

"Cow Capacity" Key to Success

"Cow Capacity" is what causes a cow getting ten pounds of grain a day to produce 35 pounds of milk, and another cow, under the same conditions and on exactly the same kind and amount of feed, to give only 20 pounds of milk, says the Larrow Institute of Animal Economics.

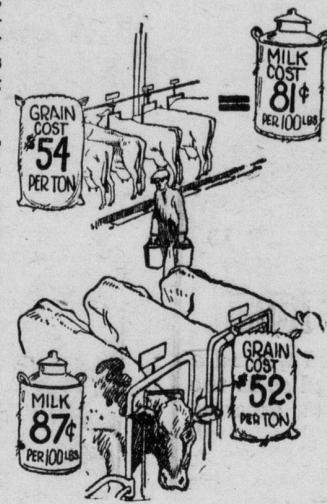
"Producing milk is not much different than producing shoes or any other commodity except that we have to deal with a living animal with a milk-producing ability that is more or less inherited," according to the Institute. "One shoemaker can turn out a pair of shoes to sell at five dollars while another cannot afford to sell them for less than seven dollars. There is a big difference in the production costs. Similar differences hold true in dairying. The breed of the animals, their feed, the quality of the animals, and their management, all have their effect on the cost of their milk production. A good dairyman may be able to produce milk at a price that would financially cripple another dairyman.

"Feed is the largest single item in milk production. It takes about the same amount of feed to keep a high

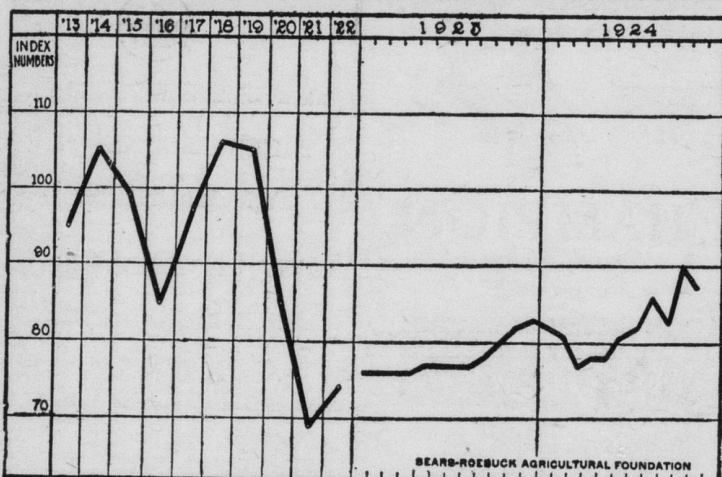
producing dairy cow alive as it does to maintain a cow of limited production. A cow cannot turn out nutrients in the form of milk which she does not receive in her feed, and the big difference in the production of milk from individual cows lies in the kind of feed they are fed and the amount they are able to consume and convert into milk. A heavy producing cow can utilize a large amount of feed, while the small producer wastes it.

It is this cow capacity that makes the large producer a more economical producer than the low producer.

"Many dairymen are misled by a false economy into buying 'cheap' feed for their herds," according to the Institute. "In most instances the cheap feed is not really worth as much at its price as another feed at a higher price. A group of cows on feed selling at \$54 a ton, averaged \$1 cents worth of grain for every 100 pounds of milk produced. A similar herd on \$52 feed averaged 87 cents of feed for each hundred pounds of milk. This means that on the basis of milk produced on the higher priced feed, the \$52 feed was really worth only \$48.40 a ton, or \$3.60 less than the price asked for it."



Buying Power of the Farmer



The purchasing power of farm commodities continues to rise. Latest estimates show an average of 4.3 points higher for the first eleven months of this year than during the corresponding months of 1923, according to a report of the Sears-Roebuck Agricultural Foundation, based on the new index numbers of farm prices prepared by the United States Department of Agriculture.

Farm prices show a combined value of 134 on November 1, 1924, as compared with 100 in 1913. This combined index number includes 80 farm commodities which represent more than 90 per cent of the value of products sold by farms, the Foundation points out. Using August, 1906, to July, 1914, as 100, the purchasing power of these products stood at 87 on November 1 of this year. In 1918 the purchasing power was 106, decreasing to 69 in 1921. In 1922 it rose to 74 and by 1923 the average stood at 78. During the first eleven months of this year the purchasing power of farm commodities averaged 82.3 as compared with 77.5 in the same period a year ago.

Advances in grain, which averages about 22 per cent of the total value of farm products sold, and in price of meat animals, which averages 27 per cent, have been the largest factors in the increase of the farmer's purchasing power since 1921. The grain farmer received during the early part of this year prices about 10 per cent above the pre-war five-year average. This had risen to 30 per cent increase by July. At the same time the general price level of commodities the farmer has to buy ranges 30 to 80 per cent above the 1913 level.

