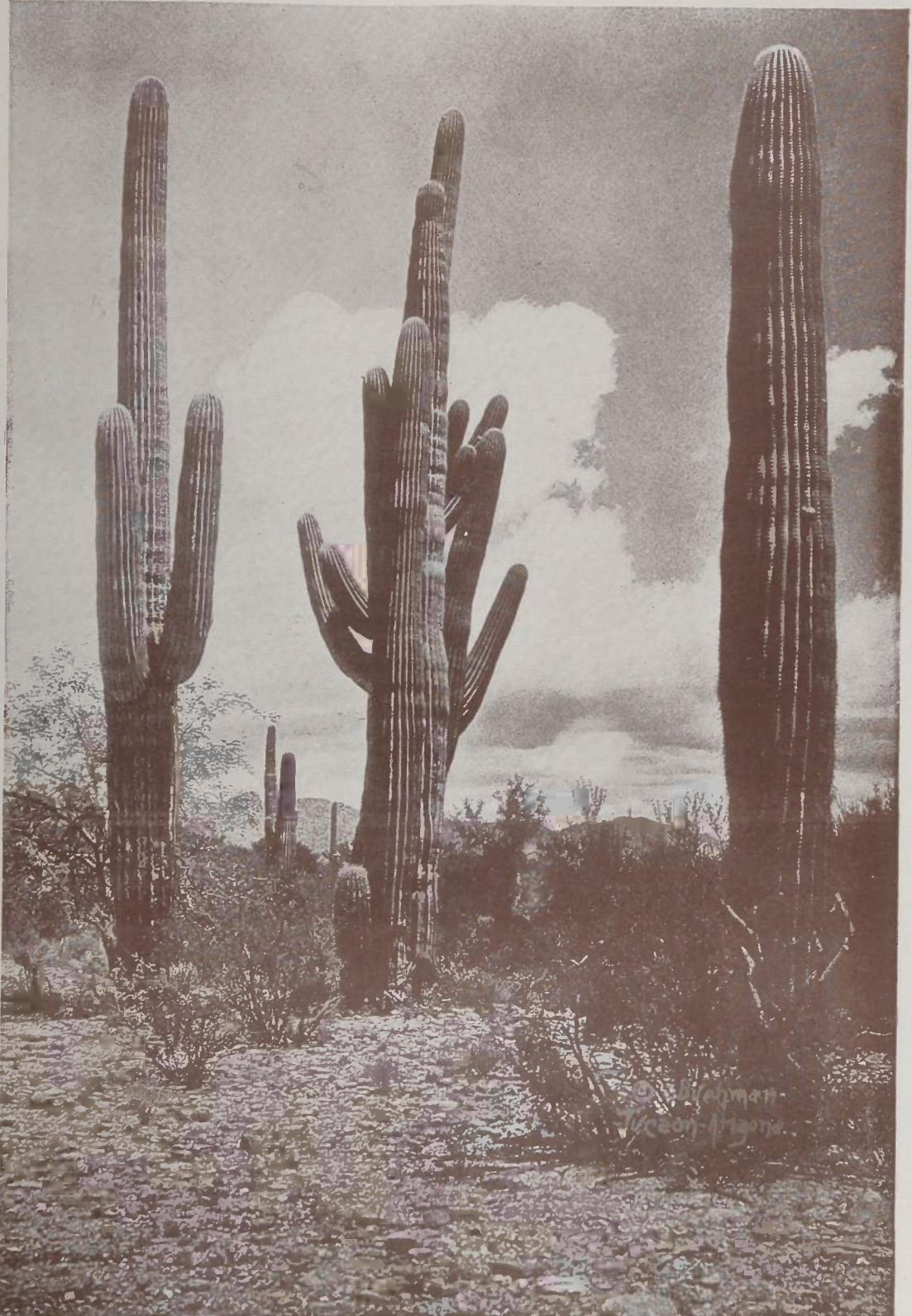


THE ARIZONA AGRICULTURIST

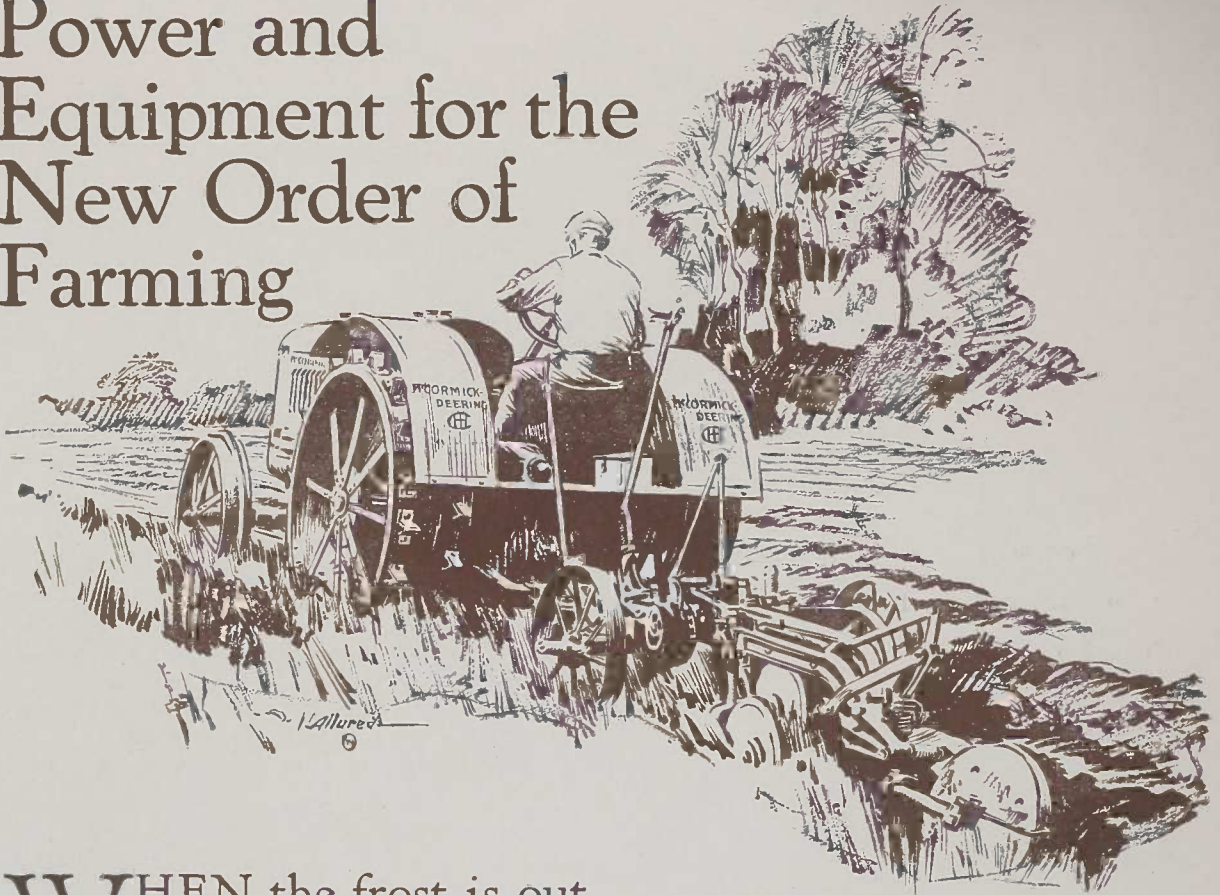
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