		1962	160	"	"	"	Molokai	Established; reproductive rate good.
		1966-68	0					Hunting started 1967 on Molokai. Population increasing.
	Texas	1963-65	2310	farm	direct	Apr.- Sept.	Seven counties	Indifferent survival.
		1966	635	"	"	Aug., Oct.	Hill, Limestone, and Howard counties	Good survival; 3 broods in Hill and Limestone Counties; 2 broods Moss Lake area, Howard County. Not determined.
		1967	260 846	" "	" "	Sept. Oct.	California Coryell, Bell, Limestone, Hill, Martin, and Howard Counties.	Too early for evaluation.
		1968	680 440	" "	" "	July Oct.	Bell County McCulloch, Martin and Limestone Counties.	Broods sighted in these Counties.

Table 3. Summary of Foreign Game Bird Releases and Results - 1960-1968 (Cont'd.)

Species	State	Year	Number Re-leased	Source	Direct or Gentle Release	Month of Release	Area	Results to date
Bamboo partridge ( <u>Bambusicola thoracica</u> )	Alabama	1962-65	484	farm	direct	Dec.-Sept.	Two counties	Disappeared.
		1966	122	"	"	Oct.	Russell County	Disappeared.
		1967	39	"	"	Mar.	"	Birds stayed through summer on small area; 3 males and 2 females; no broods. Few birds remaining in area; discontinued studies of this bird.
		1968	0					
	Hawaii	1959	140	wild	"	spring	Maui	Dispersed 1½ miles by 1961. Limited hunting on Maui.
		1966-68	0					
	Oregon	1962-64	151	farm	"	July	Coos County	None.
		1966	198	"	"	Apr.	"	No reproduction.
		1967	255	"	"	May	"	None
							Lone County	Young observed.
		1968	464	"	"	Apr.	Benton County	None
							Jackson, Josephine, Douglas, Lane and Benton Counties.	Few birds observed. Broods seen in Douglas County.
	Tennessee	1963-65	522	"	gentle		Three counties	Disappeared.
		1966	341	"	direct	Apr.-Oct.	Marion County	-
		1967-68	0					None established to date.
	Washington	1964	228	"	gentle	Mar., Oct.	Three counties	Undetermined.
		1966	0					
		1967	100	"	direct	July	Clallam County	"
			50	"	"	"	Island County	"
			100	"	"	"	Kitsap County	"
			200	"	"	"	Pierce County	"
			150	"	"	"	Skagit County	"
			100	"	"	"	Snohomish County	"



Bamboo partridge (Cont'd.)	Washington 1968	50	farm	direct	Mar.	Cowlitz County	Undetermined.
		50	"	"	"	Pacific County	"
		100	"	"	"	Pierce County	"
		87	"	"	Apr.	Snohomish County	"
<hr/>							
Spanish red-legged partridge <sup>1</sup> ( <i>Alectoris rufa hispanica</i> )	California 1966	297	"	gentle	Feb.	Monterey County, Vineyard Canyon	No reproduction reported; fair survival.
		300	"	"	June	Yolo Co., Capay Valley	No follow-up reports.
		100	"	"	"	"	Too early to evaluate.
		340	"	"	Feb.	Monterey County, Vineyard Canyon	"
		573	"	"	Feb.- June	Rominger and Chapman Ranches Winters, Yolo County	"
		340	"	"	Feb.	Tulare County, Success Lake Wildlife Area	"
	1968	1034	"	direct	Feb.- Mar.	Success Res. W/L Area and near Elderwood, Tulare Co.; near Lincoln, Placer Co., near Madera. Madera Co., and Vineyard Canyon, Monterey Co.	"
<hr/>							
French red-legged partridge ( <i>Alectoris rufa rufa</i> )	California 1963-65	3223	"	gentle, direct	Jan.- June	Three counties	Good reproduction and survival some areas.
	1966	382	"	gentle	Feb. and June	Colusa Co., Butte Creek	Dispersion to five miles. At least 12 broods reported in 1966.
	1967	100	"	"	July	"	Too early to evaluate.
		336	"	"	Feb. and July	Glenn Co., Artois	"
	1968	320	"	"	"	Colusa Co., Colusa	"
		265	"	"	"	"	"

<sup>1</sup> Not introduced under F.G I.P.

Table 3. Summary of Foreign Game Bird Releases and Results - 1960-1968 (Cont'd.)

Species	State	Year	Number Re-leased	Source	Direct or Gentle Release	Month of Re-lease	Area	Results to Date
French red-legged partridge (Cont'd)	Oklahoma	1966	886 496	farm "	direct "	Aug. Sept.	Caddo County "	Birds observed frequently; no sightings during breeding period. Experiment discontinued.
		1967-68	0					
	Texas	1961-65	2800	"	"	Apr.- Aug.	Four counties	Nineteen broods seen; dispersion to 4 miles; survival poor.
		1966	181	"	"	Mar.	Fayette-Gonzales	Few adult birds seen. Discontinued.
		1967-68	0					
	Virginia	1968	100 100 20	" " "	" " "	spring " "	Fluvanna Halifax Goochland	
	Washington	1964-65	5423	"	"	Mar.- Oct.		Some reproduction, survival and carryover. Undetermined.
		1966	120 24 120 150 150 264 400 285	" " " " " " " "	" " " " " " " "	Mar. Apr. Mar. May " " Oct. Nov.	Benton County Kittitas County Island County Yakima County Kittitas County Franklin County Kittitas County " Island County Kittitas County Yakima County Adams County	" " " " " " " "
		1967	250 210 104	" " "	" " "	May June "	Benton County Kittitas County Yakima County	" " "
		1968	75 150 175 600 160 100 635	" " " " " " "	" " " " " " "	Mar. " " " " Apr. May	Adams County Benton County Franklin County Kittitas County Whatcom County King County Walla Walla County	Some reproduction. " " " Undetermined. " "

Greek chukar partridge <sup>1</sup> ( <i>Alectoris graeca</i> sp.)	California 1965	370	farm	direct	-	Palmdale, Los Angeles County Madera Co., Oakhurst	Birds pairing one week following release. Rapid dispersal. Pairing not evident the first summer.
		75	"	direct	-	Yuba Co., Spenceville Wildlife Area	Disappeared by last of July. Predation heavy.
	1966	300	"	gentle	Feb.	Madera Co., Baker Ranch	No known reproduction.
		411	"	"	Feb.- June	Yuba County, Spenceville, S.M.A.	Heavy predation; no reproduction.
		306	"	"	Feb.	Santa Clara County, Isabel Valley	No reproduction reported; wide dispersal.
	1967	366	"	"	"	Madera Co., Oakhurst	Too early to evaluate.
		365	"	"	"	Yuba Co., Spenceville W.M.A.	"
		363	"	"	"	Santa Clara County, Isabel Valley	"
	1968	220	"	direct	Mar.	Santa Clara County, Isabel Valley	"

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Indian chukar partridge<sup>2</sup>  
(*Alectoris graeca* sp.) east of the Rocky Mountains.

Turkish chukar partridge ( <i>Alectoris graeca cypriotis</i> or <i>kurdistanica</i> )	California 1960-65	7369	farm	gentle, direct	Jan.- Mar.	Nine counties	Reproduction reported annually from Colusa County.
	1966	276	"	gentle	Feb.- June	Colusa County, Wilbur Springs	Reproduction reported.
		200	"	"	Feb.	Tehama Co., Turri Ranch	Rapid dispersal; no reproduction.

<sup>1</sup> Obtained by California from the Government of Greece in exchange for mountain quail.

<sup>2</sup> Not introduced by the F.G.I.P.

Table 3. Summary of Foreign Game Bird Releases and Results - 1960-1968 (Cont'd.)

Species	State	Year	Number Re-leased	Source	Direct or Gentle Release	Month of Re-lease	Area	Results to date
Turkish chukar partridge (Cont'd.)	California	1967	219	farm	gentle	Feb.	Colusa Co., Wilbur Springs	Too early to evaluate.
		1968	226	"	"	"	Tehama Co., Paskenta	"
			200	"	direct	Mar.	Tehama Co., Paskenta	"
	Hawaii	1961	304	"	gentle	Aug.	Maui, Lanai, Molokai, Oahu, Kauai	Distribution and abundance sketchy.
		1966-68	0					Not considered established but open to hunting because of its resemblance to other game birds. Liberations discontinued.
	Nebraska <sup>1</sup>	1964-65	2876	"	"	Mar.- Oct.	Two counties	Reproduction seen in Scotts Bluff and Garden Counties.
		1966	3600	"	"	Mar., Apr., May, July, Oct.	Keith, Garden, Morrill Phelps Counties	Reproduction seen in Morrill, Banner, Sioux and Dawes Counties.
		1967	2485	"	"	Mar., Apr., May, July, Oct.	Banner, Morrill Phelps, Garden, Sioux, Dawes Counties.	Reproduction observed in Keith, six counties.
		1968	4517	"	"	Mar., Apr., Aug., Sept.	Sheridan, Scotts Bluff, Sioux, Garden, Phelps, Harlan, Keith Counties	"
	New Mexico	1960-63	12,322	"	direct	all seasons	Throughout most of State in apparently suitable cover.	Releases continued since early 1950 in follow-up of wild birds from Turkey.

<sup>1</sup> Introduced by Nebraska with egg shipment from Turkey.

Turkish New Mexico 1966-68 0  
 chukar  
 partridge  
 (Alectoris  
graeca  
cypriotis or  
kurdistanica)  
 South 1964 75 farm direct Apr. Washabaugh County  
 Dakota 1966-68 0

Moderately promising in  
 San Juan-Animas-La Plata  
 drainage area (San Juan Co.)  
 and in Pyramid Mts.  
 (Hidalgo Co.)

Some chukars remained in  
 release area; good repro-  
 duction.  
 Reproduction noted, summer  
 1967.