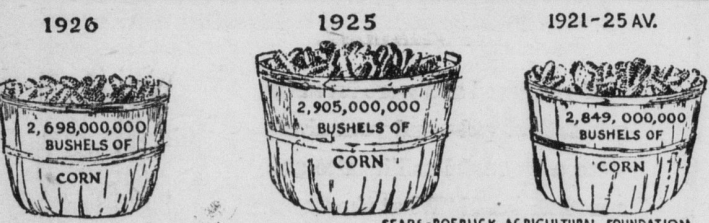
Less Hay on Cattle Menu



THERE will be less hay on the livestock menu this year, due to the short hay crop, says the Sears-Roebuck Agricultural Foundation. Farmers will produce only 78,000,000 tons, because of the unfavorable weather. Last year they produced 87,000,000 tons, and the five-year average crop is 90,000,000 tons, the Foundation points out. It is true that there are fewer live stock to consume this year's

hay crop. Most of the crop is eaten by cattle. Horses and sheep also require large quantities. This year farmers devoted 59,080,000 acres to tame hay crops, such as alfalfa, clover, timothy and mixed crops. This is a slight reduction from last year's acreage. This is expected to yield 1.34 tons per acre, a smaller yield than usual.

Hogs Won't Have to Reduce



HOGS won't have to go on a reducing diet. They will have plenty of corn to eat, in spite of a prospective short crop, which will amount to about 2,698,000,000 bushels this year, according to the Sears-Roebuck Agricultural Foundation. Last year the crop was 2,905,000,000 bushels, considerably larger than the five-year average crop of 2,849,000,000 bushels. This year's crop was grown on 101,074,000 acres and is rated to yield 26.7 bushels per acre. More than 80 per cent of the corn crop is fed to live stock, and hogs consume more

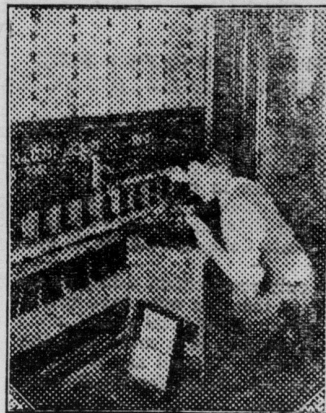
than 40 per cent of the crop. This year hogs have been scarce and have not eaten as much from last year's crop as normally. The corn year begins November 1. A year ago the carry-over from 1924 was only 61,000,000 bushels, but because of the shortage of hogs and other live stock the carry-over on November 1 from the 1925 crop will be more than 500,000,000 bushels. This, with the present crop, will be ample to meet all needs, the Foundation estimates, so the hogs and other live stock will not have to go hungry.

CARE NECESSARY FOR CENTRAL OFFICE WORK

Hundreds of Switches and Relays Involved in Single Telephone Call

To establish a telephone connection between two subscribers in a manually operated telephone central office may require the opening and closing of a hundred and fifty electric switches, and in certain machine switching offices, nearly two thousand, says a recent article in the Bell Telephone Quarterly.

These switches are operated for the most part by relays that are arranged in racks in the central offices and that look like condiment containers. In a moderately-sized office there are thousands of these pieces of apparatus that must work quickly and reliably. Periodic tests are made in order to discover and repair faulty relays in order to prevent an interruption of telephone service.



Testing Relays

While the maintenance of this apparatus is a tremendous task, its design and installation require careful and painstaking effort as well as expert workmanship. Each soldered joint that is made, connecting this apparatus with the remainder of the central office equipment must be a good contact. It must also be completed in such a manner that it does not contain a germ of trouble for the future by working loose. The importance of this is apparent to anyone who has built a radio set. The sputtering sounds made by a loose connection in a radio set would be equally as bad on a telephone.

Before beginning the manufacture of these relays which are required by hundreds of thousands, the samples must be put through a series of tests in the laboratories where they are subjected in a few months to as many operations as they would normally be called upon to perform in many years of service. Weak points in design and structure can be thus detected and corrected before they are manufactured on a large scale.

To a casual visitor to a central office these relays with their neatly soldered connections, are so numerous that it seems impossible to pick out any particular one, yet experienced central office men with uncanny skill can go directly to any one that is operating in a faulty manner. Among the functions performed by these relays are the flashing of a signal light before the operator when the receiver is taken off the hook, the starting of a telephone call through the equipment, the depositing of coins in pay station telephones, the ringing of subscriber's telephone bells and the establishment of a host of connections through the central office equipment itself.

