ECONOMIC VALUE OF WILD BIRDS

California has just established a state bird farm near Hayward, Alameda County. Its first object is to breed game birds for the stocking of the forests, ranges and covers of the state, for the benefit of sportsmen; but it promises to have other and more far-reaching

The species at first to be propagated consist of pheasants, partridges, bob-whites and wild turkeys, but it is the intention of the state in time to breed song-birds as well.

As the state has an area of more than 153,-000 square miles, and the bulk of this area be wild land, it may be plainly seen that the field is very large, and offers great possibilities in the line of bird culture.

Next to the sportsmen, the farmers of the state will become interested in the movement. In the first place it is the intention of the promoters of the scheme to have the game laws amended so as to permit the farmers to raise pheasants and other birds for commercial pur-

But far and away beyond this interest comes that of a possible conquest of the insectpest evils that afflict the state. By reason of its mild and equable climate California is a very favorable field for the rapid increase of insect life, and the wild birds being scarce the injurious insects have in the past become a host, and have caused millions of dollars damages to the fruit growers.

And in order to keep these insect pests under anything like reasonable control the state is obliged to maintain one of the most extensive horticultural quarantine departments in the world; to use vast amounts of sprays and fumigants and to maintain a parasitic system that

is a wonder of modern industrial history. Yet, with all the repressive measures employed, the losses from insect-pests are very large annually, and the propagation of wild birds should be hailed by the farmers of the state as a hopeful sign for the future.

Briefly, the bird farm is supported by funds derived from the state treasury, and is under the general supervision of the State Game and Fish Commission. It consists at present of forty-two acres, but will soon be enlarged to

The breeding of young birds was begun last year, and it is expected that by another year the farm will be in a position to turn out from 4,000 to 8,000 annually. The young birds will be distributed over the state as evenly as possible, and will be given out to approved applicants, in bunches of fifty to one hundred. No applicant will be given any birds until his reliability has been established, and not before he has pledged himself to care for and protect the fledglings previous to becoming established in their new abodes.

The farm has been fitted up with necessary buildings, including superintendent's residence, barn, water tank, etc., besides fifty pens in which to keep the breeding birds.

The pheasants used for breeding purposes were all imported from Europe, and the bird that seems destined to become most popular in the state is the Hungarian pheasant. The wild turkeys used are obtained from Old Mexico, and consist of two species, one a small kind. not much larger than a common grouse, and another of the ordinary size.

The breeding females of the various species under care lay their eggs in the pens quite promiscuously, and the eggs are gathered by the keeper and placed under common hens for hatching. Of these hens the farm has a flock of 225, and they are of the white and Barred Plymouth Rock strains.

After hatching, the chicks are allowed to run with their foster mothers for a period of two months. Then they are taken away and placed in pens by themselves until ready to liberate

Great care has to be exercised in the rearing of these young fowls. At first they are fed on maggots, and the grubs have to be propagated on the farm. They are also fed on milk curds. Brooders with outside runs are used and the brooders are moved every day in order that strict sanitary rules may be observed. birds, both young and old, are given fresh water daily, and plenty of it.

But the California climate is very favorable to bird life, and it is expected that the work of stocking the state will go rapidly on.

Possible a few farmers and gardeners will get the idea that so many wild birds will be a menace to their crops, but when the benefits to be derived by the farmers and fruit growers at large, in the way of insect-pest control, are weighed against the possible damage, it will be found that the latter becomes comparatively insignificant.