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Barbary partridge <sup>1</sup> ( <u>Alectoris</u> <u>barbara</u> )	California	1958-65	4199	"	gentle, direct	Jan.- June Nov.	Nine counties	Poor to good survival; some reproduction; dispersion to 20 miles.
		1966	346	"	gentle	Feb.- June	Yuba Co., Oregon House	No reproduction reported.
			270	"	"	Feb.	San Luis Obispo Co., Adelaida	" "
		1967	175	"	"	"	San Luis Obispo Co., Willow Creek Ranch	Too early to evaluate.
			174	"	"	"	San Luis Obispo Co., Chimney Rock Ranch	" "
			55	"	"	June	Solano Co., Miller Canyon	" "
		1968	240	"	direct	Mar.	San Luis Obispo Co., Willow Creek Ranch	" "
			260	"	"	"	San Luis Obispo Co., Chimney Rock Ranch	" "
	Hawaii	1960-61	321	"	"	Jan.- Oct.	Lanai, Molokai, Maui	Status uncertain, Lanai, Molokai; occur locally; hunting allowed.
		1966-68	0	"	"			Liberations discontinued.

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<sup>1</sup> Introduced by California Department of Fish and Game from Morocco, North Africa.

Table 3. Summary of Foreign Game Bird Releases and Results - 1960-1968 (Cont'd.)

Species	State	Year	Number Re-leased	Source	Direct or Gentle Release	Month of Re-lease	Area	Results to Date
Seesee partridge ( <u>Ammoperdix griseogularis</u> )	California <sup>1</sup>	1968	324	farm	direct	July Nov., Dec.	Inyo County	Too soon to evaluate.
		1966	48	"	"	Sept.	Caddo County	Birds seen immediately following release. Sent to California game farm.
		1967	35	"	Not released; reared for production		California	
		1968	0					Discontinued rearing.
Red junglefowl ( <u>Gallus gallus murghi</u> )	Alabama	1962-64	200	"	direct	Mar.- Dec.	Three counties.	Fair; some crossing with domestic fowl. Some still present.
		1966	48	"	"	Nov.	"	"
		1967	852	"	"	-	"	"
	1968	172	"	direct, gentle	Mar.- Apr., May- June	Baldwin, Cherokee, Lee, Lauderdale, Autauga Counties	Fair to good results with reproduction fair to good.	
Florida	1964	59	"	direct	Dec.	Immokalee, Avon Park G.M.A.	Status not reported.	
	1966	126	"	"	Aug., July	DeSota and Hardee Counties, Avon Park	None	
	1967	245	"	"	June, July, Aug.	Regions 1, 4, and 5	Too early to evaluate.	

<sup>1</sup> Introduced direct as wild-trapped birds from West Pakistan by California.

<sup>2</sup> The 85 junglefowl were held overwinter at game farm due to mast shortage in Baldwin County. No other birds will be released in 1967. All junglefowl raised during the summer of 1967 will overwinter at game farm and be released in the spring of 1968.

Red junglefowl ( <u>Gallus</u> <u>gallus murghi</u> )	Florida	1968	55	farm.	-	June	Avon Park G.M.A.	No birds seen after release.
			44	"	-	July	"	
			34	"	-	"	Ed Ball Mgmt. Area	
			31	"	-	"	Ft. Myers, Argo Farms	
			67	"	-	Aug.	Avon Park Mgmt. Area	
			50	"	-	Sept.	"	Four birds known dead.
	Florida	1966	72	"	-	Oct.	Eglin A.F.B.	Last observed April 1967.
	(Eglin	1967	75	"	-	Nov.	"	None observed after Jan.1968.
	A.F.B.)	1968	52	"	-	"	"	Discontinued release program; much poaching.
	Georgia	1963-65	245	"	direct	-	Public hunting and game management areas	Status not reported.
		1966	53	"	"	Mar.	Banners Mill	Young seen.
		1967	260	"	gentle	Apr., Feb.	Oaky Woods, Banners Mill	Many birds seen.
		1968	150	"	"	Oct.	Oaky Woods W.M.A.	"
			143	"	"	July	Bowens Mill,	15 broods seen.
			150	"	"	"	Ben Hill Counties	
			124	"	"	Sept.	Oaky Woods W.M.A.	4 broods seen; probably established in 2 counties.
			93	"	"	Oct.	Wancross State Clinch and Harrison Counties.	
	Kentucky	1964-65	265	"	direct	Apr., Aug.- Oct.	Henderson County	Few birds still in vicinity; results discouraging.
		1966	24	"	"	Apr.	"	Not encouraging.
		1967	123	"	"	Oct.	"	"
		1968	57	"	"	Apr.	"	Too early to evaluate. Discontinued rearing this bird. Failure probable.
	Louisiana	1963-65	467	"	gentle	Mar., Nov.- Dec.	Several game management areas.	Generally faded out after initial favorable indications; wide dispersal.

Table 3. Summary of Foreign Game Bird Releases and Results - 1960-1968 (Cont'd.)

Species	State	Year	Number Re-leased	Source	Direct or Gentle Release	Month of Re-lease	Area	Results to Date
Red Junglefowl (Cont'd)	Louisiana	1966	216	farm	gentle	winter 65-66	West Bay, Thistlewaite, Idlewild, St. Helena	Poor.
		1967	168	"	"	Dec.66- Feb.67	West Bay	Questionable.
		1968	300	"	"	July- Dec.67	Avery Island	Good.
	Oklahoma	1961-65	1021	"	gentle, direct	Mar., Jul.- Nov.	McCurtain County	Discontinued main releases in 1965.
		1966	0	"	direct	Mar.	McCurtain County	Birds seen immediately after release.
		1967	62	"	"	Nov.	"	Occasional crowing heard. Discontinued.
		1968	10	"	"	"	"	"
		1965	-	"	"	"	Hampton Co.,Belmont Plantation	Calling birds and broods observed were a result of junglefowl escapes from the game farm.
		1966	26	"	direct	Oct.	Shaw Island (Hartwell Reservoir)	Last observed two months after release.
		1967	56	"	"	Aug.	Chester Co., San Pau- los Farm - moved to Worthy Bottoms	Too early to evaluate.
South Carolina	1968	148	"	"	June-	Hampton Co., Belmont	These birds previous release stock or escaped birds observed almost daily.	
		25	"	"	Oct.	Anderson Co., Shaw Island	Some observed in November.	
		75	"	"	Dec.	Union Co., Gist Farm	Birds from previous release on Paulas Farm observed to move to Gist Farm and surrounding area.	



Red junglefowl ( <u>Gallus gallus murghi</u> )	Tennessee	1964-65	113	farm	direct	Sept., Aug.	Two counties.	Post release survival fair to poor; dispersion moderate heavy; reproduction poor; present population trend poor to non-existent. Not encouraging.
		1966	172	"	gentle	Jan., Apr. July, Aug.	Hardeman County	
		1967-68	0	"	direct	Apr., June, July	Roane County	Too early to evaluate.
		1967-68	0	"				No birds established.
<u>Western Iranian pheasant (pure strain)</u> ( <u>Phasianus colchicus talischensis</u> )	Alabama	1960-65	1861	"	"	Jan.- Oct.	Three counties.	Fairly good; reproduction each year.
		1966	47	"	"	July	" "	Favorable.
		1967	435	"	"	Sept.	" "	"
			95	"	"	"	Dale County	Not known.
			192	"	"	Oct.	" "	"
			100	"	"	Nov.	Lowndes County	"
		1968	176	"	"	June, Nov.	Lowndes and Henry Counties	Reproduction good in Henry Co., but poaching bad. Pheasant releases will be discontinued after spring liberations in 1969.
	Kentucky	1962-63	294	"	"	Apr.- Oct.	Henderson County	Few birds still present in vicinity of one release site; results discouraging.
		1966	19	"	"	Apr.	" "	Not encouraging.
		1967-68	18	"	"	Sept.	McLean County	" "
			0	"	"			Stragglers present on one area. Pure strain Iranians and crosses with ringnecks released on the same study area. Releases terminated.

Table 3. Summary of Foreign Game Bird Releases and Results - 1960-1968 (Cont'd.)

Species	State	Year	Number Released	Source	Direct or Gentle Release	Month of Release	Area	Results to Date
Western Iranian pheasant (pure strain) (Cont'd.)	Louisiana	1966	53	farm	gentle	winter 65-66	Melville County	Poor.
		1967	0					Few survivors, No known reproduction. Apparent failure.
	1968	0						
	Missouri	1965	174	farm <sup>1</sup>	"	Mar.	La Monte	Poor; release modified to include the Korean pheasant in a Korean x <u>talischensis</u> hybrid.
		1966	60	farm <sup>1</sup>	"	"	"	Too early to evaluate. Evaluation continuing.
	1967-68	0						
	Oklahoma	1962-64	819	farm	"	Feb.- Mar., Aug.- Oct.	Four counties	Most promising release area in Wagoner County; adults seen frequently; numerous broods observed each spring. Release area continues promising; birds and broods seen frequently.
		1966	144	"	direct	Mar.	"	Adults seen frequently; no reproduction evident.
		1967	89	"	"	"	Mayes County	" " "
			124	"	"	"	"	"
		154	"	"	"	Rogers County	Too early to evaluate.	
		51	"	"	June	Mayes-Rogers	" " "	
		250	"	"	Oct.	Mayes County	" " "	
		404	"	"	Aug.	Hughes and Caddo Counties	Reproducing in the wild; too early to evaluate success.	
	South Carolina	1961-65	546	"	"	Jul., Aug.- Dec.	Three counties.	Last pair observed spring 1965.

<sup>1</sup>Experimental Areas.

Western Iranian pheasant (pure strain) (Phasianus colchicus <u>talischensis</u> )	South Carolina	1966 1967 1968	63 86 0 180 60 120	farm " " " " "	direct gentle direct " " "	July " July Sept. " "	Weeks Farm Garrett Farm Chesterfield Co., Sutton Farm York Co., Catawba Timber Laurens Co., Garrett Farm McNairy County	Evaluation continuing " Growing birds heard Apr.- May 1957. 3 birds seen during Call County survey. Three young together observed June 1968. Birds observed monthly through January 1969. Adults or young observed May 1968. Some individuals moved 15 miles westward. Post liberation survival poor to fair; poor re- production. Observations similar to those of 1964-65 above. " " Too early to evaluate. One more spring release planned; observations continuing. Oklahoma game farm cocks only; results unknown. - Initial stockings had limited success; these counties have since been stocked with the Western Iranian-ringneck cross, with better indication of acclimatizations; generally evolving population.
	Tennessee	1964-65	316	"	"	Mar., Sept.		
		1966	100	"	"	Sept.		
		1967	100 453	" "	" "	Mar. Apr., Aug.		
		1968	400	"	"	Aug.		
	Texas	1967 1968	12 0	" "	" "	June	Garrett Ranch, Dansbury, Texas	
	Virginia	1961-65	1521	"	"	Apr.- Nov.	Several Counties	

Table 3. Summary of Foreign Game Bird Releases and Results - 1960-1968 (Cont'd.)

