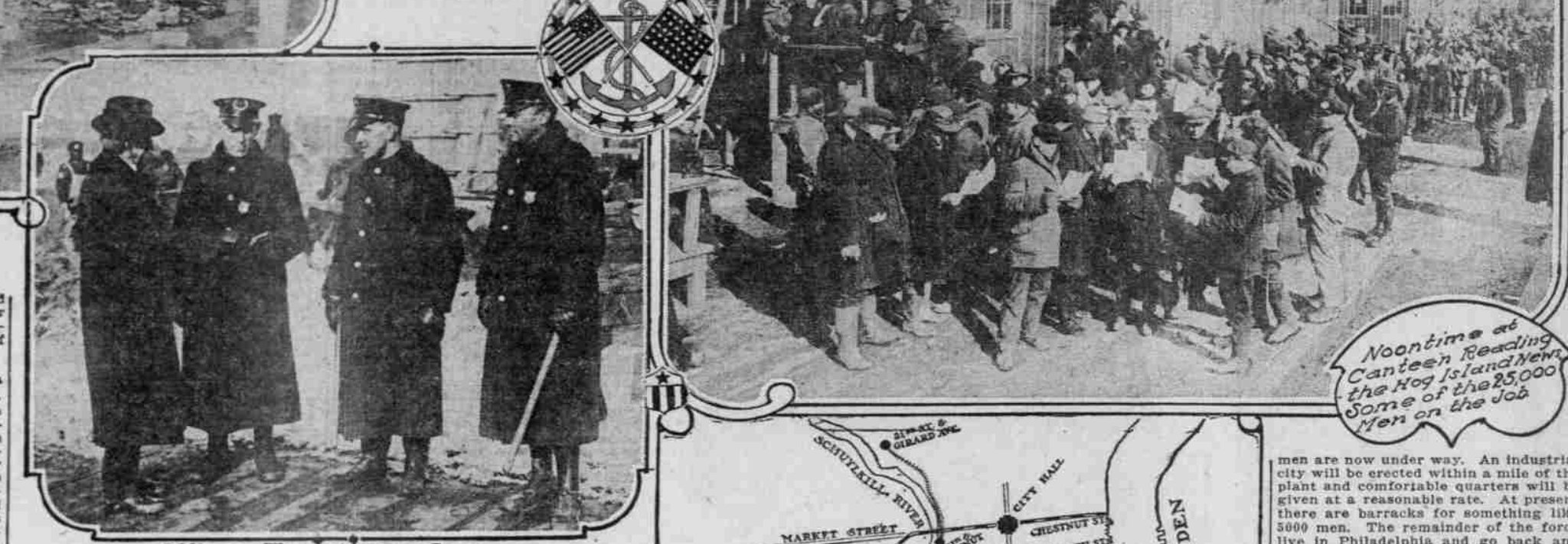


HOG ISLAND-UNCLE SAM'S BIGGEST SHIPYARD

Frank G. Carpenter
Describes Life
and Work at Great
Plant.



Officers Examining a Pass.

Noontime at
Canteen Reading
the Hog Island News
Some of the 25,000
Men on the Job

Laying Keel
Blocks on Which
Uncle Sam's
Noah's Ark is
to Be Built.

Come with me to Hog Island, and see the biggest shipbuilding operation in Uncle Sam's mighty shipbuilding program. Fifteen per cent of all the steel merchant ships now contracted for by the Emergency Fleet Corporation will be constructed there. Many of the ways are rapidly approaching completion; the keels of the first vessels have been laid, and the parts of which they are to be fabricated have begun to flow here from the different factories all over the country. A few months ago the place where the shipyards now are was covered with grass as high as your waist, and in places with bushes as high as your head. It was deserted and desolate. Six miles, as the crow flies, from the great bronze statue of William Penn, on the top of the City Hall in Philadelphia, it was as lonely as the valley of the Jordan, near the Dead Sea—a dismal island of desolation in a great ocean of business activity. There were shipyards to the north of it, shipyards to the south of it, and ships were being built on both sides of the Delaware for miles up and down stream. Not far away was the Philadelphia Navy-yard, and from there now and then flew the airplanes of the Aviation School across the way, frightening the birds which nested in the rushes.