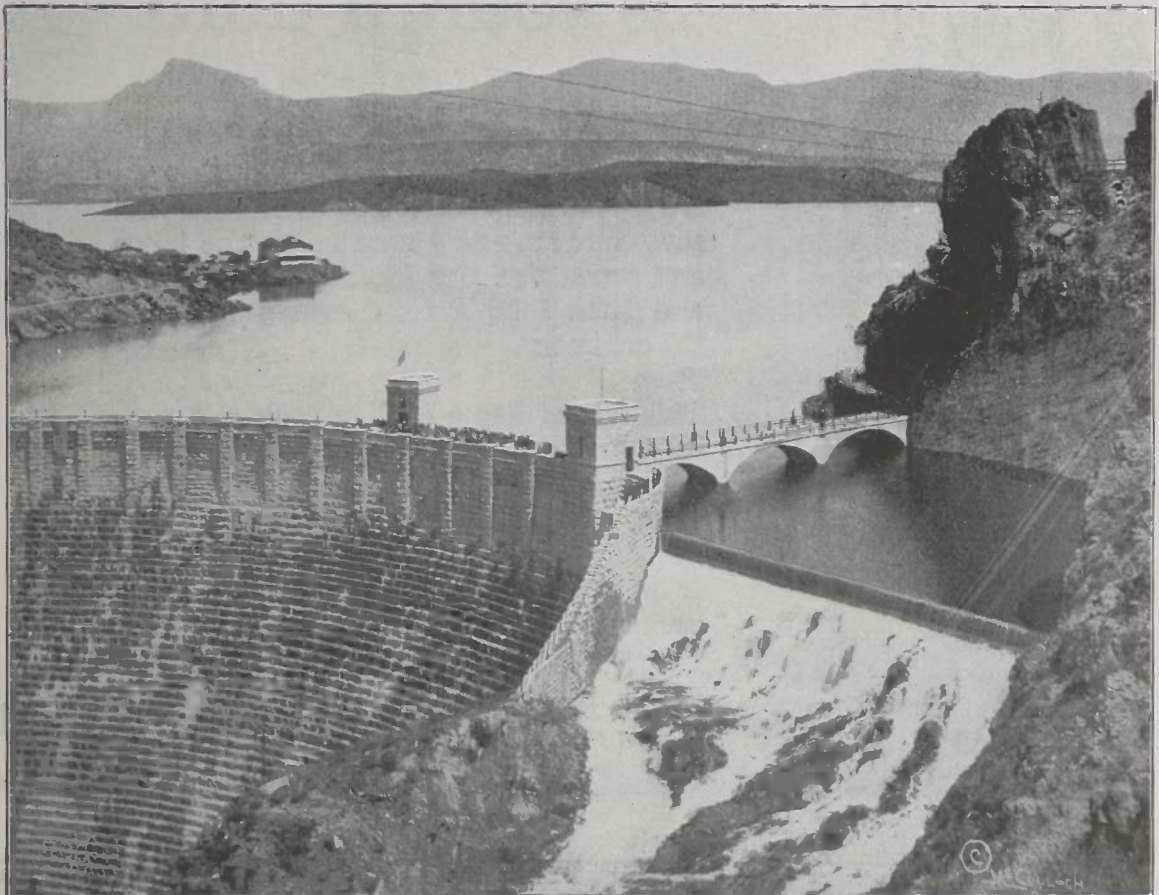
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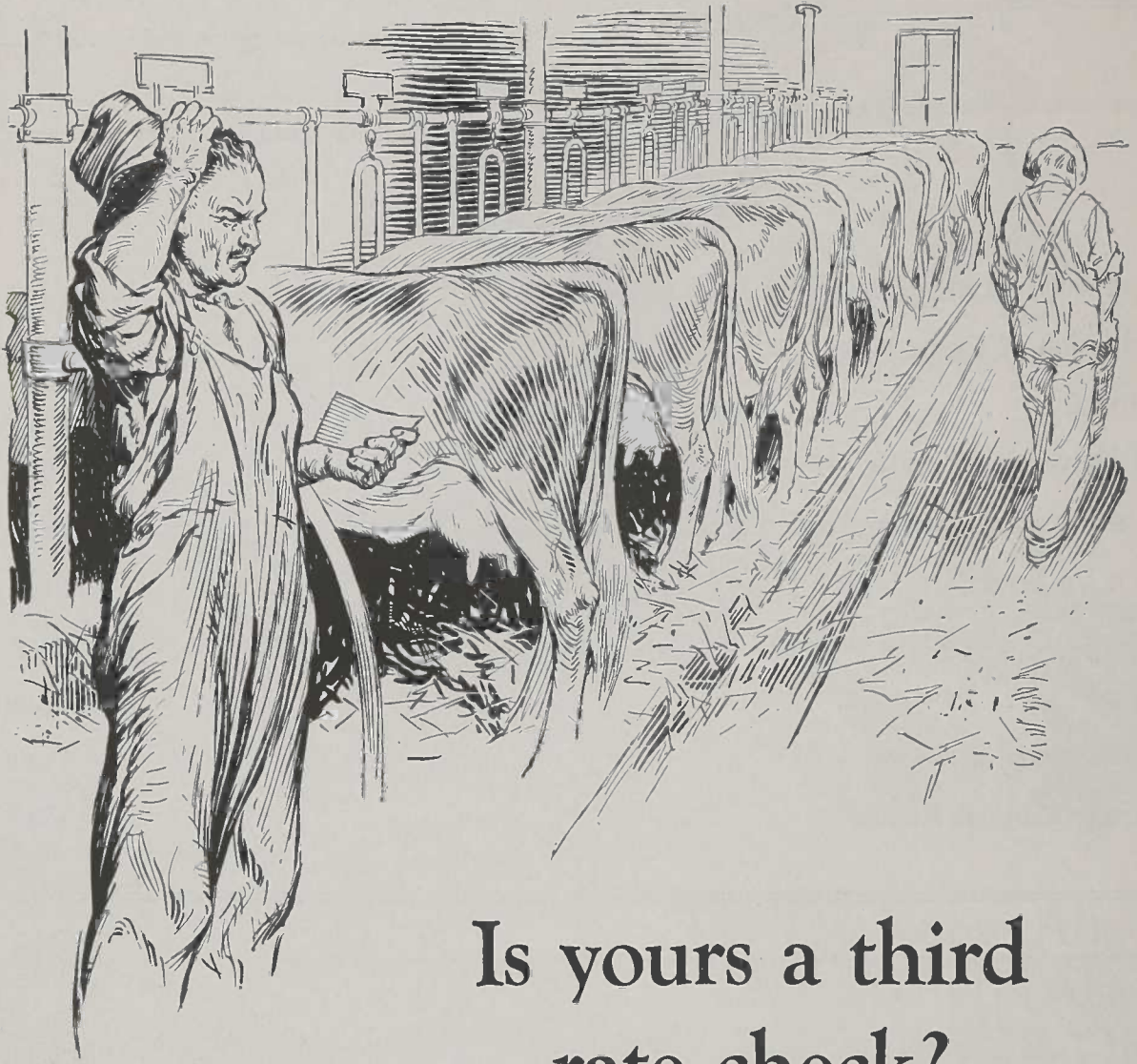
MARCH, 1926