This truth has been no clearer shown than by a paper read by W. R. McIntosh of Fresno during the session of a recent fruitgrowers' convention. Among other things, Mr. McIntosh set forth that:

"Nowhere in the material universe do we find a more interesting and beautiful law of balance and harmony than formerly existed in the lives of insects and wild birds. Insects are justly regarded everywhere as the enemies of agriculture. Their destroyers-the birdsmust therefore be the farmers' best friends. So long as nature held undisputed sway our friends kept our enemies in check, and small damage resulted to growing crops, and the husbandman was fairly secure in his calling. "In the destruction of the home of wild birds—the forest—by axe and fire, and the wanton and cruel slaughter of birds in the name of sport, the relations and harmony of nature have been undermined and the balance destroyed. Wild birds are decreasing to an alarming extent in every part of the United States. Injurious insects, as might have been expected, are therefore on the increase in a similar ratio. So striking has been the increase of insect depredations on fruit trees and growing crops of late years that the appeal of the farmers everywhere for relief is constantly on the increase.

"Scientists are searching every part of the known world for insect-destroying parasites, while millions of dollars are being spent yearly in a vain attempt to check the ever-increasing ravages of these enemies of agriculture,

horticulture, viticulture and gardening.

"The menace to successful agriculture is not comprised in insects alone. The rodents and noxious weeds must engage the constant attention of the farmer. Here again the feathered friends of the farmer find ample scope for usefulness to mankind. The hawks, owls, shrikes, and eagles live almost altogether upon the rodent enemies of the farmer, while the seed-eating birds-the sparrows, finches, buntings and grosbeaks—comprise more than one-seventh of the North American species of

"Data gathered by the United States Department of Agriculture show that the annual tax paid to insect depredations exceeds the annual expenditure of the national government, including the pension roll and the maintenance of the army and navy. In one year a single species of insect—the chinch bug—caused a loss of \$60,000,000, and the Hessian fly caused a loss of \$24,000,000, in two states

"The average annual loss to apple-growers from the codling moth is \$20,000,000, and millions of dollars are lost each year from attacks of boll weevil, corn-root worm, cotton worm, web worm, canker worm, bark beetle, plant lice warble fly, and hundreds of other creepers and crawlers, each multiplying after its own kind and at a rate of millions a minute and every one of them hungry from start to finish.

"Practically, we are told, every kind of plant has certain insects that naturally feed upon it and tend to hold it in check, and as man produces more of a certain kind of plant nature produces insects to destroy it. In many nstances the withdrawal of the natural food of some species of insects forces them to take

to another, which may be a cultivated crop.
"It is here that the birds if undisturbed come in to maintain the balance. To kill birds is to allow these insect-pests to increase and destroy the cultivated crops to which they have been turned from their natural food." Already the farm has received more appli-

cations for young birds than can be filled in years, and to show the benefits to be derived from them, in the anticipations of many of the farmers, a single instance may be given: Up in Marin County there is a big ranch company owning and operating 11,000 acres of land in a single body, and it is engaged in dairying, cheesemaking and apple growing. One man is employed to ride over the ranch constantly to see that all is running right.

This company was one of the first applicants at the state bird farm for fledglings, and s good faith in caring for the fowls which should be placed under the special care of the overseer.

It is safe to say that this ranch outfit does not desire these birds as future food for the shotgun, but wishes them as friends and as protectors of its crop interests.-Scientific Am-

GUN ACCIDENTS

Gun accidents may be classed under two headings, unavoidable and avoidable. Obviously, of the former class it is useless to say much , for when a shooter is satisfied as to the reliability of his gun and cartridges, has made himself well acquainted with the flight of shot and its, occasional eccentric behavior, and when shooting, takes every care for the safety of others as well as himself, nothing more can be done. But, unfortunately, many accidents that are said to have been unavoidable cannot rightly be called so, for they frequently happen from ignorance of the gun's condition The use of dangerous over-charges, the spread of shot, the distance at which it will inflict injury, and other conditions are all matters of which a man should have some knowledge be-

fore he begins to shoot, at least in company.