Today Hog Island is one of the liveliest labor centers of our live war activities. Four months ago it was impossible to get to it in a motor car without being stuck in the mud. Today there is a good auto road, an electric trolley, and a street railway that connect it with Philadelphia and all parts of the country. There are ferry boats which go there every few hours and motor buses by which you can reach it within half an hour. That part of the island which skirts the Delaware river, not far from where the Schuylkill flows in, has been almost lifted out of the swamp. It is cut up by wide roads of thick plank, hundreds of two-story buildings have gone up, and from 12,000 to 15,000 men are employed there building ships. The shipyards cover hundreds of acres. The tract which the Government has leased is equal to nine square miles. This has been surrounded by a tight fence of pine boards about eight feet in height. The boards run up and down a framework of barbed wire sloping in from the top. Barbed wires are also nailed along the outside of the fence, making it impossible to climb.

My first visit to Hog Island was in the heart of the winter. The country had just had a great blizzard. There was 21 inches of snow on the ground, and in front of the shipyards the ice reached far out into the Delaware. Near the island it was four or five feet in thickness. Nevertheless the work was going on everywhere. There was more than 15,000 men on the job. Motor trucks of five tons and upward were hauling great loads of lumber, huge iron pipes and machinery of one kind or another. Men clad in rubber boots, and when the work was cutting holes in the ice on the edge of the Delaware and driving piles through into the river, the snow on the edge of the river they were sawing the piles to the right lengths with crosscut saws, and a little farther over the river they were cutting blocks of the ways. Hundreds of carpenters were working; a large gang on each building, and the two-story structures were rising like magic. The conditions prevailing today, although the work is much farther advanced. Everything is being pushed to the utmost; the officials tell me they are up to date with their program and that they will complete their big order on time.

Before I describe our visit to the shipyards I want to give you some idea of the job that Uncle Sam has here under way. It was something of a chore to build Noah's ark, but more than half of the vessels to be constructed at Hog Island are of just the same length and almost the same depth, although not so wide. Taking the cubit of the Bible as a foot and a half, the usual estimate, it was just 450 feet long, 75 feet wide and 45 feet deep. The order of ships for the Hog Island yard, including the steel steamers, each of which is to be 450 feet long, 58 feet wide and about 40 feet deep. In addition to this, 50 more steamers are to be made, each of which is 50 feet shorter. The big ships have just about half the tonnage that has usually been estimated for the keel of the vessel, its greater capacity coming from its increased width and depth. Noah's ark was a three-decker with many rooms in it. It was made ofopher wood and pitched with-out and within. Gopher wood has often been compared to our cypress, which is to be largely used in emergency ships of the emergency fleet program.

The Hog Island vessels are to be of steel throughout, and the parts of which they are made are more in number than the animals Noah was able to crowd into the ark. Each vessel will have about 25,000 parts, and these are to be made in 100 different factories throughout the United States and sent here to be assembled, each part being fitted into just the right place in the ship. Much of the work of fabricating or making the parts will be done by the large bridge-making companies and structural steel plants. They will make the plates, manufacture the rivets and punch the holes. The whole order will require about 150,000 tons of steel thus worked into parts; and when the work is well under way it will take something like 800 cars daily to bring in the material. The daily train required for that purpose, if the cars were all joined together, would be four miles in length. Inside the yard itself there are now more than 60 miles of railroad tracks, and the rolling stock includes 25 locomotives, 500 freight cars and 50 passenger coaches. The job will require electrical equipment including 600 motors, and the current used will be that equal to the demands of a city of a quarter of a million people, or, for instance, Providence, R. I. Much of the

pneumatic machinery is to be operated by compressed air. The compressed air plant is the largest in the world, excepting only those in the gold mines of the Rand in South Africa.