Species	State	Year	Number Re-leased	Source	Direct or Gentle Release	Month of Re-lease	Area	Results to Date
Western Iranian pheasant (pure strain) (Cont'd.)	Virginia	1966	50	farm	direct	Apr.	Brunswick County	Limited time for follow-up studies; considered to have an evolving population.
		1967-68	18	"	"	"	Cumberland County	
Western Iranian ringneck cross	Arkansas	1962	124	"	direct	Mar.	Three areas	Poor reproduction.
		1966	50	-	-	Nov.	Bayou Meto	Reproduction observed for all releases.
			50	-	-	"	Flag Lake	
			50	-	-	"	Shirey Bay-Rainey Brake	
		1968	154	farm	-	-	Bayou Meto	Small amount of wild reproduction.
Florida	1961-64	-	-	-	-	-	Apalachee W.M.A.	Negative - some reproduction.
	1964	-	-	-	-	-	Holmes County	" "
	1965	-	-	-	-	-	N.W. Florida (9 counties)	" "
	1966	603	farm <sup>1</sup>	direct	June-Sept.	N. Florida (13 counties)	" "	
	1967	333	-	-	-	-	Five counties; N.W. Florida	Too early to evaluate.
	1968	-	-	-	-	-	-	Releases discontinued.
Georgia	1963-65	216	farm	direct	Sept.	Gordon County	Small number of young seen.	
	1966	496	"	"	Mar.	Gordon County, N.W. Ga.	" "	
		1967-68	0				Releases discontinued.	

<sup>1</sup>Smith's game farm, Panama City.

Western Iranian ringneck cross	Indiana	1964-65	286	farm	direct	Apr., Jul.	Vigo County	Minimum of 29 broods seen.
	1966	500	"	"	Mar.	Vigo Co. (Pfizer Farm and U.S. Prison Farm) carryover.	Fair reproduction; light carryover.	
	1967	329	"	"	"	Knox Co. (Freeland-ville Area)	Good reproduction; good carryover.	
	1968	255	"	"	"	Knox County	Too early to evaluate.	
		255	"	"	"	Vigo County	"	
		447	"	"	"	Vigo and Knox Counties	Some reproduction and dispersal. Status uncertain.	
	1962	155	"	"	Apr.- Jul., Oct.	Henry County (S.E. Iowa)	Intermixed with ringnecks; good reproduction and expansion; some birds carrying blackneck characteristic but ringnecks appear dominant.	
	1966-68	0					No releases since 1962-63. Discontinued.	
	1961-65	2904	farm	direct	Apr., Aug.- Dec.	Two counties	Few birds still present in vicinity of one release site. Results discouraging.	
	1966	24	"	"	Apr.	Henderson County	Not encouraging.	
		53	"	"	"	McLean County	"	
		363	"	"	Sept.- Oct.	"	"	
	1967-68	0					Releases terminated.	
	1961-65	8421	farm	direct	Apr. Aug.- Nov.	Six counties.	Post release survival fair to poor; dispersion moderate to heavy; reproduction poor; present population trend poor to non-existent.	
	1961-65	8421	farm	direct	Apr., Aug.- Nov.	Five counties.	Post release survival good to fair; dispersion light to moderate; reproduction fair; present population trend decreasing.	

Table 3. Summary of Foreign Game Bird Releases and Results - 1960-1968 (Cont'd)

Species	State	Year	Number Released	Source	Direct or Gentle Release	Month of Release	Area	Results to Date	
Western Iranian ringneck cross (Cont'd.)	Tennessee	1966	1009	farm	direct	Mar.-Sept.	DeKalb County	Post liberation survival fair to good; reproduction fair; liberations still in progress.	
			1175	"	"	Aug.-Sept.	Tipton County	" " "	
		1967	724	"	"	Aug.	Lawrence County	" " "	
			1487	"	"	Apr.-Aug.-Sept.	DeKalb County	Too early to evaluate in detail.	
		Virginia	1968	1571	"	"	Aug.-Sept.	Tipton County	" " "
				809	"	"	July-Sept.	Lawrence County	" " "
				2765	"	"	July-Sept.	Tipton and Haywood Counties	Some broods reported; observations continuing.
				1633	"	"	Apr.-Oct.	Charles City, Surry Prince George and Richmond Counties	This strain throughout Virginia Piedmont, Tidewater and Great Valley areas gives the best evidence of brood rearing and overwinter survival; population evolving.
				1240	"	"	Apr.-Oct.	Campbell and Nottoway Counties	" " "
				302	"	"	Apr.	Campbell County	" " "
490	"			"	Apr.-Aug.	Greensville County	" " "		
655	"			"	Apr.-Oct.	Central	" " "		
Virginia	1965	528	"	"	Apr.-Oct.	Piedmont and Tidewater Counties	" " "		
		50	"	"	Apr.	Brunswick County	Limited time and facilities were available for checking release successes, but preliminary indications are that brood rearing and overwinter survival continues; population evolution.		
		100	"	"	"	Surry County	" " "		
		100	"	"	"	Halifax County	" " "		
		100	"	"	"	Hanover County	" " "		
		142	"	"	"	New Kent County	" " "		
		6	"	"	"	Richmond County	" " "		
		15	"	"	Sept.	Virginia Beach	" " "		
		100	"	"	Oct.	Lovettsville	" " "		
		100	"	"	"	Nottoway County	" " "		

Western Iranian ringneck cross	Virginia	1967	209	farm	direct	Mar. Apr.	King George County Cumberland County Fluvanna County Charlotte County Campbell County Virginia Beach Nottoway County Amelia County Rappahannock County Botetourt County Albemarle County Lancaster County Page County Lee County Augusta County Cumberland County Nelson County Botetourt County Fauquier County Warren County Clarke County Augusta County Henry County New Kent County Southampton County	Limited observations to date.
			105	"	"	Apr.	Cumberland County	"
			112	"	"	"	Fluvanna County	"
			110	"	"	"	Charlotte County	"
			110	"	"	"	Campbell County	"
			220	"	"	"	Virginia Beach	"
			110	"	"	"	Nottoway County	"
			110	"	"	"	Amelia County	"
			110	"	"	"	Rappahannock County	"
			110	"	"	"	Botetourt County	"
			110	"	"	"	Albemarle County	"
			110	"	"	"	Lancaster County	"
			110	"	"	"	Page County	"
			120	"	"	May	Lee County	"
			220	"	"	"	Augusta County	"
			174	"	"	"	Cumberland County	"
			94	"	"	"	Nelson County	"
			100	"	"	Sept.	Botetourt County	"
			200	"	"	"	Fauquier County	"
			200	"	"	"	Warren County	"
			200	"	"	"	Clarke County	"
			150	"	gentle	Oct.	Augusta County	"
			60	"	direct	"	Henry County	"
			100	"	"	"	New Kent County	"
			200	"	"	"	Southampton County	"
			200	"	"	Nov.	"	"
		1968	260	"	"	spring	Fauquier County	Good brood rearing.
			200	"	"	"	Hanover County	Insufficient observations.
			30	"	"	"	Fairfax County	"
			100	"	"	"	King George County	"
			15	"	"	"	Northumberland County	"
			100	"	"	"	Fluvanna County	"
			100	"	"	"	Nelson County	"
			100	"	"	"	Rappahannock County	"
			100	"	"	"	Charlotte County	"
			130	"	"	"	King William County	"
			10	"	"	"	Prince Edward County	"
			110	"	"	"	Clarke County	"
			100	"	"	"	Botetourt County	"
			200	"	"	"	Augusta County	"
			150	"	"	fall	Augusta County	"
			130	"	"	spring	Lee County	"

Table 3. Summary of Foreign Game Bird Releases and Results - 1960-1968 (Cont'd.)

Species	State	Year	Number Re-leased	Source	Direct or Gentle Release	Month of Re-lease	Area	Results to Date
Western Iranian ringneck cross (Cont'd.)	Virginia	1968	100	farm	direct	spring	Bath County	Insufficient observations.
			35	"	"	"	Chesapeake County	"
			34	"	"	fall	Virginia Beach County	"
			169	"	"	spring	Cumberland County	"
			100	"	"	"	Rockingham County	Good brood rearing
			300	"	"	fall	"	Insufficient observations.
			200	"	"	spring	Wise-Dickinson County	"
			64	"	"	"	Buckingham County	"
Eastern Iranian pheasant (pure strain) ( <u>phasianus colchicus persicus</u> )	Iowa	1962	42	"	"	Apr.- July	Henry County	Intermixed with ringnecks stocked in same area; birds spreading while ringnecks seem to be dominant; ring-necks doing well in nearby areas where no blackneck strain birds were released. No releases since 1962-63. Discontinued.
	Kentucky	1962-65	386	farm	direct	Sept.- Oct.	Two counties.	Inconclusive results.
		1966	15	"	"	Apr.- July	Todd County	Results not encouraging.
		1967-68	0	"	"	Apr.		-
	Missouri	1961-65	1653	farm	gentle	spring, fall	Rich Hill	Seems to be a very poor prospect. Final release, March 1965.
	Oklahoma	1966-68	0	farm	direct, gentle	Feb., Apr., Sept.- Nov.	Three counties.	Occasional sightings; no more releases to be made
		1963-65	508	farm	direct, gentle	Mar. Oct.	Canadian County Caddo County	Not reported.
		1966	185	farm	direct			"
			100	"	"			"



Eastern Iranian pheasant (pure strain) (Phasianus colchicus persicus)	Oklahoma	1967	66	farm	direct	Mar.	Caddo County Canadian County Caddo County " " " " Wagner and Roger's Counties	Adults seen frequently. No reproduction evident. " " " Reproduction in the wild but too early to determine.
	Tennessee	1964-65	502	"	"	Oct.	Meigs County	Reproduction fair; dispersion light to moderate; present population trend stable. Final releases fall 1965.
	Virginia	1961-64	1930	"	"	Apr.- Sept.	Two counties	In all Virginia locations poor to precarious survi- val; nevertheless, in Orange and Page Counties, and more limitedly in other areas, initial releases of pure and cross strain have resulted in evolving, persisting, and now increasing population. Evaluation continuing.
Eastern Iranian ringneck cross	Iowa	1962-63	200	"	"	Sept.	Henry County	Intermixed with ringnecks already in release areas; good reproduction and spreading. Discontinued.
	Kentucky	1961-65	1799	"	"	Apr.- Nov.	Two counties.	Few birds remaining; re- sults discouraging.
		1966	107	"	"	Apr.	Todd County	Not encouraging.
		1967	347	"	"	Sept.- Oct.	" "	" "
			0	"	"			Releases terminated.