All such accidents must be considered avoidable, for no man has a right to amuse himself to the danger of others without first taking every precaution to diminish that danger as much as possible. It is his duty to know all there is to know about the powers of the gun and charge he uses, and when an accident occurs through him he should by no means be able to offer the excuse, "I didn't know," for, if he can truthfully do so, the accident could have been, and should have been,

I know many men who have been shooting for years, some of them very good shots in-deed, who know nothing about the flight of shot, beyond the fact that from their guns it kills up to a certain distance and occasionally beyond, and to this lack of knowledge not a

few men owe the loss of an eye, or worse. Experiments have been made by firing at a very large area covered with paper, and it has been found that although in most cases the whole charge at 30 yards was distributed within a circle of a few feet, yet in a certain percentage (I think seven) three or four pellets (generally close together) would be found at a distance of from fifteen to twenty feet from the centre of the main charge having these he centre of the main charge, having thus

flown at an angle of about 40 degrees. Two accidents from this eccentric flight of shot have come under my notice-a man standing eight or ten yards out of the line of fire was hit in the knee with three pellets, and on another occasion, in a similar way, a man was hit by two

pellets in the eye. This angular flight is often caused by the pellets having been crushed out of shape as they travel up the barrel, and is the more likely to happen when soft shot is used and a choke bore gun. These pellets that go off at a tangent, fortunately, have not the velocity of the main charge, but, nevertheless, are capable of doing serious injury. When grouse driving, and the birds have kept low between our butts, I have had No. 3 from my neighbor's gun much too near my head to be pleasant; and even at 80 yards this size shot will do very serious damage. It is no uncommon thing to see a man shoot at a pheasant 30ft. above a beater's head, and I have known shot to glance from a branch and come down through a man's hat. A very risky shot is one at ground game when the ground is frozen hard, with anyone at all near the line of fire; and yet hundreds of men take the shot and sometimes regret it. Many shooters when walking turnips or other root crops carry their guns with the barrels resting in the left hand, while the grip is in their right hand and the muzzles pointing to the left. Many a time have I seen them pointed towards the lefthand neighbor. It is far safer to have the rib resting on the right shoulder, from whence the barrels may easily be brought down into the left hand when birds rise. A friend of mine who had shot a great deal in India told me that he frequently had for a companion a young lieutenant, and when they walked in single file this young man in front carried his rifle over his shoulder with the muzzle pointing at my friend's head. The latter persuaded him to change his method and carry it gripped by the right hand round the breech with the muzzle pointing ahead, and even then the lieutenant frequently turned round to speak, at the same time pointing his rifle at my friend's waistbelt. So the latter

Guns are frequently closed after loading by snapping up the barrels, a foolish practice, for it strains the gun, and a dangerous one as well, for when the gun is open the muzzles may be pointing to the ground; but on being raised to close the breech they are pointing at the head of the man in front. The correct way to close a gun is by raising the stock, not the bar-

gave up the lecturing and walked in front of

Many so-called fatal accidents should certainly be brought in as manslaughter, for they happen through rank carelessness. This is especially so amongst farmers. I have on many an occasion watched a farmer pointing and carrying his gun with the trigger-guard resting in the hollow of his left arm and the left hand gripping the heel-plate. As he ran to pick up a ferret the muzzles, being about on a level with his elbow, covered everyone

behind him at intervals. Moreover, they never have their guns attended to until it is absolutely necessary, and many of them have a "pull-off" of the very lightest description. Most of them use guns of the commonest make, and & quently so loose at the breech that one coul easily insert a threepenny bit. For loads they will use powerful nitro powders which occasionally they mix with black; they trke the most risky shots, shooting on the top in the fence or within 4ft, of a friend, and the wonder is not that there are so many acicd its, but that there are not a great many mo The majority of ther, wledge and shear carelessness.-Ejector