We make our way from Philadelphia out to Hog Island in an automobile, winding back and forth through the long lines of trucks carrying materials. We are stopped at the gates by uniformed guards, and the automobile is searched. The men look under the hood of the machine and make us lift the seats to show that no dynamite or other explosive is concealed there. The Government already has between \$20,000,000 and \$20,000,000 invested in the Hog Island plant, and a bomb or a fire could do endless damage. It is for this reason that the big fence, with barbed wire guards, was built, and for the same reason no one is admitted to the yards without a pass, and every vehicle that goes in is carefully examined.

In moving about through the yards one must keep his pass in his hand. There are 600 guards inside the plant, including mounted guards who ride back and forth. There are men on top of some of the buildings on the lookout for fires, and the greatest of precautions are taken. It seemed to me that I showed my pass to every one of the 600 guards. I was stopped again and again, and that notwithstanding I was accompanied by one of the highest officials of the company. When I entered the administration building, where the plans and other papers are kept, I had to pass two soldiers who had guns at their sides, and down among the shipways on the banks of the Delaware river three just officers with clubs in their hands held me up while they looked over my passport.

One of the best views of the Hog Island activities can be had from the tower of the administration building. Let us climb to the top and look over the shipyards. We are 40 feet above what four months ago was one vast wilderness, with here and there a little farm growing out of the bushes and grass. Now we can see buildings going up on all sides of us, almost as far as the eye can reach. Right under our feet are all the engineers' offices which have just been completed, and beyond running back from the plank roads, are frame buildings of two stories, enough to make a good sized city. There are acres of barracks for housing the men, great stables for hundreds of horses and mess halls where 20,000 men are fed at a time. Very near is the Y. M. C. A., which, when in full swing, will be the largest industrial Y. M. C. A. of the world. It will have a moving picture theater, a large auditorium, a poolroom, with 12 tables, and halls for bowling, boxing and wrestling. A great deal of welfare work has already been started. The laborers who come in from everywhere are constantly changing, and already more than 100,000 men have had a home in the work. On the day of last month 25,000 men were on the job.

Looking from the top of the administration building you see the Post-office and fire station. The fire department is equal to that of a large city, with chemical engines and all modern appliances. Running here and there through the works are the steel main transmission power lines, and you see steam trains flying over the railroads, which cut through the yards. Beyond the buildings, skirting the Delaware river, are many tall derricks. They make you think of an oil field. They are the derricks which hoist the great tree trunks down into the earth to give the sound foundation needed for the shipways. The ways run along the river, and the whole distance is marked out by the derricks. The length is almost two miles, and it includes the 50 ways, when the plants are all going, which will enable us to make that many ships at one time.

Now take your glass and look at the great yards below us. The vast tract is spotted with building supplies. There are thousands of piles which have come here from the Pacific Coast forests, and great beams and planks which have been brought here from the South. In all, more than 75,000,000 feet of lumber will be required for the construction and over 10,000,000 feet will be used in the shipways themselves. There are 20 acres of buildings now under roof.

It is interesting to look at the network of railroads. In the yards themselves there are 45 miles of track, or more than enough if stretched out one line to reach from Washington to Baltimore. The iron rails wind in and out of what at first seems to be a maze like that of Roman roads, and that the whole connects with the trunk lines coming in from all parts of the country, and with the shipways on the Delaware river. That will be one of the largest railroad yards in the United States. The lumber and steel in the great variety of parts used for the ships come in from the factories where they are fabricated, and are here classified and the cars sent right to the shipyard where they are needed. There is no trouble handling supplies. The rivets from the factories of Pittsburgh are not unloaded until they are put in the hands of the workmen who are to pound them into the ships. This is so of bolts, plates and all sorts of materials. The cars go right to the ways, and the steel is not touched by hand from the time it leaves the fabricating factories until it goes into the vessel.