VACUUM TUBES USED ON LONG DISTANCE

Telephone Circuits Require Tubes on Long Lines for Amplifying Voice Sounds

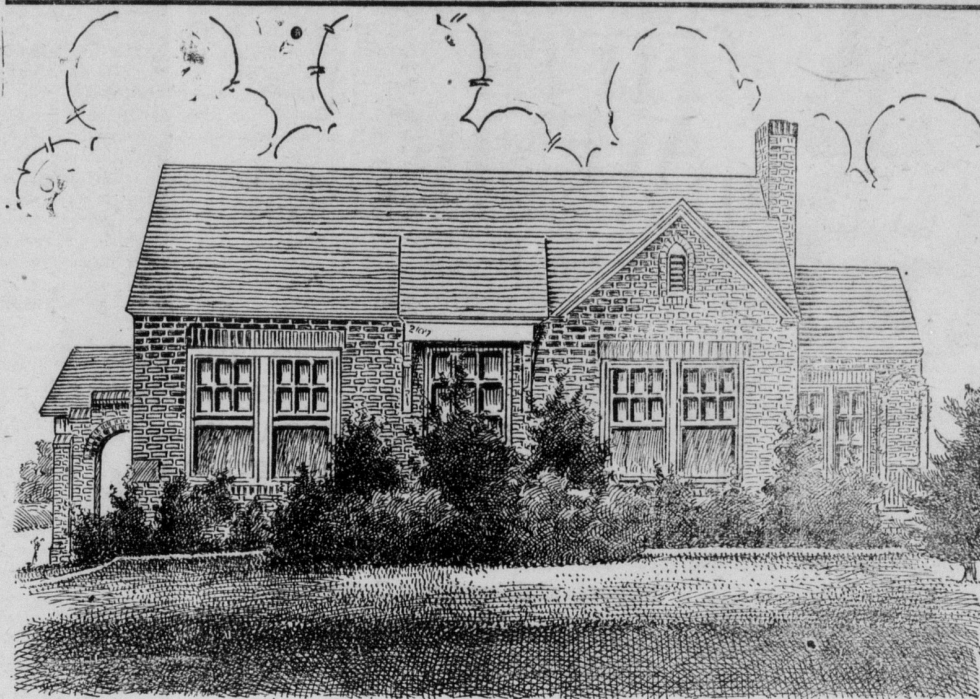
A vacuum tube similar to that in use on radio sets is needed for long-distance telephone wires. Like the amplifying units on a radio outfit the tube is used to intensify the voice sounds so that they are carried to their destinations with the same volume as when they are spoken into the transmitter.

These tubes are placed in long-distance telephone circuits over 300 miles long at intervals of from forty to fifty miles so that the voice currents, irrespective of the distance traveled, are continuously strong and clear.

One of the first results accomplished through the use of these tubes was the reduction in the size of the copper wires used for long-distance conversations. Wires as thick as an overhead trolley feeder was formerly needed to talk from New York to Denver, Colorado. Nowadays, through the use of the tubes, together with the so-called "loading coils" and improvements in cable, wire as thin as that used for local calls can be employed.

The "loading coils" are likewise needed on long-distance circuits. While it is possible to talk over short distances without them, their installation in the circuits about a mile apart serves to reduce the wire resistance and to neutralize the electrical effect of the copper wires on each other. Telephone amplification is more difficult than that of the radio because it has to be a two-way amplification. Radio fans do not find it necessary to talk back into the ether over the antenna while a one-way telephone conversation would be manifestly unsatisfactory.

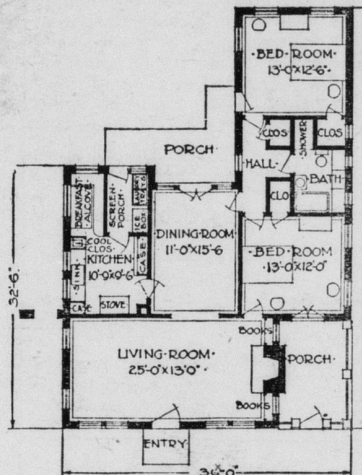
Brick Gains Favor in California Bungalows



THE AHWANEE—Design A527

CALIFORNIA was chiefly responsible for the rapid jump into popularity of the bungalow of today, and there perhaps more than anywhere else is encountered this type of home in all its infinite variety. Illustrated herewith is the inspiration of a California architect of much experience with this type of home. It is essentially for a warm country and like all California bungalows has no basement. Its heating system likewise is confined to the one open grate in the living room.

But in other respects its arrangement is well worth consideration. The large, well lighted living room is certain to find instant favor, and even in the South there is charm about the big open grate. The dining room, directly in its rear, opening out upon a rear porch and in all probability into a patio, is a cleverly adapted Southern idea. To the left of the dining room is a cozy little kitchen with a snug breakfast room and screened porch, the latter accommodating the ice box and laundry trays, leading off it. The two bedrooms and bath are in the wing to the right, back of the living room.



Most California bungalows in the past have been built more or less flimsily of a light framework of wood and stuccoed, a favorite base for the latter being ordinary chicken wire. In several instances in recent years the fallacy of this has been effectually proved, notably in the Berkeley conflagration and in the Santa Barbara earthquake. In both instances this kind of construction suffered tremendously. Since then there has been a decided preference for common brick which offers stability and fire resistance in addition to cheapness and economy.

Fully to bring out the best points of this exceptional bungalow it should be liberally shrubbed. Something of the possibilities are shown in the illustration, but one must see the positive contrast of greens and reds and yellows of twig and flower and brick to be able to appreciate what can be made of the picture by a little artistic treatment. One of the greatest charms of the brick home is its natural blending, under average conditions, with its surroundings, and the ease with which this effect can be developed and intensified.

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