UNCLE SAM'S NEW RICE FIELDS

RECENT DEVELOPMENTS IN FOOD CROP OF ENORMOUS VALUE

BY FRANK G. CARPENTER.

There are Enough Rice Canals to Reach From Boston to San Francisco.

Loading the Crop on Barges. We now Raise Almost 10,000,000 of these Bags per Annum.

Full Grown Rice one Month Before Reaping.

(Copyright, 1917, by Frank G. Carpenter.)

LAKE CHARLES, La.—Lake Charles is one of the centers of a new industry that can do much toward increasing our food supply in this great war with Germany. It is surrounded by thousands of acres of rice fields, and the territory tributary to it is now growing more than a million sacks of rice every year. Just now the rice is standing high out of the water, like countless emeralds sprouting out of a basin of silver. There are great beds of these emeralds all the way from here to the Mississippi River, and they extend westward and southward along the Gulf of Mexico to below the Brazos River in Texas. They are part of the great rice farm which runs along the flat Louisiana prairies above the Gulf of Mexico and extends far down into Texas.

The gulf strip of rice land is 400 or 500 miles long and from 20 to 50 miles wide, and it is now producing a large part of the crop of the United States. Its area can be greatly extended and can be made to include much of the land running northward from here to Arkansas.

In the Arkansas prairies there are other rice lands which yield even more to the acre than those of the gulf; and within the past five years a big rice industry has sprung up in the Sacramento and San Joaquin Valleys in California. In 1912 the rice of California had not yet come into the market. During that year a strip of 1400 acres was planted near Biggs, in the Sacramento Valley. It succeeded so well that in 1913 6000 acres were planted, and they yielded more than 2000 pounds of rice to the acre. In 1914 the area jumped to 16,000 acres, and last year it covered 69,000 acres. In 1916 the rice crop of California alone was more than 100,000,000 pounds. It was equal to one pound for every man, woman and child in the United States, or enough to supply 12 meals for each of our citizens.

To show that this is not an extravagant estimate, I here give you some figures supplied by the "Manual for Army Cooks," gotten up by the War Department for the troops in the field. It contains directions for the rations to be supplied to the soldiers, and how to cook them. Among the recipes are several for rice. One of these tells how to prepare a meal of boiled rice for 60 men. The ingredients are five pounds of rice and three gallons of water. The recipe reads: "When the water comes to a boil add the rice. When the rice has grown soft enough to be mashed with the fingers pour into a colander and drain well. After that each rice grain should be whole and separate." The dish should, of course, be salted to taste.

Five pounds of rice for 60 men! That means 8½ pounds for 102 men. It means that 85 pounds would furnish a meal for 1000 soldiers. At that rate our new Army of 500,000 could be fed on less than 43,000 pounds of rice, an amount that could easily be stored in a single box car. Four such cars would supply a meal of rice for 2,000,000 men, and the food would form the best nourishment we could supply.

This brings me to the food value of rice. How warm will it keep the soldiers in the trenches and how much work can one do on such a diet? I have been in Manchuria in Winter. It is bitterly cold, and there is nowhere that one needs more food to keep warm. Nevertheless, it was upon a diet of rice and fish that the Japanese soldiers endured all their hardships and succeeded in defeating the meat-fed Cossacks from Russia. Every soldier in the Japanese army had a little lacquered tin case about as big as an old-fashioned cartridge box. This contained a pound or so of raw rice, and that was sufficient to sustain his life and fighting strength for two or three days. The rice could be cooked anywhere that a fire could be made and water obtained. It was used both in the camps and on the march.

As to the value of rice for our people at home, it is equally good. It forms the chief bread of Asia, and about half of the people of the whole world make it their principal food. The Filipino keeps fat upon rice, and the Chinese coolie works 12 hours a day upon his scanty supply. I have had Japanese jinrikisha men carry me over the country at six miles an hour, running all day, on nothing but rice, and I have seen Corean porters carrying loads of 500 pounds on the same food.