ME HAWKING

Whenever the subject of hawking is disassed by those seeking information the questions asked concerning its practice show that much misconception prevails. It is perhaps not surprising that it should be so, seeing that few persons besides owners of hawks and their friends have the opportunity of taking part in the sport. It is said that hawking is dying out or is never practiced now, whereas there are probably twice as many owners of trained hawks in the country as there are masters of otter hounds. But there is this difference: meets of hawks are never advertised like meets of hounds. To court publicity and attract a crowd would be a sure way of spoiling sport. So long as the number of persons engagedsay, in partridge hawking-is confined to the proportions of an ordinary shooting party all may go well; but a crowd becomes unmanageable. Walking about after the hawk has been cast off leads to flushing birds before the dogs have found them and before the hawk is high enough or sufficiently well "placed" to make an effective "stoop." There is the risk, too, of stray cur, perhaps an irrepressible terrier, in as soon as he sees a partridge knocked down, and scaring the hawk away. Again, supposing that the hawk has stooped at a partridge and missed it, and that the latter cannot be found or put up again, the hawk has to be lured down-an easy matter if there are few persons about, but rendered impossible if crowd presses round the falconer anxious to see how it is done. The result may be that, instead of coming down to the lure, the hawk may be scared away to a distance, and an afternoon may perhaps be wasted in trying to get her back. It is for these reasons that hawking meets are never advertised. The nearest ap proach to a public spectacle is when rook hawking takes place in the spring of the year on the wide, open downs of Wiltshire, but the and the Islands Electoral District, between casualties have decreased to about one-third.

sport is gradually being spoilt, or rendered more and more difficult, by the presence and constant movement of the troops quartered on

The objection is sometimes raised by owners or lessees of shooting that game hawking must be a very undesirable form of sport to shooters, since it must have the effect of driving the birds off the ground; but it may be stated as a fact, and as the result of many years' experience, that partridges and grouse are not more frightened by the appearance in the air of a trained falcon than they are at the sight of a wild one. On the appearance of either their natural instinct prompts them to lie closé until the danger is past, or if they are on the wing and a hawk pursues they will fly their fastest for some distance and then drop helter-skelter into the first friendly covert that presents itself. Again, it may be accepted as a fact that gamebirds, whether partridges or grouse are only temporarily frightened by the appearance or pursuit of a hawk, and not permanently scared away, as some people imagine. The next day, perhaps the same evening, they are back on the same ground and ready for another flight; indeed, when all the attendant circumstances are considered, it is reasonable to conclude that birds must be much more frightened when "driven" and shot at than when flushed and flown at by a hawk. The large number of birds disturbed at one time during a drive, the noise, the flash of the guns and, above all, the number of pricked birds that get away and are reminded for some days at least of the ordeal they have gone through must on the whole be far more disquieting to a moor than the finding of a single covey with a brace of good dogs perhaps a dozen times in the course of an afternoon, and the silent though marvelously rapid flight of a hawk resulting in the death of a single bird on each occasion.

It is evident, then, that the prejudice exhibited by owners of shooting in objecting to trained hawks being flown on their ground is unfounded, and a good proof of this lies in the fact that after five years' grouse hawking (between August 12 and October 12) on the same moor, on which a moderate number of grouse were also shot, a splendid stock of birds was left, to the evident astonishment of those who had predicted otherwise. The owner of the moor was quite satisfied, and had no objection

to renew the lease. As to the modus operandi, it would be difficult to find words too eulogistic of the sport; at the same time, it must be understood that it is not one that can be indulged in at a week's notice by anyone who has had no previous experience in managing hawks. Those who think that a trained falcon can be purchased and used with the same ease as a pointer or setter are very much mistaken, as they would discover probably by losing it the first time it was flown. There is more art in training a hawk than there is in breaking a dog, while to attempt to fly an untrained, partly trained, or badly trained hawk is sure to end in disappointment and disaster.

For partridges the best hawks are "Eyess grouse "passage falcons" (i.e., female pererines caught on passage or migration), heavier gamebird requiring the use of the larger and more powerful hawk.

For hares and rabbits the goshawk is employed, and requires a somewhat different method of training and management; but as it will also take partridges and pheasants, besides moorhens and wildfowl where the conditions are favorable, it is the most serviceable hawk for an enclosed country.