But come with me to the shipways. That is where the chief work is now going on, and it will increase steadily throughout the year. The ways extend along the Delaware river for more than a mile. They slope gently up from the water and each consists of a long row of blocks, laid one upon another, where the keel of the ship is to rest. Most of the ways are now completed, and some have vessels rising

upon them. Others are still in process of construction, and we can see the enormous work required to build a plant of this kind. In the first place the shipways must have a solid foundation. The weight of each vessel is some thousands of tons, and it must rest as firmly as the house on the rock. The foundation is made by driving down piles of great trunks of trees, 30 or more feet into the earth. Think of building steel steamers of 3000 tons in the tree tops! That is what they are doing right here on the Delaware. They have already sunk a great forest of 55,000 trees which once reached to the height of a seven or eight-story building down into this island. They upon them have constructed these ways for building the ships.

Each way is considerably wider than the ship which is to rise up within it. The beginning to rise. There is a scaffolding on each side, and the skeletons of the great vessels are now to be seen. The great locomotive cranes are in operation and the riveters are fastening the plates to the framework.

I spent some time watching the construction of the ways. The great pile drivers force the tree trunks far down into the earth, until they look like the stumps of a clearing. Then men cut off the stumps close to the ground. They use cross-cut saws and some stand up to their knees in the water. They wear rubber boots that reach to the thighs and work with bare feet. In the summer, rather than winter.

In one place I saw them driving piles made of concrete. In this case a steel finger almost as large as the pile forces its skin of steel far down into the

earth. It is then withdrawn, and the concrete mixture is poured into the skin and hardens to stone. Some piles of this kind are sunk to a depth of 70-odd feet, and within a few hours after driving are as solid as the wooden tree trunks under the shipways adjoining.

During my trip through the yards I studied the workmen. I looked about for loafers and slackers, but found no one who did not seem to be doing his bit with all the muscle and brains he possessed. I heard no dissatisfaction expressed and I like to think that there is patriotism mixed with the work. The men seemed impressed with the fact that they are helping in winning the war, and this idea is stimulated by signs in red, white and blue, which are put up everywhere. You find them on the stumps near the shipways, on the walls of the barracks and in the mess-houses. I have some of the signs before me and will give a few samples:

"What we do over here is going to help a lot over there." "Good shipbuilders are the best kind of good Americans. Do your part." "The sooner we finish these ships the sooner the war will be ended." "Ship! Ship! Ship! Are the only means of getting supplies over there quick." The foremen of the works are chiefly Americans, but the rank and file are largely made up of Greeks and Italians, and they are, as a rule, more brawny and better looking than the men you will find on an ordinary job. Great care is taken in hiring the labor, for it is important that no disease or anything infectious be brought into the yards. Every man must go through a careful examination, physical and otherwise, before he is put to work. He is made to undress to the skin, and given a bath, a haircut and a shave. He then goes to the doctor, who examines him thoroughly. In the meantime his clothes have been washed and put

through a rapid-drying process so quickly that by the time he is through they are given back to him, sterilized and perfectly clean. The wages are high, with extra pay for overtime. The new arrangements for housing

men are now under way. An industrial city will be erected within a mile of the plant and comfortable quarters will be given at a reasonable rate. At present there are barracks for something like 3000 men. The remainder of the force live in Philadelphia and go back and forth on the ferries, motor buses, electric road or trains.

The army of laborers increases and decreases in size, according to the weather and other conditions. I have before me the record of a day when 25,000 men were employed. At that time there were more than 3200 carpenters, 2000 pile-drivers, 700 electricians and about 400 pipefitters and plumbers. There were about 11,900 common laborers.

I had my lunch in one of the mess-halls where these thousands of men are fed every day, and then went into the butcher shop and bakery connected with the establishment, and inspected the kitchen, where a dozen cooks in white caps and aprons were working at long ranges and great steam cookers. The mess-hall is separated from the kitchen by a counter, and the men, having bought their meal tickets outside, come in single file. As each passes the counter he is given a tray much like the black tin water used in the restaurants. This tray contains his full meal, which he carries with him to one of the tables and eats at his leisure. There is no delay. The meals are handed out so rapidly that one man is served every five seconds and several thousand men are eating at one time. I examined a meal on a tray. It consisted of a bowl of soup from which the steam arose, a generous portion of fish, two meaty potatoes, stewed corn and pudding. There were also bread, butter and crackers. It looked appetizing and the price was 30 cents.