Our Department of Agriculture says that, pound for pound, rice ranks higher than corn, wheat or oats in the amount of nutrition contained, and that it has three times as much food energy as the same weight of potatoees and more than twice that of fat beef. It has a higher heat-producing power than rye, barley or wheat, and far more than white bread or beefsteak. Dr. Atwater, one of the chief authorities on the chemistry of foods, says the ideal ration is rice mixed with chicken, beef or veal in a stew.

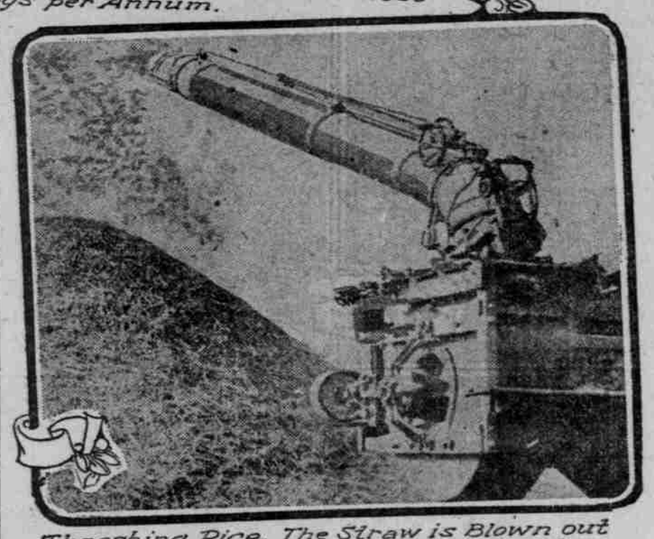
Moreover, rice can easily be digested. It is out of your stomach within an hour after you eat it. It takes two hours to digest oatmeal, three hours to digest potatoes and your stomach has to work four hours on meat.

Rice has gone up in price with other provisions, but it still about the cheapest of foods. I have before me a cookbook prepared by the Southern Pacific Railway, which runs through this rice territory. It has 20 pages of rice recipes and gives much information concerning the cereal as a food. It states that one cup of raw rice will expand in boiling to about four cups of cooked rice, and that this amount in combination with a dish of meat or with beans or peas will make a meal for a family of four. It estimates that one pound of rice is equal to three teacupfuls, and that even though rice costs 10 cents a pound the amount mentioned in the above recipe should not cost more than 3 or 4 cents anywhere in the United States. Even at 4 cents the cost would be only 1 cent per person for this part of the meal.

The fact is, that our people have never appreciated the value of rice. In most parts of the country they use it as a pudding for dessert and not as a cereal or principal article of food. In many sections the people do not know how to cook it; and, on this account the Association of Rice Growers here have been considering the sending of trained cooks to the Army to show how it should be prepared for the soldiers.

As to our rice supply, we are still importing several hundred million pounds every year, but if the people do their duty in extending the rice farms they can increase the crop five or six fold in this region alone, to say nothing of the possibility of new rice lands in California. In the central part of the latter state they have been growing rice at both ends of the Sacramento and San Joaquin valleys. This region is more than 400 miles long and from 20 to 60 miles wide, and a great part of it can be irrigated. The two valleys contain about twice as much land as Massachusetts. They have nine or ten million acres in all, and, as I have said, there are now only 70,000 in rice. The great prairies of Arkansas, which last year produced about half again as much rice as California, have less than 122,000 acres in that crop, and Louisiana and Texas alone could probably supply five or six times their present output. Our total rice yield at present is less than 1,000,000,000 pounds.

Rice cultivation as it is carried on in these lands is the triumph of modern ecoomy and efficiency as far as making and handling the crop are concerned. I have watched them raising rice all over the globe, and everywhere except in the United States the crop is grown almost altogether by human labor. In Asia the grain is first sown in a seed bed, and barefooted and barelegged men and women wade through the fields and set out the plants in the mud with their hands. In Japan and China the rice canals are often kept full by men who lift the water up from the streams in buckets or tight baskets, or in wheels worked by the feet somewhat on the principle of the old-fashioned dog churn. The grain is cut by hand and threshed by pulling it through iron teeth like those of a saw. In Japan the labor needed is such that one man can do little more than take care of an acre of rice. It costs the Japanese something like $50 per acre to raise his crop, or more than a dollar a bushel. In Arkansas they are now raising rice at a little over 25 cents a bushel, or about one-fourth of its cost in Japan.