The method of training has been often described and discussed in the Field, and has been elucidated in greater detail in the textbooks on the subject. It will be sufficient, then, to state here, as a general principle which underlies the whole art of falconry, that a hawk is flown fasting, and is rewarded for killing or for coming back after an unsuccessful flight. Hence the use of "the lure"-a dead. pigeon at the end of a string or a couple of wings tied together and weighted and garnished with some raw meat. This is shown to the hawk only at feeding time, or when (being on the wing) she is required to return to her owner, or, again, if she is too far down wind

when the dogs have found game. But all these niceties of the sport, together with the art of taming, training, properly feeding, and daily managing hawks, will be best acquired by practice after reading the instructions given by writers of experience on the subject. Failure in various ways at first is only to be expected, but with a little patience, and, above all, gentleness, success will eventually be attained. Few persons, except those who have experienced it, can realize the triumphant feelings of a falconer when flying a hawk which he has tamed and trained himself. -Experto Crede in the Field

GAME REGULATIONS

Cock Pheasants

Cock pheasants may be shot in the Cowichan Electoral District between 1st October and 31st December, both days inclusive. In the Islands Electoral District, except the Municipality of North Saanich, between 1st October and 31st October, both days in-

No pheasant-shooting is allowed in any other part of the Province.

Grouse Grouse of all kinds may be shot on Vancouver Island, the Islands adjacent thereto,

Sportsman's Calendar

SEPTEMBER

Best month for salmon trolling; Cohoes running. Trout-fishing.

September 15—Opening of season on Vancouver Island for shooting grouse, ducks, snipe, and deer.

15th September and 31st December, both days inclusive, with the exception of willow grouse in the Cowichan Electoral District.

Blue and willow grouse in the Richmond, Dewdney, Delta, Chilliwack, and in that portion of the Comox, Electoral Districts on the Mainland, and Islands adjacent thereto, on Texada Island, and in that portion of Kent Municipality situate in Yale Electoral District, between the 15th October and 31st December, both days inclusive.

Of all kinds in the Fernie and Cranbrook Electoral Districts may be shot only during the month of October.

Blue and willow grouse, and ptarmigan, may be shot throughout the remainder of the Mainland between 1st September and 31st December, both days inclusive.

Quail Quail may be shot in the Cowichan, Esquimalt, Saanich, and Islands Electoral Districts, between 1st October and 31st December, both days inclusive.

Prairie Chicken

Prairie Chicken may be shot throughout the Province during the month of October (except in the Electoral Districts of Okanagan, Kamloops, and Yale).

Ducks, Geese and Snipe

Duck of all kinds and snipe may be shot on throughout the Mainland and the Islands ad jacent thereto, between 1st September and 28th February, both days inclusive.

Duc kof all kinds and snipe may be shot on Vancouver Island and the Islands adjacent thereto, and in the Islands Electoral District, between 15th September, 1910, and 28th February, 1911, both days inclusive, and geese at any

Columbian or Coast Deer

Columbian or Coast Deer may be shot on Vancouver Island, the Islands adjacent thereto, and the Islands Electoral District, between September 15 and December 15, both days inclusive. Throughout the remainder of the Province, except the Queen Charlotte Islands, they may be shot between September I and December 15, both days inclusive. Wapiti

Wapiti are not allowed to be shot anywhere the Province.

Sale of Game

Columbia or Coast Deer may be sold on the Mainland only between September 1 and November 15, both days inclusive.

Ducks, Geese and Snipe may be sold throughout the Province during the months of October and November only.

Note.-Nothing contained in above regulations affects Kaien Island, the Yalakom game reserve in the Lillooet District, or the Elk River game reserve in the East Kootenay

A declining birth-rate is a feature common to nearly all European countries, and also to the principal Colonial States.