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A national dairy paper quotes a farmer who says that too many men go to the labor and expense of *producing good milk*—and then take a third-rate product to the creamery.

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GENERAL ELECTRIC

ONION SEED PRODUCTION

By M. F. WHARTON, Horticulturist, University of Arizona

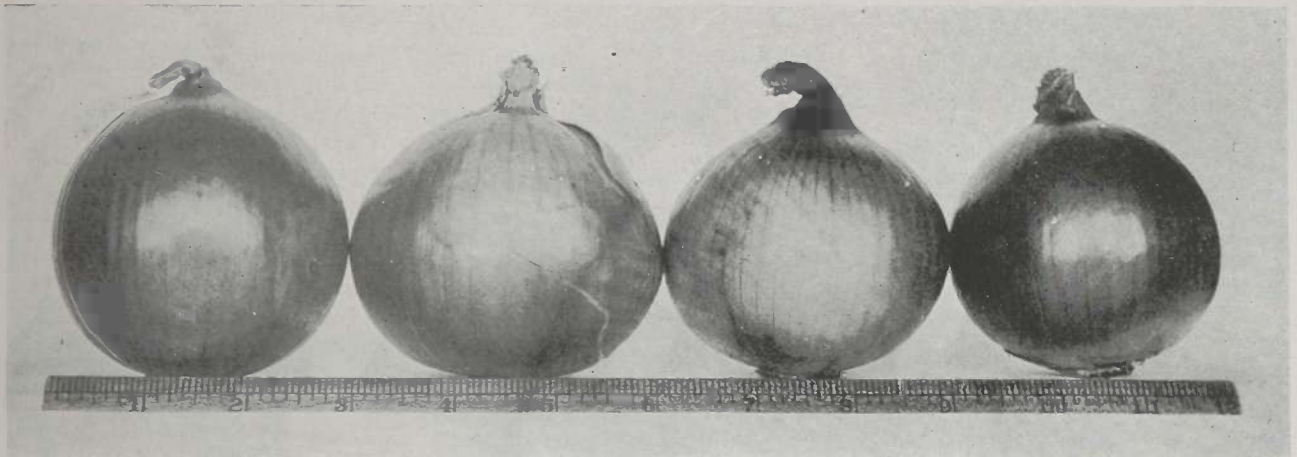
Better Adapted Seed Strains at Lower Cost the Result of Home Grown Seed—Care in Bulb Selection and Methods of Harvesting and Curing the Important Factors in Successful Production of Onion Seed

THE onion industry in the State of Arizona is drawing much favorable attention and many of our better farmers are taking it up either as a sideline or as a major industry. The cultural phase has passed through the experimental stage and definite lines of cultural practice have been laid down for the production of the crop. Little attention, however, has been paid to the selection of bulbs for seed growing so that seed strains can be produced that will be better adapted to our

3. Bulbs slightly smaller than those desired in the crop should be saved as mother bulbs.
4. All mother bulbs should be firm and free from insect and mechanical injuries.
5. Select at least three times as many bulbs as needed.