Threshing Rice. The Straw is Blown out Through a Pipe at the End.

In the United States everything is done by machinery, and in irrigating, planting, harvesting and preparing the grain for the market, the labor item is kept down to the minimum. The holdings are large. In Houston there is one company that controls 30,000 acres, and many of the rice farms of Texas have a thousand acres or more. It is the same in Arkansas and also in California.

In traveling through Southern Louisiana you can see how machinery is doing the work. Rice canals have been built all over the country, which are kept full from the bayous and rivers by pumping stations. These canals are built on the top of the ground by throwing up two embankments from 50 to 100 feet apart. The dirt is taken from the middle. The water is thus carried above the surface of the ground. It is let out through flumes near the top of the banks into the fields or lateral canals, and gravity does the work. These canals are often from 20 to 30 miles long, 100 feet wide, and five or six feet in depth. Including the laterals, there are enough canals already built, if placed end to end, to reach from Boston to San Francisco.

The pumps used are of the most modern make. They are driven by compound Corliss engines, which lift tens of thousands of gallons per hour. In Vermilion Parish, Louisiana, there is a single pumping station which has a total capacity of 324,000,000 gallons in 24 hours, or about as much as the water supply of New York City. The canal which carries that water feeds more than 25,000 acres of land, said to be worth $60 an acre.

The rice fields here are easily made. The country is flat and all that is necessary is to take a ditching plow and throw up a low bank of earth around the field in the shape of a wall. The bank is then tamped on the inside with spade and shovel to keep it from leaking.

In preparing the ground for the crop it is plowed just as for wheat and oats, and the crop is cultivated after much the same manner as grain in the North. On the larger plantations the plowing is done with gangplows, each drawn by a team of four horses or mules, or by steam or gasoline tractors. Five or six inches is the average depth of the furrows. The rice is put in with drills, as in ordinary seeding, and there is none of the back-breaking work of setting out the sprouts in the mud with the hand as in done in Japan.

The water is not let into the fields until after the rice has sprouted and come up so that it partially shades the ground. After that the country seems like a great series of lakes with the green stalks rising above them. The roots of the plants are embedded in the water to a depth of two or three inches and the ground is a great sponge with the water washing the lower parts of the plants. In some sections each acre has to have 15,000 gallons of water every 24 hours to provide for the plant growth and evaporation, and keep the supply where it should be.

Two or three weeks before the crop ripens, which here is in late August, the water is turned off to allow the land to become dry before harvesting. Then the reapers are turned in and the grain is reaped and bound by machinery made for the purpose. A single machine will reap and bind from six to 12 acres per day. The laborers follow the binders and shock up the rice. It remains in the shock about three weeks before threshing.

The harvesting scenes are similar to those of the wheat regions of our Northwestern states. The rice turns yellow and the sheaves look like wheat. The threshing is done in about the same way. The machines go from farm to farm, and a single thresher will handle as much as 2000 acres per day. In the threshing the paddy, or rice grain in the husk, flows forth at the side of the machine, while the straw is blown out through a pipe at one end. The paddy is caught in bags, each of which holds about 200 pounds, and it is in this shape that it is carried on wagons or boats to the warehouse or mill.

Nearly every town in this part of the world has its rice mill. I visited one in Beaumont, Tex., which has a capacity of 25,000,000 pounds of cleaned rice a year. The mill covers an acre or so and it has five floors, through which the rice drops from one process to another on its way to the market.