Table 3. Summary of Foreign Game Bird Releases and Results - 1960-1963 (Cont'd.)

Species	State	Year	Number Re-leased	Source	Direct or Gentle Release	Month of Re-lease	Area	Results to Date
Eastern Iranian ringneck cross (Cont'd.)	Maryland	1961-65	1756	farm	-	-	Eight Counties	Two areas still have birds; however, these 2 were restocked in 1965.
		1966	50 (cocks)	"	direct	Mar.	Six Counties	Seem to be mating with surplus ringneck females.
		1967	50	"	"	"	Four Counties.	Two broods reported from two counties from 1965 releases.
		1968	448	"	"	Oct., Nov., Dec.	Washington and Howard Counties.	These birds were released for hunting purposes only (all males).
	Missouri	1959-61	1633	"	gentle	Sept.-Apr.	Centralia	Somewhat promising.
		1966-68	0					Six years since the final release was made and the population is slightly higher than it was in 1961; a total of 363 broods reported 1960-67.
	Tennessee	1960-63	15,650	"	"	Aug.-Nov.	Nine counties.	Post release survival good to fair; dispersion light to moderate; reproduction fair; present population trend poor, decreasing, non-existent or stable. Discontinued.
		1966-68	0					

Chinese ring-necked pheasant <sup>1</sup>	Texas	1966	354	wild	direct	June, July, Aug.	Brazoria and Matagorda Counties	Excellent production Matagorda area.
		1967	37 300	farm wild	" "	June Sept.	Brazoria County Brazoria and Matagorda Counties	Too early to evaluate. "
		1968	0					Evaluation continuing.
Chinese ring-necked pheasant cross <sup>2</sup>	Texas	1967	171	farm	"	June, July	Brazoria and Matagorda Counties	Too early to evaluate.
		1968	105	"	"	Sept.	Jackson County	Good population in coastal areas, Matagorda and Jackson Counties.
Eastern western Iranian ringneck cross	Virginia	1959-62	417	"	"	Oct.	Two areas	Indications are that these strains have shown poor survival when compared to the Western Iranian cross. Evaluation continuing.
Japanese green pheasant (pure strain) (Phasianus colchicus <u>robustipes</u> )	Idaho	1966	96 606	" "	gentle direct	Apr. Apr., Aug., Oct.	Benewah County Boundary and Benewah, Counties	Unsuccessful to date, but evaluation continuing.
		1967	50 1370	" "	gentle direct	Apr. June, Oct., Nov.	Bonner County Benewah, Bonner, Boundary and Kootenai Counties	" " "
		1968	1556	"	"	Apr., July, Nov.	Boundary, Bonner, Kootenai, Benewah Counties	"

<sup>1</sup> A California Department of Fish and Game transfer to Texas Game and Fish Department, wild-trapped from Sacramento Valley.

<sup>2</sup> Not imported under the F.G.I.P.

Table 3. Summary of Foreign Game Bird Releases and Results - 1960-1968 (Cont'd.)

Species	State	Year	Number Re-leased	Source	Direct or Gentle Release	Month of Re-lease	Area	Results to Date
Japanese green pheasant (pure strain)	Kentucky	1967	15	farm	direct	May	Wayne County	Too early to evaluate;
		1968	97	"	"	Sept.	"	limited amount of reproduction.
(Cont'd.)	Louisiana	1964-65	229	"	gentle	Nov.	Fenton County	Continuing observations; additional birds released.
		1966	200	"	"	-	-	Questionable status.
		1967	226	"	"	Dec.66-Fenton	County	"
		1968	0	"	"	Nov.67	"	Considered a failure at this date.
	Maryland	1965	81	"	gentle	Mar.	One county	Poor; one brood.
		1966	270	"	direct	"	"	Reproduction good.
		1967	140	"	"	"	"	Too early to evaluate.
		1968	0	"	"	"	"	"
	New York	1966-67	0	"	"	Apr.	Sullivan County	Broods observed.
		1968	112	"	"	"	"	"
	Tennessee	1962-65	2264	"	"	Mar., Aug.-Sept.	Two counties	Post release survival good to fair; dispersion light to moderate; reproduction fair; present population trend decreasing to stable.
		1966-68	0	"	"	"	"	Discontinued releases.
	Virginia	1960-65	3250	"	"	Apr.-Oct.	Four regions.	Stockings discontinued except in the isolated Eastern Shore Counties because of indications of interbreeding with <i>P. colchicus</i> producing a sterile hybrid; initial Eastern Shore stockings 1960-62 definitely evolving; bolstering stockings continued there.

Japanese green pheasant (pure strain)	Virginia	1966	13	farm	direct	Mar. Apr.	Northampton County Augusta County Lee County Fauquier County Shenandoah County Floyd County Accomack County Frederick County Northampton County Accomack County Northampton County	Virtually all stocking areas on the Eastern Shore, counties considered to have evolving green pheasant populations.
<u>colchicus</u>			100	"	"	"	"	"
<u>robustipes</u> )			100	"	"	"	"	"
			200	"	"	"	"	"
			100	"	"	"	"	"
			100	"	"	"	"	"
			300	"	"	May	"	"
		1967	420	"	"	Mar.	"	Undetermined.
		1968	463	"	"	Apr.	"	"
			185	"	"	spring	Northampton County	Good brood rearing.
	Washington	1965	50	"	"	Mar.	Two counties	Surplus cocks; some evidence of survival.
		1966	100	"	"	June	Lewis County	Some production.
			100	"	"	July	Clark County	Undetermined.
			100	"	"	Oct.	Lewis County	"
			210	"	"	Nov.	"	"
		1967	58	"	"	Jan.	"	"
			340	"	"	Apr.	"	Some production.
			100	"	"	May	"	"
			440	"	"	June	"	"
			140	"	"	Oct.	"	Undetermined.
		1968	250	"	"	Mar.	Lewis County	Some reproduction.
			172	"	"	Apr.	Pierce County	"
			275	"	"	June	Lewis County	"
			175	"	"	"	Pierce County	"
			415	"	"	Oct.	Lewis County	Undetermined
			190	"	"	Nov.	"	"
			50	"	"	"	Pierce County	"
			30	"	"	"	Thurston County	"
			80	"	"	Dec.	Lewis County	"
Japanese green ringneck cross	Tennessee	1962-64	3061	"	"	Aug.- Sept.	Henderson County	Post release survival good to fair; dispersion light to moderate; reproduction fair; present population trend decreasing. Disappeared.
		1966-68	0	"	"			

Table 3. Summary of Foreign Game Bird Releases and Results - 1960-1968 (Cont'd.)

Species	State	Year	Number Re-leased	Source	Direct or Gentle Release	Month of Release	Area	Results to Date
Korean ringneck pheasant ( <i>Phasianus colchicus karpowi</i> )	Illinois	1963-64	339	farm	direct	Mar 1963	Neaga Area, Cumberland land County	Fifty-four percent survived to May 1963 and produced an estimated 28 broods in 1963; a small population has persisted at Neaga; 44 cocks were located on the area during May 1967.
		1966-68	0					
	Indiana	1964	-	-	-	-	Shelby County	Remnants remaining on Blue River Area.
		1966	254	farm	direct	Mar.	"	A few remnants remaining on Blue River Area.
		1967	0					
		1968	398	"	"	Mar.	Shelby County	Some reproduction and dispersal. Status uncertain.
	Missouri	1962-65	1448	farm <sup>1</sup>	Supra-gentle	Nov., Mar.	Bootheel	Population continues to expand slowly; too early for conclusive statements but looks somewhat promising to date. Total of 440 broods were reported 1963-67.
		1964-67	2557	"	"	"	Clarence	Too early for conclusions other than reproduction in the wild has been excellent; a total of 258 broods were reported 1964-67; crowing index high.
		1966	733	farm	"	Mar., Oct.	"	Too early for conclusions but excellent reproduction.
		1967	1822	"	"	Nov., Mar.	Miami-Malta Bend	First year of release. No comments at this early date.
		1968	811	"	"	Mar.	"	Too soon to tell.

<sup>1</sup> Research area.

Korean ringneck pheasant ( <u>Phasianus</u> <u>colchicus</u> <u>karpowi</u> )	New York	1966-67 1968	1248 0	farm	Supra- gentle	Apr.	Allegany, Cattaraugus, Chemung and Tioga Counties	Encouraging brood reports received.
	Pennsylvania	1962-65	3207	"	direct	Feb.- Apr.	Three counties	Birds have shown increases in fall populations; successful establishment still promising.
		1966 <sup>1</sup>	625	"	"	May	Crawford County, Cochranton	Birds have shown increases in fall populations during 1966 and 1967.
		1967	800	"	"	June	"	Successful establishment still promising.
		1968	378	"	"	Mar.	Western Erie County	Reproduction good. Hold-over fair.
	Virginia	1968	12	"	"	fall	Virginia Beach	Insufficient observations.
Korean western Iranian pheasant cross	Missouri	1967	177	"	gentle	Mar., Oct.	La Monte	First year of release.
		1967	1209	"	"	Nov., Mar.	"	"
		1968	541	"	"	Mar.	"	Too soon to tell.
Korean ringneck cross	Pennsylvania	1963-65	27,103	"	direct	Apr., fall	Four counties	Poor; fair to poor reproduction and survival.
		1966	8038	"	"	late summer, fall	Erie and Crawford Counties	Poor survival; very small numbers winter on the study area.
		1967	6425	"	"	spring-Erie, fall	W. Crawford, and W. Erie Counties	Too early to evaluate.
		1968	0					Evaluation continuing

<sup>1</sup>Fresh stock secured direct from Korea by the State.