The death-rate in England and Wales in 1908 was the lowest on record, but so was the birth-rate, with the exception of 1907. Forty-eight cases of homicide, but only one

execution, are recorded in the latest annual report of the Registrar-General for Ireland. Tasmania's excess of births over deaths in 1908 represented nineteen per thousand of the opulation; England and Wales, about tweive;

Scotland, eleven; Ireland, only 5.7. Dividing the population roughly into children, adults, and old people, the proportion of children is decreasing, that of adults increasing

and that of old people stationary. In eighteen years, with the increase in steam vessels and decrease in sailing ships the deaths annually due to wrecks and other

By Walter Prichard Eaton in Th All my life I have suffered fr not my own, but the politen people. So far as I know, nobod cused me of being polite. I s must be, however, for hitherto the politeness of other people w test. But I must protest now, dicate my lack of politeness; in to prove my good manners. For, what I object to in politheir bad manners. It is this I from, as, I suspect, have many

my fellows, to whom life is rea

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and gabble not its goal. As a rul the person the worse are his (or perhaps, her) manners. The lim when the amateur is sunk entirel fessional, and that curious produ ety" is developed, the professiona cannot better illustrate my theme description of the professional he I call her professional because of entertaining for its own sake has parties because she is glad to se cause she is interested in them, give them pleasure. She invites to entertain them is a part of her

hether her work be to get into cial stronghold, to keep that strong assault, or merely to kill time, emy. And, in performing this t has developed a technique which is to the amateur's techniq professional golf-player's style is of the mere bumblepuppy. Her pastonishingly brilliant, flexible, res is aspired to by the lowly and a stage. And yet her manners are t the world. Let us suppose her about to gir She is trimmed down to the fashion

derness (perhaps), and brilliant Cannel coal snaps pleasantly in th room grate, and the lights are grate ed. A guest or two arrive, whom with affable handshake. The man to the fire, warming his back; his v the hostess rapidly, in the way w when they seem to think it better thing than not to speak at all. Bu ess is quite at her ease. Her polite umphant. Presently she turns to the perhaps, an author.

Your new book," she begins, as been waiting all day to ask that what is it going to be about? I lously eager to know."

Already the genial fire has w noted author after his chilling ride car to this mansion of luxury.

Household E

Not alone in America has the rise of living developed a problem of t portance to every one. From a world come reports of the increasing of the human struggle for existence. ly grinding is it in those lands wh

are lowest and opportunities fewest. In Germany, the very name of become a synonym of thrift, an inv by the government of the relation nd expenditures in the average Gern hold, recently completed, has revealed ling fact that, taking the families whi ed accounts as a basis, the wage-earn ning behind his income at the rate lars a year. . The Imperial Statistic which conducted the inquiry, offers tions from this finding, but it is evid simplest mind that such a state of a not continue indefinitely. If condition the families which reported hold good remainder of the nation, either a rea must be effected, or the empire must a nation of paupers.

Full household accounts for one eight hundred and fifty-two families he data for the report of the statistic These families averaged 4.64 individof whom 2.29 were children under fift

The heads of three hundred and e families were skilled industrial worl he annual incomes in such homes \$448.63. In fifty-two families the bro was an unskilled industrial workm earnings of \$410.79 a year. The hig age was in the families of three engi uilding superintendents, \$881.79, and of income ranged from that to laborer

The total income for the eight hun fifty-two households, during the year vestigation lasted, was \$444.561.18, a tal of expenditure was \$453,005.88, deficit of \$8,504.70. Or, averaging in expenditures, each family received it \$521.70, and each spent \$531.69, which debt on New Year's Day, to the ar just \$9.99.

This deficit was not, however. among all the families. On the other was noteworthy that it appeared v Power, while those with the least ma hake both ends meet. But in none much of a margin for reeting the p rainy-day, or illness.

How was the average income spe of the \$521.70, \$242.17, or \$45.55 nearly one-half), went for food. N dollars and a half, or about one-sixth for rent; clothing and washing claime