The machinery is much like that of a flour mill. It takes the paddy as it comes from the fields and tears off the outer husk. Machines remove the coat of bran, which is next to the husk, and grind off what is known as the polish, and others sort the grain and take out the broken pieces and grade them. There is also machinery to give the rice the pearly white gloss which it has in the stores. This gloss is made by coating each grain with glucose, which comes off in washing the rice before cooking. The coating is of no value except to make the rice please the eye of the customer. I give this on the authority of Mr. W. P. McFadden, the president of the company owning the mill. He says that the glucose may have a sanitary value in that it hermetically seals each rice grain and keeps out the germs, but that the statement often made that unpolished rice contains more nutriment and is more healthful than polished rice is not true. They both have the same food value. It may be different with rice which has some of the bran or polish left on or that which is eaten just as it comes from the hulls, as is done in some far-away places.

In this letter I have said nothing of the rice fields of the South Atlantic Coast. It was there that rice was first planted, and until within a very short time ago Nofth Carolina and South Carolina were looked upon as among our chief rice-raising states. Today these two states and Florida, Alabama and Mississippi altogether produce only about 50,000 bags of rice per annum out of a total of almost 10,000,000 bags. Their importance has been swallowed up by this new rice country of Louisiana, Texas and Arkansas, and lastly by California, which in 1916 produced almost half again as much as the states above mentioned.

The first rice of the United States was planted in 1694. In that year a ship from Madagascar was driven by a storm into the harbor of Charleston. The captain had some rough rice on board, and he gave it to one of the farmers, who found it grew well. A few years later Carolina rice was being grown in large quantities and was shipped to other parts of the world. Later the planters began to raise patches of rice along the Mississippi River, and after the Civil War the people commenced to plant rice in the delta. The war had shown them its value as a foodstuff, and it may be that the present war will so increase our consumption of rice that it will become one of the staple foods of the people.

Modern Poultry Culture

Nothing improves the appearance of a poultry house so much as a perfectly white interior. This article tells how to compound whitewashes that will not rub off, and how to apply them with a sprayer. The breeding places of mites and other parasites are quickly devastated by a good insecticide, which is easily made at home. An antiseptic solution should be used to prevent the spread of contagious diseases through the drinking water.

BY FRANK C. HARE.
Poultry Husbandman, Clemson College, South Carolina.

THE intelligent use of tested parasitical exterminators is as essential to successful poultry keeping as intelligent feeding. The reason why so much more importance is attached to the extermination of parasites on poultry than on domestic animals is that the parasites affecting poultry, when unmolested, quickly kill their host, whereas the presence of parasites on animals can do no more than worry and annoy them.

In order to obtain the maximum efficiency of washes and insecticides applied to the walls and fittings of poultry buildings, it is advisable to use dressed or planed lumber, and to fit the boards together as closely as possible. The importance of this advice is apparent, because, if the lumber is rough, and there are many open cracks and crevices in which the parasites can hide and breed, it is extremely difficult, if not impossible, to eradicate them. The simplest way to overcome such a condition is to cover the walls of the house with rosin-sized sheeting, or lightweight plaster board. The interior can then be whitewashed over the paper and an attractive and dependable job results.

Some Whitewashes Do Not Come Off.

Here are two recipes for whitewash mixtures that will dry quickly, adhere strongly to cement, brick or wood, and will not rub off on the clothes. The first is a cement whitewash. Slake one-half bushel of lime with boiling water, adding the water slowly and stirring constantly until a thin paste results. A five-foot piece of three-quarter-inch iron pipe makes a good utensil for stirring. The lime will be lumpy if the water is added freely and the mass is not properly stirred. Now add one-half peck of salt to the lime paste, and stir thoroughly. Then add water to bring the whitewash to the proper consistency. Throw a good handful of Portland cement in each pail of whitewash, and a teaspoonful of ultramarine blue. Add the cement and the blue powder just before the whitewash is to be used, stir in well, otherwise the whitewash will be streaked. The cement makes the whitewash stick, the bluing counteracts the grayish color of the cement and results in a white appearance.