Table 3. Summary of Foreign Game Bird Releases and Results - 1960-1968 (Cont'd.)

Species	State	Year	Number Re- leased	Source	Direct or Gentle Release	Month of Re- lease	Area	Results to Date
Afghan white-winged pheasant ( <u>Phasianus</u> <u>colchicus</u> <u>bianchii</u> )	Arizona	1966	14	farm	direct	Feb.	Robbins Butte Arlington	Questionable.
			81	"	"	"	"	"
			193	"	"	"	"	"
		1967	304	"	"	"	Safford Valley	Too early to evaluate.
			282	"	"	"	Painted Rock	"
			287	"	"	"	Arlington	"
			59	"	"	"	Robbins Butte	"
		1968 <sup>1</sup>	1148	"	"	Jan.	Arlington, Safford Valley, Painted Rock	"
	California	1965	190	"	"	June	Kern County, Kern National Wildlife Refuge	Successful; mixed with ring-necked pheasants.
			200	"	gentle	Feb.	"	Good reproduction.
		1966	385	"	"	Jan.- Feb.	Monterey County, Upper Salinas River	-
			496	"	"	Feb.	Imperial County, Imperial W.M.A.	Good reproduction.
			134	"	"	June	Glenn Co., Glood Ranch	-
		1967	150	"	"	"	Monterey County, Upper Salinas River	-
			123	"	"	Jan.- May	Yuba County, Spenceville W.M.A.	-
			497	"	"	Feb.	Riverside County, North of Blythe	Too soon after release to evaluate.
		1968	250	"	"	Oct.	Kern County, Greenfield	"
	Nevada	1963-65	126	"	gentle, direct	Mar.- Apr.	Clark County, Virgin Valley	First release; good.

<sup>1</sup> Release stock from New Mexico, California and private Arizona breeder, 1966-68.



Afghan white-winged pheasant ( <u>Phasianus</u> <u>colchicus</u> <u>bianchii</u> )	Nevada	1966	142	farm	gentle, direct	Feb.	Virgin Valley	Established; first hunt held fall 1966 with encouraging results; because of decline in central Nevada pheasant populations, no hunt held 1967 in Virgin Valley. Still being evaluated. Reproduction noted. Established and hunted in Virgin Valley.
		1967	88	"	"	"	Moapa Valley	
		1968	59	"	"	Mar.	"	
	New Mexico	1960-65	6215	"	"	winter, spring, June, Aug.	Eddy, San Juan, DeBaca, Grant, Quay Sierra, Hidalgo, Luna, Chaves, and S.E. part of State	Looks promising in all areas; many broods raised; cocks hunted in all areas. Hunting since 1964.
		1966	2450	"	"	Jan.	Hidalgo, Grant, Luna, Dona Ana, and Socorro Counties	Promising in all areas; thought to be established but will need several years evaluation to be sure of success.
		1967	5536	"	"	"	Eddy, Chaves, De Baca, Dona Ana, and Socorro Counties	
		1968	3000	"	direct	Jan.	Virden and Pyramid Valley (Lordsburg Area), Rio Grande Valley (Socorro, Las Cruces), Lower Pecos Valley (Ft. Sumner, Artesis, Roswell)	Some whitewing breeding; success in most trial areas, but greatest success in Hidalgo and Grant Counties.
	Oklahoma	1964-65	1125	"	gentle, direct	-	Two counties	Occasional sightings; releases to be continued in one county; rough country and birds are believed to be surviving better than observations show; no more releases to be made. Few birds observed occasionally.
		1966	223	"	"	Oct.	Greer County	

Table 3. Summary of Foreign Game Bird Releases and Results - 1960-1968 (Cont'd.)

Species	State	Year	Number Released	Source	Direct or Gentle Release	Month of Release	Area	Results to Date	
Afghan white-winged pheasant (Cont'd.)	Oklahoma	1967	135	farm	gentle, direct	July	Greer County	Only 2 cocks and 4 hens have been seen after releases made.	
		"	104	"	"	"	"	"	
		"	102	"	"	"	Aug.	"	-
		"	191	"	"	"	"	"	-
		1968	359	"	"	"	Sept.	"	-
		1968	739	"	"	Aug., Sept.	Greer and Dewey Counties	Reproduction in the wild but too early to evaluate success.	
Texas		1966	176	"	"	Feb.	Lynn, Gaines, and Lubbock Counties	Some broods; birds dispersed up to 5 miles; scattered badly in Lynn.	
		1967	173	"	"	July, Aug., Sept.	Gaines, Howard, Martin, Lynn, Hale, Bailey, and Lubbock Counties	-	
			140	"	"	Jan.	Gaines, Lynn, and Lubbock Counties	-	
1968			530	"	"	July, Sept.	Bailey, Hale, Tom Green, Runnells, Lynn, Lubbock, and Nolan Counties	Good survival Bailey and Hale Counties; broods reported. Scattered in Lynn, Gaines and Lubbock Counties.	
		Utah	1964-65	225	"	direct	Mar..	Green River, Hanksville and Kanab	Twenty-one surplus cocks were divided between two areas; Results unknown regarding potential hybridization with ring-necked pheasants. Ninety-six birds (81 hens, 15 cocks) were released in Johnson Canyon near Kanab; birds still observed occasionally but numbers low. Uncertain.

Afghan white-winged pheasant ( <u>Phasianus</u> <u>colchicus</u> <u>bianchii</u> )	Utah	1966	45 145	farm "	direct "	Sept. -	Washington County Transferred to Nevada under cooperative program.	Undetermined.
		1967	75 241	" "	" -	Nov. -	Washington County Transferred to Nevada under cooperative program	" "
		1968	0				Releases planned for other counties in 1969.	
Afghan white-winged pheasant ringneck cross	Nevada	1962-65	228	"	gentle	Mar.- Apr.	Clarke County, Virgin Valley	Considered established by 1966. Some ringnecks also present. First hunt, fall 1966. Good population 1967.
	Oklahoma	1961-64	4131	"	"	Feb., July, Aug.- Oct.	Three counties	Occasional sightings; production all release areas; crow counts indicated; survival and increase.
		1966 1967	0 39	" "	direct	Sept.	Greer County	Only 2 cocks and 4 hens have been seen after releases were made.
		1968	0					-
Kaliij pheasant ( <u>Lophura</u> <u>leucomelana</u> <u>hamiltonii</u> )	Tennessee	1964-65	262	"	"	Mar., Aug.- Sept.	Two counties	Post release survival. Gentle release pens have proved effective in re- duction of dispersal for released birds. Evaluation continuing for liberations made through 1967.
		1966	311	"	gentle	Mar., July, Aug.	Marion County	
			243	"	"	July, Sept. Mar. Aug.	Grainger County DeKalb County Benton County	

Table 3. Summary of Foreign Game Bird Releases and Results - 1960-1968 (Cont'd.)

Species	State	Year	Number Re-leased	Direct or Gentle Release	Source	Month of Re-lease	Area	Results to Date		
Kalij pheasant (Cont'd.)	Tennessee	1967	250	gentle	farm	Mar.,	Grainger County	Undetermined.		
						July,				
						Oct.				
						Apr.,				
						July,				
	1968	219	"	Apr.,	Marion County	"				
				July,						
				Sept.						
				Aug.						
				July-						
Virginia	1963-65	888	direct	"	Sept.	Benton County Grainger, Marion and Benton Counties	Releases will continue for one more year. Few broods reported. Observations continuing.			
					Aug.					
					July-					
					Sept.					
					Apr.-					
Washington	1966	888	direct	"	"	Nov.	Two counties and Southwest Mountains	Good brood rearing and over- winter survival; however, game farm propagation limited to about 300 birds per year and no subsequent- years bolstering releases made; evaluation difficult. No adequate evaluation made; some birds seen.		
						Apr.				
						Apr.			Carroll County Franklin County " " Carroll County Cumberland County	
						Oct.				
						Mar.				
						spring				
						June				Thurston County Lewis County " " Thurston County Pierce County
						Apr.				
						Mar.				
						Apr.				
Mar.										
1966	56	"	"	"	June	Undetermined.				
1967	40	"	"	"	"					
1967	25	"	"	"	Apr.					
1968	78	"	"	"	"					
1968	16	"	"	"	Mar.					

Reeve's pheasant ( <u>Syrnaticus</u> <u>reevesi</u> )	Iowa	1963-65 <sup>1</sup>	farm	direct	Jan., June, Oct., Nov.	Stephens State Forest	Old game farm strain not suitable for release to wild for purpose of establishing populations; some survival and reproduc- tion but most birds dis- appeared; will experiment for a while longer with Reeves of the "wild French strain" obtained from Tennessee and Missouri.
		1966	"	"	June, Aug., Sept.	Stephens State Forest	Too early to evaluate.
		1967	0				
		1968	180	farm <sup>2</sup>	Sept.	Stephens State Forest (SC Iowa)	"Ohio type" Reeves seem to have almost completely disappeared. Several sightings of newly released wild "French strain" were made this winter; behavior does not appear to be significantly different. Thus prospects are not too bright.
	Missouri	1964-65	213	"	gentle Oct., Mar.- Oct.	Deer Ridge	Fifty percent survival through winter.
		1966	127	farm <sup>3</sup>	Mar., Oct.	" "	Poor prospect.
		1967	72	"	Mar. Oct.	" "	Release terminated with 659 birds liberated; very poor prospect; dispersal, poor survival, gentleness, poor reproduction are problems with this bird.
		1968	0	"	Oct.	" "	

<sup>1</sup> Broodstock not secured under the F.G.I.P.

<sup>2</sup> From "French strain" broodstock secured by F.G.I.P. from France and sent to Tennessee and Missouri.

<sup>3</sup> Research Area.

Table 3. Summary of Foreign Game Bird Releases and Results - 1960-1968 (Cont'd.)