The next step is that of curing out and storage. Handle the seed bulbs carefully to prevent injury and cure separately from the general crop, being sure that they are fully cured before putting in storage. The best

the soil is rich and well drained. Work down to a garden consistency and lay off in ridges as for transplants. The distance between the rows is that best suited to the cultural tools used and the distance apart in the row is that of diameter of the bulbs. Use only the bulbs that have stored through the winter in good shape and are hard and firm. As there is an inherent quality of dormancy in onions that varies with different strains and individuals, it is important to cultivate the strain



Four Onions to the Foot—Note the Uniformity of Above Bulbs Which are Ideal for Seed Production

local conditions than the ones used at present. In addition to the development of better adapted strains there is an economic element of saving in the home production of seed. Why pay seed companies when better seed may be produced on the farm with a little care in its production?

The most important step in the production of onion seed is that of bulb selection. These mother bulbs should be selected at harvest time and briefly the points to observe in their selection are as follows:

1. Select bulbs of uniform maturity.
2. Only bulbs typical in shape and color should be kept.

of care is none too good, and any bulbs injured or sunburned in curing should be at once discarded. As soon as the curing operation is complete, pack the bulbs in slat crates and store away until planting time. The storage should be dark, dry, well ventilated, and one that will maintain a cool uniform temperature. Light and varying temperatures will induce early sprouting. An adobe cellar or house can easily be made into an ideal storage house.

In the southern valleys the mother bulbs should go to the field early in February at about the same time the young seedlings are transplanted to the field. The field is selected where

that will remain dormant the longest. In this way the storable quality in the onion will be developed. The bulbs are planted to a depth that will allow the covering of the entire bulb.

Cultural practices for the seed bulbs are the same as for the general crop with especial care being given to the control of insects and the prevention of injury by cultivation. Good clean cultivation in addition to keeping the soil in a uniformly moist growing condition is also necessary.

As soon as the seed heads are formed they should be carefully watched so that harvest will be made at the proper time. Seed heads

(Continued on Page 18)

THE PRODUCTION OF CLEAN MILK ON THE DAIRY FARM

By G. F. WOODS, '26

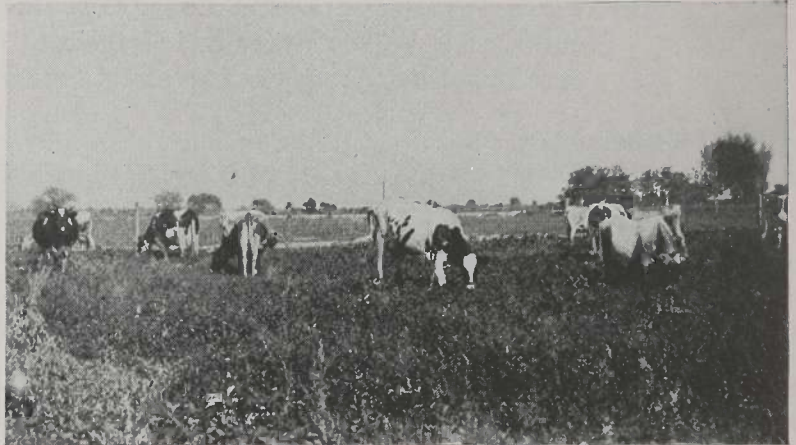
Methods More Important Than Equipment on the Small Retail Dairy— Actual Bacterial Counts Prove the Importance of Sanitation in the Handling of Milk

MANY farmers have found that a retail milk trade is the most profitable way of disposing of their product, especially in districts where the dairy industry has not reached a high state of development and the volume of milk is insufficient to assure the success of a local creamery, since the value of milk as a food, especially for children and sick people, is universally recognized there is a ready sale for good, clean milk in any town.

More care must be taken with the milk to assure a high grade product than if the milk is to be sold to a creamery, although the importance of clean milk for dairy products, such as butter and cheese, cannot be over-emphasized. Milk is extremely perishable and is a possible carrier of disease germs, hence the consuming public demands milk of good quality, and is backed up in its demand by the local health officers.

The methods used by the producer are more important than his equipment. This fact is recognized by the official score card for dairy farms which allows sixty per cent for methods and forty per cent for equipment. However the average man will not take the time or precaution necessary to assure the production of first class milk without a certain amount of properly constructed equipment.

To be sure of putting on the market a wholesome product the farmer must have healthy cows. If the milk is contaminated at its source with pathogenic or other undesirable bacteria no amount of care on the part of the persons handling the milk will make it a safe food, unless it is pasteurized. This is an expensive process and not many small dairies can afford to install the equipment and operate it. (In Tucson pasteurization has increased the price of milk 2 cents per quart.) So if it is sold as raw milk the cows must be in a good healthy condition and be free from such diseases as will be transmitted to man. In this connection should be mentioned the health of all persons milking or handling the milk. No person who has a contagious disease or is a car-



A Typical Dairy Scene in Southern Arizona

rier of such a malady should be allowed near the milk or be allowed to associate with those persons who do handle the milk. To safe-guard the public against the spread of disease through its milk supply all cows should be T. B. Tested and the health of the employees certified by a competent Physician.