A brilliant whitewash in use by the Federal Government is made as follows: Slake one-half bushel of lime with warm water. Cover it during the process to keep in the steam. Strain the liquid through a fine sieve. Add a peck of salt previously well dissolved in warm water; three pounds of ground rice boiled to a thin paste and stirred in boiling hot; half a pound of powdered Spanish whiting, and a pound of glue that has been dissolved over a slow fire. Add five gallons of hot water to the mixture and stir well. Cover the barrel to protect it from dirt, and let the mixture stand for a few days. This whitewash should be applied hot. Coloring matter, as Spanish brown, yellow ochre, red clay, etc., can be added if desired. The addition of crude carbolic acid, or cresol, is not recommended. Such washes tend to darken with age and become unsightly. If you prefer to add a germicide to the whitewash, you will find a combination of lime and sulphur efficacious. The formula for such a wash appears later.

Liquids for Sprayers Strained.

These whitewashes can be applied by spraying or brush. However, when a sprayer is used, it is well to strain the liquid in order to prevent small particles of grit getting into the valves of the sprayer and interfering with its proper operation. With thin, smooth whitewash no difficulty will be experienced. A thorough application of whitewash is an effective way to eradicate mites. Remove the roosts and nests for painting with an insecticide. Remove the litter. Sweep the walls, and whitewash thoroughly. The interior of every poultry house should be whitewashed once or twice a year for sanitary reasons, even if there are no parasites present.

Insecticides and How to Use Them.

Coal tar is one of the most dependable insecticides. It is a thick, black syrup with an exceedingly penetrating odor. A good louse fumigator can be made by painting the inside lower half of a barrel with coal tar and placing a piece of heavy paper on the bottom. One or more fowls are confined in the barrel and the open end is covered with tar suffocate the lice. The fumigation is watched and the fowls are removed if they appear overcome with the fumes. The lice on the paper are thrown into a pan of kerosene.

The usual way of applying coal tar is to dilute it with kerosene. Add a cupful of cottonseed oil or melted lard to one gallon of kerosene to increase its covering power, then mix in one pint of coal tar. This insecticide can be strongly recommended for painting roosts and roost supports. It remains effective for a month or more, and, after a few applications, the wood is so thoroughly saturated with coal tar that mites will not remain on it. Apply with a brush.

Cresol, a derivative of coal tar, is probably the best base for insecticides that are to be sprayed around the roosts, dropboards and nests to exterminate mites, and under houses and other places for destroying the breeding haunts of fleas. One part of cresol is added to from 20 to 30 parts of water. There are a number of mite paints on the market of similar composition that can be recommended. It is only necessary to dilute any of these concentrated solutions with water and spray the affected parts.

Lime-Sulphur Is Good.

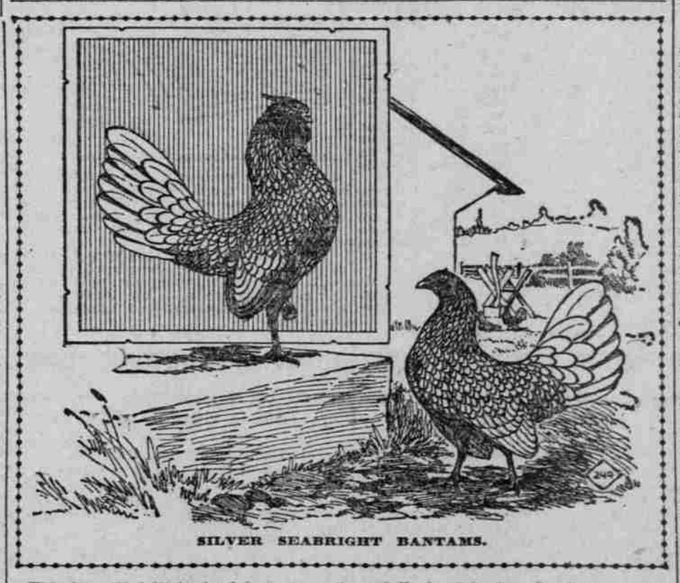
Another reliable insecticide for use inside of poultry houses and brood coops is the lime-sulphur wash advocated by horticulturists for painting the trunks of fruit trees in Winter. It is made in the following way. Shave three pounds of laundry soap and dissolve in three gallons of boiling water. Mix four pounds of sulphur into a paste with water and add it to the soap solution. Slake 20 pounds of lime in hot water, stir well, then mix in it the sulphur-soap solution. Add water to increase the mixture to 25 gallons. Apply with a brush. This makes a snow-white wash that will take the place of regular whitewash. It will not rub off.