Species	State	Year	Number Re-leased	Source	Direct or Gentle Release	Month of Release	Area	Results to Date
Reeve's pheasant (Cont'd.)	Tennessee	1964-65	513	farm	direct, gentle	Aug.-Sept.	Cumberland County	Birds held 3 to 10 weeks in gentle release pens; survival and retention of liberated birds was Good. Evaluation continuing.
		1966	255	"	"	Mar., July,-Aug.	"	Disappeared.
		1967-68	0					
Himalayan snowcock <sup>1</sup> ( <i>Tetraogallus himalayensis</i> )	Nevada	1963	19	wild, farm	direct	Apr.	Elko County, Ruby Mountains	Six birds seen in 1966. Ruby Mountains Building Yerrington game farm production towards releases in 1968-69.
		1966-68	0					
Spotted tinamou ( <i>Nothura maculosa annexens</i> )	Alabama	1968	8	farm	"	July	Game farm area.	Occasionally seen.
	Florida	1966	49	wild	gentle	Aug.	Ocala National Forest	Few sighted. Evaluation continuing.
		1967-68	43	"	"	"	St. Vincents Island	"
			0					Some birds still seen.
	Texas (King Ranch)	1968	136	"	direct	Sept., Nov.	King Ranch, Texas	No observations in field. Birds gained weight in holding pens while growing primary feathers clipped in quarantine.

<sup>1</sup>This introduction was a State of Nevada effort and not under the F.G.I.P.

Chilean	Hawaii	1966	69	farm	gentle	Sept.	Hawaii and Kauai	No report.
tinamou		1967-68	0					Localized around release
( <u>Nothoprocta</u>								sites; the subspecies
<u>perdicaria</u> ssp.)								<u>perdicaria</u> released on
								<u>Hawaii and sanborni</u> on
								<u>Kauai.</u>

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Pale crested	California	1968	55	"	direct	July	Inyo County	Too soon to evaluate.
tinamou								
( <u>Eudromia</u>								
<u>elegans</u> <u>albida</u> )								

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FOREIGN GAME INVESTIGATION PROGRAM

Table 4. Summary of Foreign Game Bird Propagation Results - 1966-1968

Species	State	Year	Number of breeding hens	How penned (Breeder ratio)	Total eggs laid	Average per hen	Number of fertile eggs	Percent fertile	Number of chicks hatched	Number of birds raised
Black francolin ( <u>Francolinus francolinus</u> <u>asiae</u> )	California	1966	6	-	108	18.0	-	-	32	18
		1967	14	-	373	26.0	-	-	112	48
		1968	39	1:1	753	19.3	234	31	234	130
Florida	1966	10	1:4	0	-	-	-	-	-	-
	1967	9	1:3	184	20.4	184	100	101	30	
	1968	12	2:1	157	13.0	-	-	69	18	
Florida (Eglin A.F.B.)	1966	16	1:1	170	10.6	88	51.8	82	18	
	1967	16	1:1	129	8.1	92	71.3	37	10	
	1968	16	1:1	96	6.0	81	84.4	15	8	
Kentucky	1966	16	1:1	226	14.1	161	71.2	131	86	
	1967	14	1:1	188	13.4	112	51.0	88	40	
	1968	25	1:1	231	9.2	139	60.2	117	77	
Louisiana	1966	90	-	2212	24.6	1625	73.5	1185	793	
	1967	88	1:2;1:3	2486	28.5	1668	67.1	1061	822	
	1968	117	1:1;1:2;1:3	3561	30.4	2494 <sup>1</sup>	78.2 <sup>1</sup>	1655	999 <sup>2</sup>	
South Carolina	1966	-	-	54	-	-	-	33	0	
	1967	discontinued								
Tennessee	1966	150	1:6	2268	15.1	1245	54.9	1110	568	
	1967	102	1:8	1118	11.0	468	41.8	407	236	
	1968	98	1:5	1819	18.6	1068	58.7	1004	594	
Utah	1966	9	flock;1:1	46	5.1	40 <sup>3</sup>	-	28	12	
	1967	9	"	20	2.2	20 <sup>3</sup>	-	9	7	
	1968	-	-	-	-	-	-	-	-	

<sup>1</sup>Based on 3189 eggs incubated.

<sup>2</sup>Raised to 8 weeks of age.

<sup>3</sup>Eggs were not checked for fertility prior to incubation.



Black francolin ( <u>francolinus asiaticus</u> )	Virginia	1966 <sup>1</sup> 1967	- discontinued.	387	-	273	70.5	222	155
Gray francolin ( <u>francolinus pondicerianus interpositus</u> )	California	1966 1967 1968	- - 1:1	2441 1529 1753	33.4 16.8 19.5	764 - 717	31.3 - 41	744 437 -	608 259 490
	Texas	1966 1967 1968	1:3;1:1 1:3 3:1;4:1	2155 2063 4109	14.2 14.7 25.7	- - 2273	- - 55.3	929 973 1872	845 850 1691
	Utah	1966 1967 1968	17 flock;1:1 " 1:1	19 12 9	1.1 1.0 1:1	18 12 -	- - -	12 6 0	10 4 0
	Washington	1966 <sup>2</sup>	-	-	-	-	-	-	-
Bamboo partridge ( <u>Bambusicola thoracica</u> )	Alabama	1966 1967	1:1 discontinued	912	26.8	500	55.6	365	105
	Kentucky	1966 1967 1968	4 9 15	164 255 438	41.0 28.3 29.2	90 88 138	54.9 34.5 31.5	49 37 78	23 13 38
	Louisiana	1966 1967	16 discontinued	427	26.7	225	52.6	109	49
	Oregon	1966 1967 1968	85 134 120	2084 2553 1913	24.5 19.0 15.9	978 1148 789	46.9 53.0 41.2	640 808 435	354 565 284

<sup>1</sup> Total eggs represents eggs gathered from and credited to the breeders. However, there is a loss of eggs between gathering and setting and the number of set eggs is not shown in this table, but it is used in computing the number and percentage of fertile eggs. No data received for 1967 and 1968; possibly discontinued rearing this species.

<sup>2</sup> All birds died of a respiratory disease.

Table 4. Summary of Foreign Game Bird Propagation Results - 1966-1968 (Cont'd.)

Species	State	Year	Number of breeding hens	How panned (Breeder ratio)	Total eggs laid	Average per hen	Number of eggs fertile	Percent fertile	Number of chicks hatched	Number of birds raised
Bamboo partridge (Cont'd.)	Tennessee	1966	50	1:1	1168	23.4	500	42.8	385	211
		1967	discontinued							
	Washington	1966	446	1:1;flock	2808	6.3	1258	44.8	-	770
		1967	374	flock	4452	11.9	2587	58.1	-	1339
		1968	495	1:1;flock	4847	9.8	1861	38.4	-	695
Spanish red-legged partridge (Alectoris <u>rufa hispanica</u> )	California	1966	234	-	108	18.0	33	30.5	32	18
		1967	300	-	3535	11.7	-	-	2484	1440
		1968	284	3:1	1004	3.5	748	74.5	-	500
French red-legged partridge (Alectoris <u>rufa rufa</u> )	California	1966	180	-	1384	7.7	-	-	1015	857
		1967	312	-	1642	5.2	-	-	882	655
		1968	296	3:1	1012	3.4	506	50.0	-	272
50	Virginia	1967	31	1:1	709	22.0	453	64.5	427	412
		1968	31	1:1	593	19.0	441	74.4	405	367
	Washington	1966	292	flock	1833	6.2+	1565	85.4	-	1338
		1967	292	"	3021	10.3	2374	78.5	-	2176
		1968	318	flock;1:1	1427	4.5	1187	83.2	-	905
Seesee partridge (Ammodendix <u>griseogularis</u> )	California	1967	30	-	446	14.9	-	-	207	145
		1968	96	1:1	310	3.4	128	41.0	-	80
	Utah	1966	15	flock;1:1	429	28.6	410	-	289	217
		1967	40	"	489	12.2	439	-	270	198
		1968	34	1:1	144	4.2	-	-	98	77

1 Not a F.G.I.P. introduction.

2 Introduced by California.

Turkish chukar partridge (Alectoris graeca cypristes and Nebraska <sup>2</sup> )	1966	42	-	1263 <sup>1</sup>	30.1	730	74.2	714	485
	1967	30	1:3	940	31.0	586	62.3	-	390
	1968	-	-	-	-	-	-	-	-
	1966	-	-	-	-	-	-	-	3600
	1967	-	-	-	-	-	-	-	2485
	1968	-	-	-	-	-	-	-	4517
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Greek chukar partridge <sup>2</sup> (Alectoris graeca sso.)	1966	84	-	1910	22.7	-	-	1507	1146
	1967	30	-	847	28.2	-	-	673	440
	1968	-	-	-	-	-	-	-	-
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Barbary partridge (Alectoris barbara)	1966	60 <sup>3</sup>	-	755	12.6	-	-	579	470
	1967	50	-	1080	21.6	-	-	818	454
	1968	49	3:1	1100	21.6	819	75.0	-	575
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Red junglefowl (Gallus gallus murghi)	1966	32	1:4	928	29.0	606	66.4	493	197
	1967 <sup>4</sup>	55	1:4	1766	32.1	1158	66.0	610	390
	1968 <sup>4</sup>	166	1:4	1825	10.2	1082	59.3	822	322
	1966	20	1:5	254	12.5	131	50.6	128	72
	1967	20	1:4	559	27.8	338	60.5	221	75
	1968	20	1:4	529	26.5	346	65.4	183	44
	1966	100	-	2380	23.0	1975	83.0	1817	360
	1967	90	-	2010	22.0	1708	85.0	1119	600
	1968	100	5:1	2200	22.0	1760	85.0	1230	600

<sup>1</sup> 278 eggs sent to Wyoming.

<sup>2</sup> Introduced by Nebraska or California; not a F.G.I.P. introduction.

<sup>3</sup> California introduced; wild collected eggs flown to California from Morocco, North Africa.

<sup>4</sup> Eggs were collected in both breeding pens and conditioning pens where 130 hens were being conditioned for spring release. All totalled, 166 hens laid 1825 eggs. 1082 of these eggs were fertile. 822 chicks were hatched and 332 were raised up to 6 weeks of age. (Records were kept up to June 30).

Table 4. Summary of Foreign Game Bird Propagation Results - (1966-1968 (Cont'd.))