The ideal milk for direct consumption is that which is in the same physical condition as it is when it comes from the cow. It should then be the aim of the producer to deliver to the consumer the milk as near the ideal condition as possible. To obtain this end the total number of bacteria should be kept as low as possible, and all foreign material such as dirt and manure be excluded. This can be possible only where the utmost care and cleanliness is observed from the time it is drawn from the cow till it is bottled and delivered to the customer.

The first chance of contamination is the particles of dust and dirt that fall from the udder of the cow during the process of milking. Therefore any operation causing dust to rise in the air, such as feeding or cleaning the stables should be done at such a time as not to leave dust in the air at milking time. Each cow should be thoroughly groomed prior to milking to remove loose hairs and dirt that may adhere to her body which get into the milk during the

milking. Keeping the hairs clipped from the udder and the flanks will aid in keeping the cow clean, and eliminate to a great extent the possibility of hairs falling into the milk. Before each milking the udder and flanks should be washed with clean water and wiped dry with a clean, sterile cloth. A disinfectant such as B. K. added to the water will greatly increase the efficiency of the washing. The water serves also to dampen any small particles of dirt or loose hairs remaining on the cow causing them to adhere and thus not fall off into the milk so readily. Another means of keeping foreign material from dropping into the milk is the use of small top milking pail. Theoretically, milk if properly handled should not need straining, but under average conditions there will occasionally be sediment found which should be removed before the product is put on the market. For this cotton disks placed on a metal strainer, two or three thicknesses of cheese-cloth, or a good grade of canton flannel is satisfactory. The milk should be strained before it is run over the cooler and as soon after milking as possible to prevent the solid particles from dissolving.

Besides the contamination by the air and by particles of foreign material falling into the milk there remains that which comes from the utensils. This is the most important

factor in the original contamination, especially unsterilized utensils. The greater the number of pieces of equipment the milk comes in contact with the greater the chances of further bacteria and dirt being added. Some idea can be gained of the amount of bacteria added to milk from utensils that are not thoroughly sterilized by the following table taken from Illinois Bulletin 204.

Condition of utensils	Bacteria per c.c.
Normal count, utensils sterile	5,000
3 milk pails added	54,159
1 strainer added	7,315
1 clarifier tank added	8,038
1 clarifier added	141,340
1 cooler added	50,900
1 bottle filler added	83,248
Total for utensils	345,000

Since some utensils are necessary it is important that they be strictly clean and sterilized. To properly clean any utensil it should first be washed in cold or lukewarm water then with hot water containing washing soda. A good brush should be used but not a rag as it will only smooth any adhering milk. The wash water is rinsed off with clean water and the utensil sterilized.

Sterilization may be accomplished by heat or chemicals; live steam being the more practical and more efficient. Cans and similar utensils may be heated over a jet of steam for several minutes and allowed to dry and air. A good method is to place them in a well ventilated place where the sun's rays can strike them but protected from flies and dust. The heat from the steam will dry off the can if a lid is not placed on it. Any moisture left in a utensil will furnish an opportunity for bacterial growth. Bottles can be sterilized by placing them in a large box with a tight fitting door and turning in the steam for twenty or thirty minutes. They may be left in the sterilizer until used and thus prevent contamination.

To sterilize with chemicals a solution is made and the utensils dipped in it. They may then be placed where they can sun and air. Several chemicals such as B. K. and Sterilac are on the market for this purpose or a home made stock solution can be made as follows: Add one pound of finely powdered chloride of lime to one gallon of water; allow to stand twenty-four hours with several stirrings during the day. Pour off the clear fluid into a dark colored bottle and cork tightly. Use in the propor-



The Small Top Milk Pail and Clean White Clothes are Factors in the Production of Clean Milk.

tion of one fluid ounce to five gallons of water.

The original contamination of milk is surprisingly small compared with the bacterial count made after several hours. This is brought out in an investigation made by Ayers, Cook, and Clemmer and is reported on in U. S Department of Agriculture Bulletin 642. Hence the large number of bacteria often found in milk is usually due to the growth of those introduced during handling. By cooling promptly after milking and holding at a low temperature this growth can be checked to a great extent. The following table taken from New York Department of Agriculture Circular 10 shows the development of bacteria at different temperatures.

Temperature	Bacteria per C. C.	Time held
40° F	4,000	12 hrs.
45° F	9,000	12 "
50° F	18,000	12 "
55° F	38,000	12 "
60° F	453,000	12 "
70° F	8,800,000	12 "
80° F	55,300,000	12 "

By running the milk over a cold surface in a thin film undesirable and cowy odors are eliminated. However the air that comes in contact with the milk must be pure and free from dust. To keep the air in a satisfactory condition the milk house must be located away from contaminating surroundings and the condition inside the house be such that no undesirable odors are given off. Since a certain amount of steam and foul air is given off in the washing room, the milk should be handled in a separate room. The entire house should be kept well ventilated but protected from drafts and dust laden air. There should be an abundance of window space for the admission of sunlight as this is one of the best means of keeping the house in a sanitary condition.

The production of clean, safe milk may be briefly stated as keeping bacteria and all other foreign material out, cooling promptly, and holding at a low temperature to prevent the development of any bacteria that have been introduced. That it can be done has been demonstrated by many of our small dairy farmers. The extra cost of equipment is more than offset by ease of marketing a good product as compared to the selling of a product of inferior quality.

ARIZONA AGRICULTURIST

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EDITORIAL

A MATTER TO THINK ABOUT

WITH the opening of the new year, the legislatures of a large number of states have gone into session. It is reported that 38 states will consider the ratification of the proposed child labor amendment. Within the next month or so the fate of the amendment should be known.