The above insecticides are painted or sprayed over the roosting quarters and nests every week in warm weather and once a month in Winter. This treatment will completely exterminate mites, and the louse flies that are sometimes found in the South. To get rid of fleas, either prevent the fowls coming in contact with the breeding ground of the fleas, or else clean out the filthy place, dig up the ground and spray thoroughly with a 2 per cent cresol insecticide. These insecticides should also be regularly applied to brood coops and brooders, and to colony houses, while the developing chicks are using these shelters. Once a week is not too often to spray out these houses for the youngsters. Mites will work greater havoc on young chicks than on mature fowls.

Antiseptic Solution for Drinking Water.

The most popular antiseptic to prevent the spread of contagious diseases like roup, canker or sorehead through the drinking water is potassium permanganate. A few crystals of this bright, purple-colored salt are dissolved in a pint of water to form a dark purple stock solution. A little of this solution is added to the drinking water for mature fowls or chicks when they have colds or diarrhea to color it pink—the exact shade of color being immaterial. This antiseptic not only prevents the infection of healthy birds through the drinking water, but it is beneficial in overcoming the disease.

The normal chick doubles its weight in six days, and under favorable conditions can be made to weigh two and a half pounds in 12 weeks, which is more than 25 times its original weight. Here is proof that the chick is a very highly organized being, and that it must be fed heavily, though judiciously, which is the subject of next week's article.



SILVER SEABRIGHT BANTAMS.

This beautiful little fowl is a monument to the life work of an English fancier, Sir John Seabright. He spent years of breeding in an attempt to produce the handsomely laced plumage of the Laced Polish on a small hen feathered bantam. His efforts were so successful that others became interested in the work and a specialty club for its advancement was formed in 1820. Then began radical changes which pointed toward a positive and identical shape with color of plumage and legs, drooping mugs, erect carriage and hen feathered males, all of which have been jealously guarded to the present time.

This variety of bantams has been carefully bred in America by a number of our most expert fanciers. The quality of the American-bred Seabright is rarely equaled by the highest priced imported specimens, and the interest and rivalry in producing these little beauties is still intense.

They are very small, weighing 20 to 26 ounces each. The hens are excellent layers, good mothers, and it is not unusual to raise two generations in one season.

They have bright red rose combs, narrow, straight, red faces, lobes and wattles, blue legs and beak, and a beautiful silvery white plumage, each feather of which is narrowly edged with a rich velvety black.

SURGEONS GO TO ENGLAND

Vast Number of Bone Operations Swamp Hospitals.

KANSAS CITY, Kan., May 30.—With 19 other leading orthopedic surgeons from as many different American cities, Dr. C. B. Francisco, director of orthopedic surgery at Mercy Hospital, left the other night for England.

Dr. Francisco and the 19 others go as part of America's contribution to the cause of the allies. Their work will be to assist the hard-pressed English surgeons in saving wounded soldiers from becoming cripples.

So many of the wounds inflicted by modern warfare are chiefly bone injuries that the abilities of the English orthopedic surgeons have been taxed to the utmost. Recently a call was sent to America for 20 orthopedists to assist in the war hospitals of London and Liverpool.

Several hundred men who could qualify for the position were listed in the medical division of the Officers' Reserve Corps. From them the 20 were chosen.

At Mercy Hospital Dr. Francisco has straightened the deformed limbs of hundreds of child victims of poverty and neglect. In England the work will be the same except that the patients will be men and victims of war instead of social ignorance.