Species	State	Year	Number of breeding hens	How penned (Breeder ratio)	Total eggs laid	Average per hen	Number of eggs fertile	Percent fertile	Number of chicks hatched	Number of birds raised
Red junglefowl (Cont'd.)	Kentucky	1966	30	1:6	759	25.3	389	51.3	300	295
		1967	-	-	-	-	-	-	-	-
		1968	10	5:1	61	6.1	48	78.7	39	37
	Louisiana	1966	20	-	420	21.0	302	70.7	201	168
		1967	21	1:3;1:4	1149	54.7	728	63.4	452	386
		1968	discontinued							
	South Carolina	1966	-	-	798	-	-	-	568	197
		1967	26	-	-	-	-	-	214	100
		1968	70	-	2117	30.2	-	-	567	417
	Tennessee	1966	50	1:6	897	17.9	577	64.3	538	471
		1967	discontinued							
Western Iranian pheasant (pure strain)	Alabama	1966	78	1:6	1520	19.5	1176	77.4	870	471
		1967	44	1:6	1454	33.0	1022	70.3	733	479
		1968	48	1:6	1076	22.4	861	80.0	422	351
(Phasianus colchicus talischensis)	Indiana	1967	5	1:5	95	19.0	-	-	8	8
		1968	-	-	-	-	-	-	-	-
	Oklahoma	1966	237	flock	841	3.6	724	76.0	545	478
		1967	200	"	615	3.0	476	79.0	281	233
		1968	112	"	759	6.8	634	87.3	531	474
	South Carolina	1966	-	-	526	-	-	-	93	16
		1967	60	-	808	-	-	-	413	265
		1968	54	4:1	924	17.0	-	-	584	370
	Tennessee	1966	102	1:6	801	6.7	506	63.2	380	313
		1967	120	1:5	1955	17.1	1126	57.6	991	713
		1968	95	1:3	1635	17.0	1060	64.8	992	770

Western	Virginia	1966	25	1:5	396	16.0	312	87.4	208	146
Iranian		1967	20	1:5	287	14.0	229	88.5	139	86
pheasant		1968	32	1:4	183	6.0	138	75.4	118	90
(pure strain)										
( <u>Phasianus</u>										
<u>colchicus</u>										
<u>talischensis</u> )										
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Western	Florida	1966	25	-	790	32.0	632	-	-	603
Iranian		1967	30	-	500	17.0	400	80.0	-	333
ringneck cross		1968	discontinued							
	Indiana	1967	150	9 cocks	7029	47.0	-	-	3248	1643
		1968	200	1:40	9703	48.5	-	-	3663	1807
	Kentucky	1966	30	1:6	673	22.4	540	80.2	436	427
		1967	discontinued							
	Tennessee	1966	132	1:6	5144	39.0	3675	71.4	3411	2998
		1967	113	1:5	5570	49.3	4316	77.5	4058	3538
		1968	90	1:3	4095	45.5	3342	81.6	3239	2803
	Virginia	1966	183	1:5	6294	39.0	5285	84.2	4257	2980
		1967	200	1:5	14320	48.0	10604	74.8	7008	6037
		1968	220	1:5	9542	43.0	7130	74.7	4705	4368
	Texas	1968	70	30-5:1 40-flock	2351	33.6	1816	77.2	1461	1277
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Eastern	Oklahoma	1966	96	flock	727	7.6	570	78.4	530	335
Iranian		1967	135	"	1060	7.9	942	90.0	824	738
black-necked		1968	165	"	1672	10.0	1277	78.0	1122	908
pheasant										
(pure strain)										
( <u>Phasianus</u>										
<u>colchicus</u>										
<u>persicus</u> )										
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Table 4. Summary of Foreign Game Bird Propagation Results - 1966-1968 (Cont'd.)

Species	State	Year	Number of breeding hens	How penned (Breeder ratio)	Total eggs laid	Average per hen	Number of fertile eggs	Percent fertile	Number of chicks hatched	Number of birds raised
Eastern Iranian ringneck cross	Kentucky	1966	30	1:6	912	30.4	601	65.9	470	427
		1967	discontinued							
		1966 <sup>1</sup>	79	1:4	837	10.0	397	61.0	272	242
	Maryland	1967	200	1:4	4129	20.0	2474	60.0	1655	1655
		1968	240	1:4	2036	8.0	1362	67.0	1362	1255
Japanese green pheasant (Phasianus colchicus <u>robustipes</u> )	Idaho	1966	70	5:8	1740	25.1	1560	89.7	1261	965
		1967	433	8:5	5041	11.6	4360	92.0	3315	2486
		1968	563	flock; 8.6:1	3777 <sup>2</sup>	6.4	2960	81.7	2050	1360
		1967	5	1:5	145	29.0	-	-	2	2
		1968	4	1:1	156	39.0	-	-	80	50
	Kentucky	1966	12	1:6	209	17.4	128	61.2	108	95
		1967	22	1:6	315	14.6	223	70.7	167	166
		1968	34	6:1	558	16.4	403	72.2	366	308
	Louisiana	1966	27	1:3	796	29.5	508	63.9	335	185
		1967	23	1:4	1139	49.5	774	68.0	430	259
		1968	discontinued							
	Maryland	1966 <sup>1</sup>	16	1:4	269	17.0	73	60.0	58	43
		1967	discontinued							
	New York <sup>3</sup>	1966	45	2 per hen	1214	26.9	set 982	86.8	688	299
		1967	218	7 per hen	2823	12.9	set 2211	89.3	1301	672
				19 per yard			2475			
1968	200	17 per yard	8019	40.0	7298	91.0	3633	4		

<sup>1</sup> These figures were reported on 6/30/66 by the game farm manager; however, there was a subsequent hatch of eggs of this species for which no records are available.  
<sup>2</sup> A total of 150 eggs broken.  
<sup>3</sup> Breeders not secured under the F.G.I.P.  
<sup>4</sup> 5,146 birds on hand Sept. 30, 1968 for spring release 1969. Japanese and Korean sp. were brooded and reared together.

Japanese green pheasant (Phasianus colchicus robustipes)	Virginia	1966	102	1:5	2651	26.0	1891	79.1	1403	982
		1967	20	1:5	595	29.8	486	82.5	339	296
		1968	20	1:5	315	16.0	255	80.9	204	167
	Washington	1966	101	1:3	3125	30.9+	1984	63.4	-	1630
		1967	300	1:3	2500	8.3	1615	64.6	-	902
		1968	300	1:3	5000	16.6	3359	67.1	-	2282
Korean ringneck pheasant (pure strain)	Indiana	1967	150	1:5 <sup>1</sup>	4721	31.0	-	-	2442	1033
(Phasianus colchicus karpowi)		1968	25	1:5	469	18.8	-	-	231	70
	Kentucky	1966	33	1:6	724	22.0	530	73.2	397	365
		1967	46	1:6	1616	35.1	1184	73.3	945	859
		1968	48	6:1	1571	32.7	1182	75.2	882	767
	Missouri	1966	125	1:5;1:8	3553	28.4	2629	74.0	2140	1773
		1967	141	1:8;1:5	3401	24.1	2585	76.0	2398	2108
		1968	162	1:8	3430 <sup>2</sup>	21.2	2247	70.0	2006 <sup>3</sup>	1354 <sup>4</sup>
	New York	1966 <sup>5</sup>	13	6 per pen	579	44.5	set 536	93.5	488	419
				3 per pen			573			
		1967	182	2 per yard	4256	23.3	set 3367	93.2	2889	2073
				11 per pen			3609			
				13 per pen						
		1968	170	1:6;1:1	5215	-	4694	90.0	3569	- <sup>6</sup>
	Pennsylvania	1966 <sup>5</sup>	-	-	-	-	-	-	87	-
		1967	51	1:5	845	17.0	665	78.7	512	465
		1968	50	flock;1:10	705	14.0	631	89.5	427	326 (to 12/31/68)

1 Thirty cocks.

2 Includes 200 broken eggs.

3 23% drowned at hatch (excess cocks).

4 To six weeks of age.

5 Breeding stock obtained directly from Korea via eggs brought back in 1966 by State personnel

6 5146 birds on hand Sept. 30, 1968 for spring release 1969. Japanese and Korean species were brooded and reared together.

Table 4. Summary of Foreign Game Bird Propagation Results - 1966-1968 (Cont'd.)

Species	State	Year	Number of breeding hens	How panned (Breeder ratio)	Total eggs laid	Average per hen	Number of eggs fertile	Percent fertile	Number of chicks hatched	Number of birds raised
Korean ringneck pheasant	Texas	1968	17	flock	722	42.5	621	86.0	555	450
		1967	14	1:4	377	27.0	335	89.8	294	243
		1968	90	1:5	1532	17.0	1358	88.6	1261	1075
Korean ringneck pheasant cross	Pennsylvania	1966	985 <sup>1</sup>	-	24001	-	15168	68.0	13839	11094
		1967	9853	-	27960	-	14716	-	13183	11471
		1968	discontinued							
Korean Western Iranian cross	Missouri	1966	27	1:5;1:8	619	22.9	445	72.0	414	399
		1967	71	1:8;1:5	1829	25.8	1448	79.2	1313	989
		1968	80	1:5	2026 <sup>4</sup>	25.3	1690	85.0	1474 <sup>5</sup>	969 <sup>6</sup>
Chinese ringneck pheasant (Phasianus colchicus ssp.)	Texas	1966	60	1:5	1475	24.6	-	-	777	679
		1967	38 <sup>7</sup>	1:3;1:4	637	16.8	-	-	323(cross)	271
		1968	-	-	-	-	-	-	-	-

<sup>1</sup> Hens were held 56 days in 1966; hen mixture 1966-67, 900 WGF and 85 Kor.C. respectively. Stock provided under the F.G.I.P.

<sup>2</sup> Breeding stock obtained directly from Korea via eggs brought back in 1966 by State personnel.

<sup>3</sup> Hens were still laying when shipped for release; held for 59 days in 1967; when sufficient eggs were obtained to produce enough chicks for the programs, chicks or eggs were no longer marked or identified.

<sup>4</sup> Includes 45 broken eggs.

<sup>5</sup> 25% drowned at hatch (excess cocks).

<sup>6</sup> To six weeks of age.

<sup>7</sup> Stock wild-trapped in California.