In 1920 there were 13,502,582 children in the country between 10 and 15 years of age. Of these 1,060,858 were gainfully employed, and 647,309 of these, or 61 per cent of those working, were engaged in farm pursuits. The amendment, therefore, would apply in a larger way to agriculture and horticulture than to all other branches of industry combined. There are certain features in this connection which deserve careful thought, not only by fruit growers and farmers but by every American citizen.

The American farm home has been a powerful factor in the life of the nation. In times of great crisis it has always proved itself the bulwark of the nation. During periods of economical and financial difficulties the conservative thinking and methods of the farm folks have served as a stabilizing influence to the entire country. In times of war the farm homes have supplied able men in great numbers, and they have supplied large quantities of food; in fact, if the history of the recent war is ever written in accordance with the facts, it will give American farmers a large share of the credit for the allied victory because of the quantities of food they supplied.

In industry and business the farm homes have also contributed their part. When a corporation needs a man of woman for a real hard job, it is pretty likely to select one whose early training was received on the farm, for it has been learned by experience that in some way or another such folk are able to put hard jobs across better on the average than men or women who have spent their entire lives in the cities. A majority of the leading men in public life have been furnished by farms. Politicians, realizing the esteem in which farm-reared folks are held, commonly contrive in one way or another to connect their early training with the farm.

The record of the American farm home in furnishing good men and women shows that its method of raising children is about right. An institution which has such a successful record should not, in our opinion, be tampered with. It may be possible to improve its methods, but there are so many chances that the situation will be injured instead of improved that we believe matters should be left as they are. There are times when it is simply good sense to "let good enough alone," and we believe this is one of them.

The proposed child labor amendment, in our opinion, threatens to invade the sanctity of the American farm home, which has always been, and still is, one of the most dependable elements in our national welfare. We believe it is only wise American policy that the amendment should be voted down in its present form.

—American Fruit Grower.

AGGIE CLUB WORK

THE Aggie Club has taken definite action concerning the activities of the club for this semester. The sale of ice cream, the handling of concessions, and the staging of the annual Aggie Dance have been reviewed and men appointed to do the work. One of the chief objects of this work is to secure funds for the financing of another judging team next year. It was demonstrated last year that a little co-operation of the Club members along the above mentioned lines of endeavor will net several hundred dollars. The sale of ice cream manufactured by the Dairy department should be a good source of income besides giving the students training in the manufacture and sale of the product.

The Aggie dance, the crowning social event of the school year, is not a commercial venture, but rather a big party given for the purpose of showing the student body the time of their lives. For years the Aggie dance has been something to look forward to, and this year it is going to be better than ever. The Aggie Club well deserves the reputation of staging the best dance of the year. This year it will be held on April third so dig out your farmer paraphernalia and be prepared.

All the funds that can be secured thru the club activities will be pooled to provide funds for the judging team next year. The sending of a judging team depends on the success of the Aggie Club this semester. Each student should feel responsible for a part of the work to be done and see that it is done well.

THE UNIVERSITY PRACTICE HOUSE

By LUCY AXLINE '26.

Senior Home Economics Girls Are Given Chance to Put Their Theories Into Practice

THE University Practice House is a six room cottage on East Fourth street. There are two teachers who live there during the entire school year, one of whom acts in the capacity of head resident, grants special permissions, and is responsible for the conduct of the girls during the time they are in the House. The other teacher acts as companion and advisor. Then there is the Practice House Supervisor who has charge of all the work but who did not live with the girls this year. The faculty members living in the house pay room and board. The students pay only for food which is prorated.

The girls enter the Practice House in groups of three or four, and occasionally five, according to the size of the class registered. Each group remains at least four weeks and not longer than six weeks. During this time the girls perform the regular duties of a household, planning of menus, buying of supplies, preparing of meals washing of all household linen, and cleaning of the house. The duties of the house are divided as evenly as possible under such headings as hostess, housekeeper, cook, and assistant cook. Every girl occupies each position for a certain length of time in order that she may have the opportunity to become acquainted with every phase of house work, have an opportunity to apply the principles she has learned during her three pre-



A Group of Seniors at the Practice House

vious years of Home Economics study, and may meet the situations which call upon her knowledge and ingenuity for successful mastery.

There are many girls who have never been called upon to shoulder any of the responsibilities connected with home making. They enter the University, take the Home Economics course, and for three years diligently pursue the study of theories of cookery, theories of nutrition and feeding, theories of marketing, theories of economy, and theories of household management. All are very necessary and very interesting courses, but is it not fitting that the department of Home Economics offer also a course in the practical application of all these theories? Should they not be taught to use these tools which they

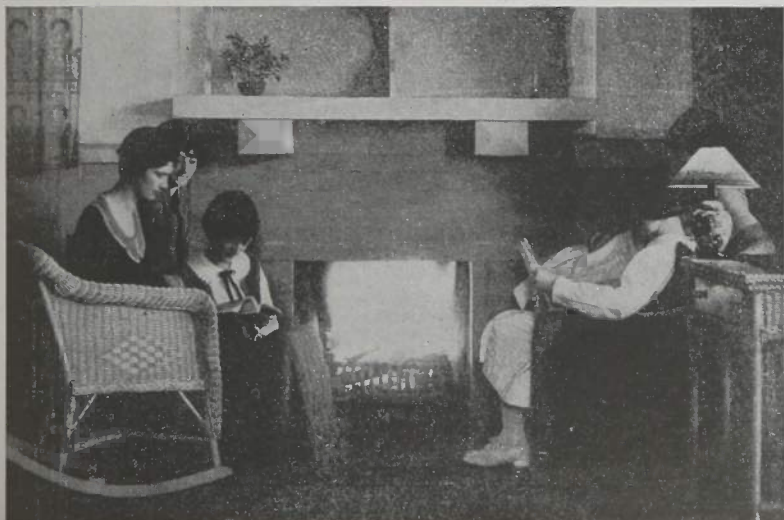
have been accumulating? Obviously, the answer is yes. And this is the exact function of the Practice House Course. The girls are given the opportunity to really practice what they have learned during the preceding three years.