Dr. Francisco said he did not know the length of time the services of the 20 surgeons would be required, but imagined it might be for the duration of the war.

"We are acting under Government orders," he said, "and only the future can reveal how long our services will be required. Particularly will this be true in case the war continues long enough to make it necessary for the United States to send a large expeditionary force abroad."

TAN BARK WILL BE CUT

Woodsmen to Make as Much as $9 a Day This Year.

WARREN, Pa., May 30.—Within two weeks hundreds of men will be at work in the forests of Warren, McKean, Forest and Elk counties, where thousands of cords of chemical wood and bark will be cut this Summer. The bark peeling season has arrived.

This Summer the men are offered $3 a cord, which will enable many of them to make as high as $9 a day. This is more than double the amount they could make five years ago.

Leather manufacturers, who use the bark for tanning, are also paying the highest price in history. Only a few years ago they could buy hemlock bark for from $5 to $6 a cord; but today they are compelled to pay from $10.50 to $12. The price of chemical wood also has advanced. The value of the hemlock bark and chemical wood which will be cut in the surrounding forests this Summer will be in excess of $1,000,000.

Old Deed of Sale Uncovered.

MILES CITY, Mont., May 30.—The other day, when lambs were selling at $20 a hundred weight and more on several markets, workmen tearing down an old house here came across a bill of sale in which, "in consideration of $539," there were transferred a half interest in a ranch, an unlisted number of cattle, four horses, a quantity of chattels, 124 ewes and "240 lambs." The document was dated February 7, 1888. H. A. Smith, its maker, still is a resident of this city. At the figures named, the lambs would bring $2750 or more now.

Probated Girls Need Farm Home.

NEW YORK, May 30.—A farm colony is necessary, but the need for a house of detention for young women who have never been convicted of crime, for witnesses and for women who may be discharged or released on suspended sentence is more imperative. This is the assertion in the eighth annual report of the New York Probation and Protective Association, made public recently. The report states that for the first time girls were given farm life on Hillcrest Farm, Connecticut. This was made possible by the generosity of Mrs. Herbert Scoville.

MARINES GAIN RECRUITS

Prospects of Immediate Service Cause Jump in Enlistments.

WASHINGTON, May 30.—An immediate jump in volunteer enlistments in the United States Marine Corps is expected by officials of the corps as a result of the sending of a regiment of "soldiers of the sea" to France with the first expedition and the assurance that further contingents will be sent as rapidly as transportation can be procured.

Many young men who had previously not wanted to enlist with a probability of being kept in this country an indefinite time and perhaps never getting to the firing line will, it is believed, now enter their country's service as "soldiers and sailors, too."

The Marine Corps expects to reach its full war strength of 30,000 men by the Fourth of July.

Convicts to Farm 1000 Acres.

SANTA FE, N. M., May 30.—Governor Lindsey, Land Commissioner Robert P. Ervein and Warden Thomas Hughes, of the state penitentiary, recently selected about 1000 acres of land in Northeastern Torrance County to be farmed by convicts from the state institution this Summer and the work of preparation for cultivation already is under way. The convicts planted every available foot of the penitentiary farm at Arroyo Hondo, near here, early this Spring.

WHY SOCIETY WOMEN WASH THEIR OWN HAIR

They do, not because it is a fad, but because they wish to obtain the greatest possible hair beauty and be sure they are not using anything harmful. They have found that in washing the hair it is never wise to use a makeshift, but is always advisable to use a preparation made for shampooing only. Many of our friends say they get the best results from a simple homemade canthrox mixture. You can use this at a cost of about 3 cents a shampoo by getting some canthrox from your druggist and dissolving a teaspoonful in a cup of hot water. This makes enough shampoo liquid to apply to all the hair instead of just the top of the head, as with most preparations. Dandruff, excess oil and dirt are dissolved and entirely disappear in the rinsing water. Your hair will be so fluffy that it will look much heavier than it is. Its luster and softness will also delight you.—Adv.