7. Do your enforcement officers ever engage in such activities as:
   (a) Tacking up campaign posters?_____
   (b) Helping with political rallies?_____.
   (c) Transporting voters to the polls?_____.
   (d) Making political speeches?_____.
   (e) Collecting or disbursing party campaign funds?_____.
   Sign if you want to:_____

TECHNICAL GAME SESSION

FOREIGN GAME INTRODUCTIONS INTO THE SOUTHEAST

By Dr. Gardiner Bump
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In a certain sense the following discussion on exotic species is the strangest as well as the most controversial subject on this program. It is strange because everyone here is himself, in the not too distant past, a transplant from a foreign country. The clothes we are wearing, the food we ate for lunch and the orderly processes of our civilization all have their antecedents beyond the shores of North America. Their introduction and subsequent adaptation to our particular needs is one of the richest and most colorful sagas in the history of civilization.

Change is a law of life and changes for the better are the cornerstones of progress. Small wonder is it then that man's faith in bettering his lot with new things from beyond his own doorstep is deeply ingrained in all the world's progressive people. It is this combination of experience, faith and hope that, in our own field, sparks the hunters' search for new game species.

But not all changes are for the better and here the controversy begins between those who would chance the risks involved in change and those who prefer the status quo. As regards wildlife introductions both groups can present points worthy of serious consideration. Those in favor point to the success attendant upon the introduction of the ring-necked pheasant, the Hungarian partridge and the chukar and the constantly decreasing productivity of many game habitats under the pressure of modern agriculture, forestry and grazing. Those against remind us of the time, labor and money wasted in the many unsuccessful attempts, of the danger of introducing new diseases or of a species that might compete successfully with our native fauna or prove detrimental to farm or forest crops.

Faced with such a situation experience has indicated a logical course of action. Simply put, it is to determine the need, calculate the risks and, if action is indicated, formulate and carry out the project in such a way as to court success while reducing the danger of unfavorable results to a minimum.

Let us explore this course. The need can be set forth in simple terms. Year by year the number of individuals seeking relaxation through hunting is increasing. Yet the area available for this sport is slowly decreasing. Likewise, much of the habitat which mothers our game crop is becoming less and less able to produce shootable surpluses under the impact of clean farming, over-grazing, drainage, scientific forestry, urbanization and declining soil fertility.

Faced with this situation, common sense dictates the present 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 fraction of these lands can be restored to reasonable productivity in the foreseeable future. There are other coverts which were never 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 must be found or such areas will continue to provide hunting opportunities far below their productive potential. This is the logic behind the current interest in finding new birds and mammals which will augment, but not compete with, native species. This logic was clearly recognized by every one of the 22 State Fish and Game Commissions contacted on my recent trip from Virginia to California.

Why then the hesitation in trying out new species? Again it is the product of experience. Game introductions are usually expensive, and the results are, at best, uncertain. Attempts to acclimatize foreign species in the United States have usually ended in failure. As mentioned previously, there is always the possibility that new diseases may be brought in, that new species may cross with or successfully compete for food or territory with our native fauna or prove to be pests to agriculture. Instances in support of these considerations are a matter of record and deserve thoughtful consideration. Yet it is also a matter of record that highly successful and productive introductions have been made without encountering any of the difficulties mentioned above. What is needed, then, is a clear understanding of when and where introductions are justifiable and how to carry them out so as to combine the maximum chance of success with the minimum of risks.

WHEN AND WHERE MAY INTRODUCTIONS BE DESIRABLE

Desirable introductions, like pine trees, possess certain identifying characteristics. For ready reference let us list them.

1. They should meet a clearly recognized need not currently filled by native species.
2. They must thrive in large numbers in habitat and under climatic conditions which are similar to those existing in the area into which they will be liberated.
3. Proper food and adequate water, adaptable to their needs, must be available in the habitat in which they are to be liberated.
4. They must be adaptable and able to withstand heavy hunting pressure.
5. They must not be seriously detrimental to agriculture in their native range.
6. They must be relatively disease-free and by habit not likely to develop into serious competitors with native species for food or territory.
7. They must possess a high reproductive potential and resistance to predation.
8. It must be possible to secure them in numbers sufficient to make a satisfactory release, usually over a period of years. It is not always possible to select the best habitat for liberation and wild-trapped animals may usually be expected to scatter widely upon liberation in a new place. Perhaps this is the reason why the ubiquitous English sparrow and the starling were introduced several times before they took.

To check this list is to conclude, inescapably, that knowledge of the characteristics and life history of any species considered for introduction is a prerequisite to success which can be ignored only by thoughtless, ignorant and pernicious gamblers. Successful introductions begin with adequate field studies conducted overseas in the native habitat. Without them history tells us that to turn loose a foreign species in a new environment is, like children, to play with a fire they may never be able to extinguish should the need arise.

One might well believe that it would be difficult to find new game that would meet all the requirements listed above. Few people have any conception of the variety of game from which selections might be made. Yet the world game bank contains at least 355 species and 678 subspecies of game birds alone and exclusive of pigeons, doves, waterfowls and shore birds from which selections might be made. Included are grouse, pheasants, quail, partridges, guinea fowl, francolin, sandgrouse, bustards and tinamou, to mention only the major groups, which might provide species adaptable to one or another part of the United States. Similarly, southeastern game habitats are found, in counterpart, on all of the continents of the world save Australia and Antarctica.