Of course, the conditions in the Practice House can not exactly parallel those found in a home, but the fundamental principles are the same. The most important problem to be met is that of providing adequate, well-prepared food at a minimum cost and with a moderate amount of time and energy. In order to do this one must have a thorough knowledge of the food requirements of the individual, the composition of various foodstuffs, and the comparative prices in local markets. How well the girls succeed in meeting this problem is shown by the following figures:

Average cost of breakfast.....	10 cents
Average cost of lunches.....	13 cents
Average cost of dinners.....	25 cents

The principles of economy in every phase of housekeeping are practiced. The first is economy of food money, which has already been discussed. The second is economy by means of conservation of gas and electricity. A little thought on the part of each member of a family can cut these bills decidedly. The third economy is that which results from care of equipment. All the linen is carefully laundered, the rugs are kept clean, the floors protected, and the

(Continued on Page 17)



A Glimpse of the Home Life in the Practice House

GRAIN FARMING VS. LIVESTOCK FARMING

FRANCIS L. SMITH, '27

Beware of False Profits—Keep Livestock on Your Farm as a Balance Wheel of Agriculture to Bring in a Continuous Income and Protect Against Soil Depletion

GRAIN farming is that type of farming in which the producer spends all his energies in producing a major field crop. His main source of income is in the sale of this crop. Livestock farming is that type of farming which the producer feeds a major portion of his crop to his animals and receives his income thru the sale of the animals or from their products in the form of wool or dairy products.

This question of livestock farming versus grain farming has of late years become one of high economic importance. The hard times so universally felt by farmers thruout the country has led scientific men to inquire of the causes. Business depressions have never been so severe as to prevent some farmers from making a comfortable living. It is the efficient farmers that succeed. Hard times stimulate efficiency because the producers must be efficient to compete successfully.

During the period of hard times it was noticed that those farmers who were struck hardest were the grain farmers of the great plains region. Banks failed by the hundred during this period in that section of the country. Farm management surveys have found that outside of more or less specialized areas the most profitable farms are operated by farmers who raise livestock.

Any system of farming to be permanent must maintain soil fertility. The grain farmer raises his crop, gathers the valuable grain and leaves the straw to waste, or in some cases he may even burn it. The grain is sold and the plant food elements are gone. If this practice is long continued the available elements will become depleted with a corresponding reduction in the crop yield. The actual fertilizer value of a ton is eight to ten dollars. If the farmer raises livestock, not only the grain is fed, but the straw that was wasted under the other system of farming is utilized. More crops are raised to furnish the stock with a more balanced ration. This makes crop rotation possi-



Why not Feed This Heavy Crop to Farm Animals and Thus Maintain the Fertility of the Soil

ble which is so essential to a permanent system of agriculture. The farmer may even buy concentrates to feed his animals. Chemists have noted that 90 percent of the feed fed to animals can be recovered in the solid and liquid manure. Under ordinary farm practices 50 to 80 percent of the original plant food elements can be returned to the soil if the plants are fed to stock and all the manure returned to the land. The manurial value of a mature horse is about \$27.00, and that of a cow about \$20.00 per year. The livestock farmer, then, receives as much value from the grain, utilizes waste and by-products, and may even add fertility by the purchase and feeding on concentrated feed, besides returning to the soil the plant food which the grain farmer sells.

Livestock farming keeps a man actively engaged thruout the year. The grain farmer is busy but five or six months of the year, and the remaining months of the year he is either idle or employed elsewhere. Livestock, then, stabilizes the farm occupation. It regulates, too, the farm

income, giving a more evenly distributed income.

Livestock farming makes it possible to profitably utilize the pasture areas that are too rough, stony, or irregular to cultivate. Livestock also consume many products such as cotton seed meal, gluten feed and tankage that would otherwise be wasted.

Livestock raising requires skill in breeding and feeding; it increases the risk, but at the same time it offers a better reward to the one who knows his business.

Since the tenancy system of farming is so prevalent in the United States a word should be said about the tenant in relation to livestock farming. A survey of 205 farms in Kansas was made to find which system of renting was the most profitable. A summary of the survey found that land owners received 2.37% interest on investment, and tenants had a labor income of \$375.00 on the cash rent basis. Those farms on the crop share rent had showed a 34% increase in the landlords income and 63% for the tenants income. The

(Continued on Page 20)

WHEN DO YOUR HENS LAY?

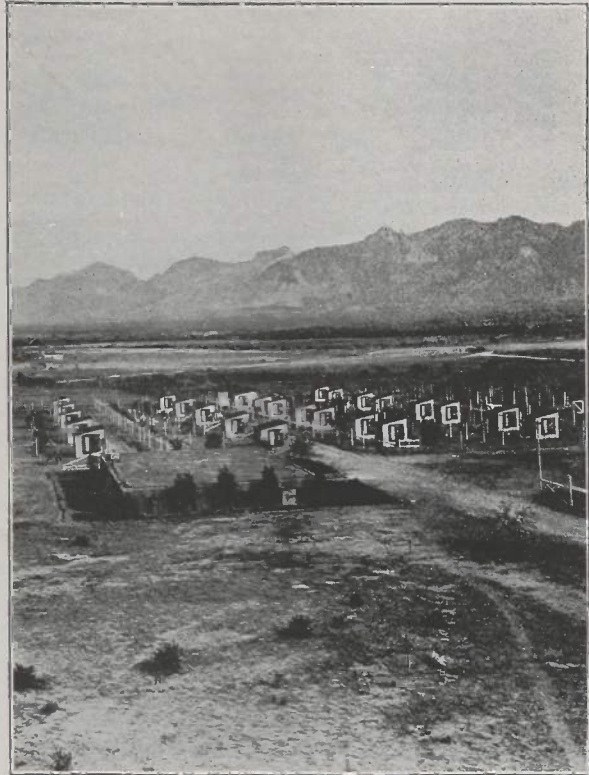
By M. W. GIBBS, '26

Late Molters Average 73 Eggs Per Year Above the Early Molters—A Hen That Molts Late Rests Only a Short Time—The Early Molter Loafs During the Period of High Prices