Afghan	1966	127	-	4562	35.9	-	2419	1357
white-winged	1967	50	-	1982	39.6	-	831	563
pheasant	1968	56	8:1	2179	39.0	980	945	725
(Phasianus								
colchicus	1966	546	1:6	13168	24.1	8500	8500	5500
<u>bianchii</u> )	1967	422	"	10002	32.7	(approx.)	(approx.)	(approx.)
	1968	400	6:1;4:1	10372	25.9	7305	6700	6000
								(approx.)
Nevada	1968	20	1:5	320	16.0	259	159	76 <sup>1</sup>
Oklahama	1966	122	flock	625	5.1	429	368	305
	1967	151	1:5	2169	14.3	1601	1162	925
	1968	137	1:6	1901	14.0	1267	974	754
Texas	1967	49	1:10;2:10	1486	30.3	-	1013	889
	1968	65	12:2	2053	31.6	1499	1242	1080
Utah	1966	109	flock;1:5	1938	17.8	1850	734	352
	1967	85	"	1821	21.4	1764	886	650
	1968	200	10:1	3138	15.7	-	1584	372
White crested	1966	20	1:1	212	10.6	90	58	53
Kalij pheasant	1967	32	"	398	12.4	124	90	78
(Lophura	1968	36	24 pens 1:1;	230	6.4	125	93	74
<u>leucomelana</u>			1 group flock;					
<u>hamiltoni</u> )			5 cocks; 12 hens					
Tennessee	1966	84	1:1	1562	18.6	980	933	815
	1967	101	1:1	1830	18.1	1266	1225	888
	1968	110	1:1	2275	20.7	1392	1342	1046
Virginia	1966	32	1:1	620	20.0	472	391	274
	1967	20	1:1	339	17.0	162	181	147
	1968	16	1:1	408	26.0	271	206	182

1 Reared to January 1, 1969.

Table 4. Summary of Foreign Game Bird Propagation Results - 1966-1968 (Cont'd.)

Species	State	Year	Number of breeding hens	How penned (Breeder ratio)	Total eggs laid	Average per hen	Number of eggs fertile	Percent fertile	Number of chicks hatched	Number of birds raised
White crested Kalij pheasant (Cont'd.)	Washington	1966	42	flock	280	6.6+	174	62.1	-	135
		1967	50	"	96	1.9	60	62.5	-	41
		1968	50	flock;1:1	103	2.1	89	86.4	-	85
Reeve's pheasant ( <i>Syrmaticus reevesii</i> )	Iowa	1967	18 <sup>1</sup>	1:3	11	0.6	4	44.0	1	0
		1968	50 <sup>2</sup>	1:4	816	16.3	595 (of 9 set)	72.9	437	247
Himalayan snowcock ( <i>Tetraogallus himalayensis</i> )	Missouri	1966	45	1:5	781	17.4	566	72.4	336	293
		1967	53	1:5	756	14.3	559	73.9	438	359
		1968	Propagation terminated in 1967							
Elegant crested tinamou ( <i>Eudromia elegans</i> )	Tennessee	1966	50	1:8	610	12.2	351	57.5	328	185
		1967	-	-	-	-	-	-	-	-
		1968	-	-	-	-	-	-	-	-
Himalayan snowcock ( <i>Tetraogallus himalayensis</i> )	Nevada	1967	29	1:1;1:2;1:3	409 <sup>3</sup>	14.1	225	59.0	102	53
		1968	54	1:1;1:2	337	6.2	192	60.0	140	64
		1966	-	-	-	-	-	-	-	-
Elegant crested tinamou ( <i>Eudromia elegans</i> )	Nevada	1967	14 <sup>4</sup>	-	193	13.8	-	-	68	5
		1968	30	1:1	327	21.8	158	46.9	-	45
		1966	-	-	121	40.0	81	71.0	28	-
Elegant crested tinamou ( <i>Eudromia elegans</i> )	Nevada	1967	3	1:1	-	-	-	-	-	-
		1968	4	5:4	46	-	31	72.0	20	0

1 These were juvenile hens of the wild "French" strain obtained from Tennessee in fall of 1966.  
 2 "French strain" stock received from Tennessee and Missouri.  
 3 Nevada Fish and Game, Mason Valley and Poultry Husbandry Facility, University of California, Davis.  
 4 Not examined for sex; one half of breeding stock.

Elegant crested tinamou ( <u>Eudromia elegans elegans</u> ) (Cont'd.)	Utah	1966	47	flock; not sexed	1	9.2	105	75.2	59	43
		1967	15	4:7; 4:8 discontinued	139					
		1968								
		1966	-	flock	39	-	38	-	21	12
		1967	4	flock; 1:1	36	9.0	36	-	11	3
		1968	3	1:1	61	20.3	unknown	unknown	33	15
<hr/>										
Crested tinamou ( <u>Eudromia elegans elegans</u> and <u>albida</u> cross)	Nevada	1966	34 <sup>2</sup>	flock	165	-	-	-	-	38
		1967	20	flock; 1:1	645	-	377	65.0	151	-
		1968	22	1:1; 1:2	529	-	341	73.0	222	40
<hr/>										
Pale crested tinamou ( <u>Eudromia elegans albida</u> )	California Nevada	1967	16 <sup>3</sup>	-	211	13.2	-	-	71	10
		1968	34	1:1	326	18.8	159	47.0	-	44
		1966	0	-	-	-	-	-	-	-
		1967	21	flock; 1:1; 1:2	727	34.6	508	75.0	192	-
		1968	16	1:1; 1:2	654	-	495	77.0	294	122
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Southern crested tinamou ( <u>Eudromia elegans patagonica</u> )	Nebraska	1968	14 <sup>4</sup>	-	-	-	-	-	-	-
<hr/>										
Spotted tinamou ( <u>Nothura maculosa annectens</u> )	Alabama Georgia	1967	9	1:2	102	12.8	73	73.7	62	29
		1968	12	1:2	279	23.3	134	48.0	106	50
		1966	6	-	2	-	0	-	-	-
		1967	6	-	49	8.0	-	-	18	11
		1968	6	1:1	20	3.0	-	-	1	0

1 Birds received in poor condition due to airline strike.

2 Total for both sexes.

3 Not examined for sex; one half of breeding stock.

4 Breeder stock received from Argentina June 1968; birds not sexed; twelve eggs laid by July 13.

Table 4. Summary of Foreign Game Bird Propagation Results - 1966-1968 (Cont'd.)

Species	State	Year	Number of		Total	Average	Number		Number
			breeding	How penned			eggs	per	
			hens	(Breeder ratio)	laid	hen	fertile	hatched	raised
Spotted tinamou (Cont'd.)	Louisiana	1966	-	-	43	-	5	3	0
		1967	4	1:1	32	8.0	11	1	0
		1968	9	1:1;1:2	107	11.9	87	60	26 <sup>1</sup>
	Oklahoma	1966	22	flock	7	.3+	5	5	2
		1967	26	2:3	292	11.2	222	139	108
		1968	30	1:2	1087	36.2	702	362	183
	Tennessee	1966	10	1:1	39	3.9	21	11	10
		1967	10	1:1	242	24.0	93	47	22
		1968	14	1:1	176	12.6	76	36	14
Pale spotted tinamou (Nothura darwini)	Colorado	1966	9	flock	19	2.1	6	2	2
		1967	14	"	166	11.9	74	44	28
		1968	18 <sup>2</sup>	flock;1:1 <sup>2</sup> ,3	331	18.0 <sup>4</sup>	226	108	64
salvadorii)	Oklahoma	1966	85	flock	4	.5	3	1	0
		1967	1	3:1	none				
		1968		discontinued					
	Oklahoma	1966	7 <sup>6</sup>	flock	6	1.2	3	3	1
		1967	10	1:1	180	18.0	136	85	51
		1968	26	1:1;1:2	590	22.7	243	125	90
Utah	1966	-	flock	31	-	31	19	9	
	1967	1	flock;1:1	-	-	-	-	-	
	1968	-	-	-	-	--	-	-	

1 Raised to 8 weeks of age.  
 2 Birds not sexed so 37 were kept in a community pen. Assume about half were hens.  
 3 Assume a breeder ratio of 1:1.  
 4 If the sexes were evenly divided the average number of eggs per hen would be about 18.  
 5 Stock from Mendoza Province, 10 inch rainfall zone.  
 6 Stock from San Luis Province, 20 inch rainfall zone.

Red-winged tinamou	Alabama	1967	7	1:2;1:3	145	20.7	85	59.4	64	49
( <u>Rhynchotus rufescens</u> )		1968	18;8	1:3;1:1(Flock)	343;96	19.0;11.4	193	44.5	122	88 <sup>1</sup>
( <u>pallascens</u> )	Guam	1967	10-11 <sup>2</sup>	-	0	-	-	-	-	-
		1968	-	-	-	-	-	-	-	-
	Oklahoma	1966	4	2:4	11	2.8	7	65.6	7	4
		1967	8	1:4	85	10.5	48	57.0	25	19
		1968	14	1:3	215	15.3	121	56.3	48	45
	Tennessee	1967	4	1:1	101	23.0	41	44.5	18	15
	( <u>Nothoprocta pentlandii</u> )	1968	13	1:1	94	7.2	29	30.9	7 <sup>3</sup>	5
	( <u>doeringi</u> )									
	Large brushland tinamou	1966	44	flock (not sexed) <sup>4</sup>	none	-	-	-	-	-
	( <u>Nothoprocta cinerascens</u> )	1967	18	1:2	202	11.2	154	75.9	111	100
		1968	18	1:3	135	7.5	72	53.4	49	47
	Chilean tinamou	1966	6	1:1	1	0	-	-	-	-
	( <u>Nothoprocta perdicaria</u> )	1967	8	1:1	104	13.0	69	66.3	38	30
	( <u>samborni</u> )	1968	23	17 pens 1:1 3 pens 2:2	366	15.9	285	77.8	121	94
	Washington	1966	21	1:2;1:3	23	1.1-	1	4.3	-	1
		1967	21	1:2;1:3	129	6.1	39	30.2	-	17
		1968	23	1:3;1:2	276	12.0	151	54.7	-	41

- 1 Record through June 30. About 40 additional reared through November 1.
- 2 From 25 tinamou received March 1967 from Argentina, 17 were alive through November 28, 1967.
- 3 Due to poor incubation. Eggs subsequently set under bantams hatched well.
- 4 Birds received in poor condition due to airline strike.















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UNITED STATES  
DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE  
BUREAU OF SPORT FISHERIES AND WILDLIFE  
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