Thus, logically, we come to the question of where new species might be tried. On this point, a considerable variation of opinion is to be expected because game species, wildlife habitats and hunting interests and pressures are not the same in one state as compared with another. My own feeling is that foreign species should be liberated only:

1. Where the climate and vegetative conditions are similar to those existing in their native range.
2. In those habitats that are normally unable to support native species in numbers sufficient to absorb substantial hunting pressure.
3. Where restoration of productive habitat conditions for native species is not economically feasible.
4. Where changes in land use due to agricultural, forest or grazing practices are rendering the land progressively less productive of native wildlife.
5. Where hunting pressures are substantial and a foreign species of low competitive potential and high promise is available and might fit in. An example would be a pheasant which was adaptable to much of the cultivated lands throughout the southeast.

HOW SHOULD TRIAL INTRODUCTIONS BE CARRIED OUT

There remains but one more item to be considered—how should the job be done. Since this has already been discussed with all Southeastern States we can be brief.

Two methods are possible. The first is expressively dubbed the "hit and miss" method. It consists of liberating foreign species without previous study and usually in large numbers in a scatter gun pattern over wide areas in the hopes that some will find conditions right and thrive. It is expensive, wasteful and foolish but it is the easy method and, therefore, has been widely adopted in the past. Its antecedents are hope, faith and action; its finish, usually failure.

Faced with this prospect, the Fish and Wildlife Service and the Wildlife Management Institute, seven years ago, teamed up with interested state personnel to work out a better method. Possibilities were canvassed and successes and failures analyzed. The International Association of Game, Fish and Conservation Commissioners formed a standing committee on the introduction of exotics which has worked closely with the project since its inception. A small, pilot program, cooperating with Southwestern States, and organized with a minimum of publicity and funds, provided experience. It proved conclusively that tests of foreign species can be carried on in a small, scientific, practical manner without ballyhoo, without much publicity, without expending more than a few thousand dollars a year for species tried and, most important of all, without engendering much pressure from the always enthusiastic sportsmen. Nor have the state biologists who are conducting these tests found evidence of competition with native game, damage to crops or, in fact, any indication to justify the fears of introductions that have been expressed.

What are the guidelines for such a project as laid down for us by analysis and experience? Briefly put, they are seven in number.

1. Select the game-deficient habitats most in need of attention.
2. List their biological characteristics.
3. Send competent biologists overseas to locate similar habitats, study the game that live there and make careful life-history analyses of the most promising species for the information of interested states.
4. Collect, quarantine and send, over a period of several years, those species that the states consider to be worth a trial and in numbers sufficient to make an adequate test.
5. Select and prepare the best liberation areas possible for these species in cooperation with the biologists who have actually studied the species overseas.
6. Turn loose the species in these areas by the gentle-release method and in adequate numbers over a period of at least three years.
7. Determine the results by a well-organized follow-up study carried out for at least 5-6 years thereafter. In most cases at least 10 years will elapse between liberation and the first open season, should the plant prove successful. If the species fails, drop it but record the effort. But if it is successful use the wild stock then available, to spread the species rapidly to new coverts.

Too much has already been spent and said on and about exotics tried under the "hit-and-miss" method. Gibbons in writing his long famous "History of the Decline and Fall of the Roman Empire" remarks that "a crowd of critics, of compilers, of commentators, darkened the face of learning." The same holds

good about exotics and will until we apply science and common sense to the problem. Let's do it—and do it right.

NINE YEARS OF PROGRESS IN FARM GAME MANAGEMENT IN NORTH CAROLINA, 1948-1957

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INTRODUCTION

A statistical survey (PR Project 26-R) of the economic value of game and fish in North Carolina conducted in 1948 indicated that 51.2 percent of the sportsmen of North Carolina preferred to hunt farm game (quail and rabbit). As a result of this demonstrated interest, a great deal of emphasis has been placed on farm game management by the North Carolina Wildlife Resources Commission. The objectives of this paper are to (1) review the various stages of development of the North Carolina farm game program, (2) list some of the problems encountered and (3) summarize the results to date.

CONCEPT OF FARM GAME MANAGEMENT IN 1948

A state-wide investigation of wildlife habitat in North Carolina (PR Project 20-R) indicated that farm game populations were declining. It was apparent that there was a need for restoration measures to provide suitable nesting and protective cover and permanent sources of winter and spring foods. It was thought that this restoration could be accomplished by providing technical advice and distributing perennial planting materials to interested farmers and landowners. Perennials were chosen because they would furnish food and cover for a period of several years, thus making it possible to progress from one farm to another and eventually accomplish management on a state-wide basis.

The Wildlife Resources Commission was cognizant of the fact that most of the farm game in North Carolina was being produced on privately owned land and recognized that any management program, in order to be effective, must be designed to encourage and aid private landowners in managing their lands for farm game.

In 1948 the Wildlife Resources Commission initiated a Cooperative Farm Game Habitat Development Project. The objective of the project was to improve and maintain wildlife habitat on each of the 270,000 farms in North Carolina. It was thought that this objective could be accomplished if two separate approaches were made: (1) The establishment of demonstration areas, and (2) the state-wide distribution of wildlife food and cover planting materials.

DEMONSTRATION AREAS

Demonstration areas were to be developed in localities representative of the various physiographic regions of the state. Each such area was to be leased by the Wildlife Resources Commission for a period of five years and developed cooperatively with the landowner and the local sportsmen's or civic club participating.

The areas were designed to demonstrate accepted farm game management practices and planting techniques to landowners and sportsmen. A total of nine areas ranging in size up to 1,000 acres were selected for development the first year. Each area was posted with signs indicating that it was a Cooperative Farm Game Habitat Development Area and that hunting would be allowed only by permission of the landowner. The areas were cover-mapped and management plans were made. Management plans emphasized the use of bicolor

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