A man can live here for \$1 per day. This means 30 cents each for four meals and 10 cents per night for a bed in the barracks. If he wants to save on his meals he can make the cost even less. There are also bread and lunch counters where one can buy sandwiches or other snacks, such as a herring and crackers, and cheese. These are sold at country grocery store prices.

If it is desired to continue the moist mash throughout the life of the chick, the allowance of dry mash should be gradually reduced and in time discontinued, while the allowance of moist mash is increased. Either method should be adopted, and the change made at this time.

The growing feed grain mixture should be gradually displaced at this time by a mixture of equal parts of wheat and oats. From then on, if the flock is allowed range, they will practically take care of themselves.

At six weeks of age the number of feedings should be reduced to four a day—two each of mash and grain feed.

The thing of greatest importance in feeding the newly-hatched chicks is to feed on small quantities. The newly-hatched chick, like any other new-born creature, has a delicate digestive organ, which must not be overtaxed by heavy foods, nor by excessive quantities. Therefore, the endeavor of the poultryman must be to feed easily digested foods at frequent intervals.

Should it be desired to use the dry-mash method of feeding, the one feeding of moist mash should gradually be reduced in quantity, and in time entirely eliminated, thus inducing the chicks to eat entirely of the dry mash.

After the first week a daily supply of green feed is absolutely necessary to the health of the flock. Lettuce, mangels and grass clippings are excellent for this purpose. Fresh grass clippings are first choice, followed by mangels. Grass clippings should never be allowed very young chicks unless finely cut, since long pieces of tough grass when swallowed by baby chicks are likely to mat in the crop, causing digestive disorders. A better way of feeding grass is to place a fresh sod in the pen, allowing the flock to pick at it at will.

In feeding mangels to chicks small roots should be selected, cut into pieces, so that the chicks can pick at them. It is frequently necessary to scrape the mangels with a knife for the first few days, after which the chicks are able to handle the roots without help, since most chicks are very fond of mangels.

Cabbage cannot be recommended as a green feed for young chicks, because it is likely to cause bowel disorders. For very young chicks sprouted oats are not to be recommended. Drinking water should be supplied from the first. The first few days it is well to temper the water somewhat, but afterward cold water should be supplied. Milk for the chicks to drink is excellent, but not necessary. Water should also be supplied when milk is allowed the chicks.

Hoppers of chick-size oyster shell, grit and charcoal may be placed before the chicks after they are two weeks old, but not before that time, since very young chicks are just as likely to fill up on these indigestible materials as on feed. However, all of the first feed should contain a little grit.

Feeding the Third Week. The method of feeding given above should be continued for the first three weeks. Then the bread-crumbs mixture should be gradually displaced by the

Modern Poultry Culture

BY J. RAYMOND KESSLER, Practical Poultryman.

DURING the first week in particular the chicks should never be allowed all they will eat. Such a practice is certain to bring about bowel disorders. The importance of how soon the chicks should be fed has probably been overestimated. One of the best plans to follow in this regard is to allow the first feed as soon as the chicks show a desire for it. Newly-hatched chicks, when first taken to the brooder, usually show a desire to sleep, at which time no feed is needed. As soon as they become restive and start pecking at things, or at each other, it is time to supply a little easily digested feed. One of the best feeds is a mixture of

equal parts stale bread crumbs and oatmeal mixed with hard-boiled egg, using about six parts of the bread-crumbs mixture to one ground egg, shell included. The egg and crumbs should be thoroughly mixed, and a little chick-size grit added. The egg will make the mixture sufficiently moist.

This mixture should be fed exclusively for the first three days in small amounts, five times a day. Large sheets of heavy brown paper are useful to keep the grain from being scattered in light litter to make the chicks exert energy for their feed, whereas the same feed every day is likely to surfeit them. Many poultrymen have found keeping dry wheat or barley in the brooder at the time very beneficial to growth and an excellent preventive of constipation, so frequently found in young chicks.

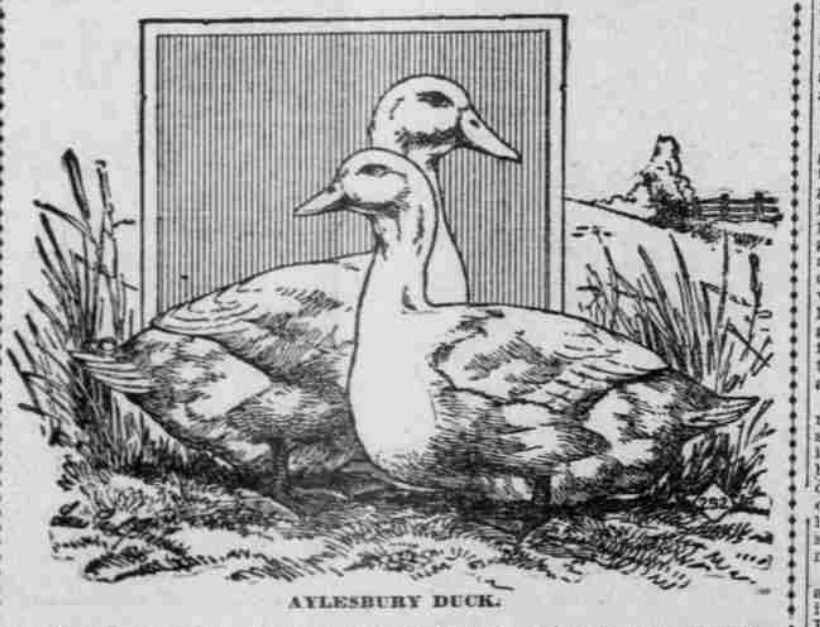
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AYLESBURY DUCK.

The Aylesbury stands at the head of the domestic races of ducks bred in England, probably because of its rapid growth and early maturity. It was the first white domestic duck bred, formerly known as the White English, and in the early part of the last century it became known as the Aylesbury.

It originated in the vale of Aylesbury, and this district bears the same relation to London as does Long Island to the markets of New York City. Aylesbury ducks have an almost horizontal carriage; males weigh nine pounds and females eight pounds. The plumage is white, free from tints in undercolor. The bill is large and broad and of pale flesh color with no trace of yellow. The skin is light pink, fading dead white after a few days in cold storage.

following mash mixture: 400 lbs. corn meal, 200 lbs. middlings, 200 lbs. wheat bran, 100 lbs. linseed meal, 100 lbs. ground oats (hulls sifted out), 100 lbs. alfalfa meal and 200 lbs. beef scraps. This mash should be moistened with milk or water and fed twice a day, allowing grain at the other three feedings.

When the above change in feeding is made, it is usually necessary to use a larger sized grain mixture instead of the chick feed. What is known as a growing feed mixture is good to introduce at this time. When dry wheaten bran has been allowed it is well to replace it with hoppers of dry mash, using the same mash as is being fed at this time. When dry wheaten bran has been allowed it is well to replace it with hoppers of dry mash, using the same mash as is being fed at this time. When dry wheaten bran has been allowed it is well to replace it with hoppers of dry mash, using the same mash as is being fed at this time.

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ROOF GARDENS FORBIDDEN

Los Angeles Prisoners Denied Fresh Air Liberties.

LOS ANGELES, March 30.—Roof gardens for male and female prisoners of the County Jail were relegated to the limbo of idealistic impossibilities by the sheriff's office, in answer to suggestions regarding jail administration made to the efficiency commission. A committee consisting of Mrs. K. C. Gartz, of Altadena; Mrs. W. E. Peepers, of Alhambra; and Mrs. Clara A. Packard, of Pasadena, alleged that the conditions at the jail, poor quality of food, unnecessary confinement of prisoners and similar evils.

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