A STUDY of the relation of the time and rate of molting to winter egg production was recently made by the writer, at the University of Arizona Poultry Farm. The experiment was carried out under the direction of the instructors in the Poultry Department of the University, and was made for the purpose of determining whether or not the hens that began molting early in the season would come back into production and lay enough eggs in the winter while egg prices were high to justify keeping them.

Experiments on the molt have been conducted from time to time by various State Agricultural Experiment Stations in every section of the country. In almost every instance the results of such experiments have confirmed the following facts; (1) Under normal conditions hens usually do not lay through the period of their molt, but stop laying to renew their plumage. (2) As a rule hens that begin molting early in the season take all the fall to molt while the late molters change their feathers rapidly and begin laying again about the time the early molters get started. (3) The early molters not only quit laying, but they lay fewer eggs during the time while they are laying. Usually then, the hens that begin molting early are the lowest producers, while the hens that wait late to drop their feathers lay the greatest number of eggs. However there are variations from the foregoing, even under well regulated conditions. Furthermore, the very best of layers may be thrown into a molt abnormally by improper care and management, such as irregular feeding, sudden changes in feeding and housing conditions, and other irregularities.

A good many commercial poultrymen cull out the early molters in the fall and sell them for meat. With this in mind the study was made here to determine whether or not the early molters would produce enough eggs in the winter while prices were high to justify carrying them over their long molting period.



University of Arizona Poultry Plant Where the Experiments on Molting Were Carried Out

For this purpose thirty-two White Leghorn hens were used. These hens were just completing their first years laying season during the time of the experiment, which began on July 31, 1925 and continued through December 1925. Each hen was examined every two weeks and the progress of the molt recorded. Daily trap-nest egg records had been kept from the time the hens began laying as pullets.

The egg records showed that the lowest producers in the pen laid seventy-five eggs in her first year of production and the highest producer laid two-hundred and twenty eggs. Twelve of the thirty-two hens were molting when they were first observed on July the thirty-first. A number of them were well along in the molt. The highest record made by any of these early molters was one-hundred and thirty-one eggs, and the average for these twelve was 110.08 eggs each. Eleven of the hens began molting during the months of August and September. The highest record made by any of these was 162

eggs for the year, and the average for the group was 134.4 eggs each for the first year, or 24.32 more eggs per hen than the earliest molters. The other nine of the birds molted after October the first, some of them not molting before November and December. These nine hens averaged 183 eggs each for their first year of production, and the highest record made by any of them was 220 eggs. This high record hen did not begin molting, except a little on the neck, until November and by December the fifth her molt was nearly complete. The results are shown below in table No. 1.

This table shows the time molt began; number of hens in each group; and the egg production for the year average for each group.

Group 1. Before Aug 1.	12	110.08
Group 2. During Aug.		
and Sept	11	134.40
Group 3. After Oct. 1st.....	9	183.00

The hens that began molting in
(Continued on Page 17)

STANDARD CONTAINERS FOR FRESH FRUITS

By C. H. COULSON, '26

Standardizing the Fruit Package Facilitates Packing, Shipping, and Marketing—Guarantee of Quantity With Quality Means Satisfied Consumers—Urgent Need for Standard Size Containers—Standard Packages Means a Square Deal

THE fruit grower has not yet reached the state of the famous soap manufacturer who said, "We couldn't make a better product so we improved the box," but certainly much can be done to improve the containers which are now carrying our fruit to market. The old system of marketing the fruit in bulk is a thing of the past, and in its place is the more efficient system of marketing all fruit in containers. So many kinds of fruit grown in dozens of sections widely separated has resulted in the inevitable—various sizes of packages for each fruit. At the present time there are 15 styles of round stave baskets varying in size from 1 to 25 quarts, 40 sizes of cabbage crates, 20 styles of celery crates, 50 styles of hampers, and various others could be mentioned. Yet it is evident that relatively few sizes would meet all the demands of the trade.

Much has already been done to secure definite standards, partly by legislation and partly by general adoption. The Standard Barrel Act gives the dimensions and volume of the apple barrel and custom has eliminated all but two of the boxes in which apples are marketed. But there is much yet to be done.

Standard containers are of vital interest to the average citizen—of much greater interest than he probably realizes. The consumer is frequently defrauded by substitution of short-measure packages at full measure price. Further the cost of marketing is increased by the manufacture of so many styles of containers and this expense is shifted to the consumer.

Standard containers also benefit the producer in relieving him of unfair competition with the "short" package. His cost of packing, and marketing are also reduced which will mean a larger margin of profit.

Yes, standard containers for our fruit and vegetables would evidently be a big boost to horticulturists. Then, before going further it would be well to consider some of the principal factors which will govern the

choice of containers. Perhaps the most important factor is the stability of the package—its ability to stand up under shipment and carry the fruit to the consumer undamaged. Imagine how you would feel after purchasing and opening a can of coffee or box of cigars and found the contents ruined due to a faulty container. The merchant would probably hear from you immediately. Yet many of the containers which carry our fruit to market fail in this most important consideration. Surely such perishable products as fresh fruits should be packed in a container which will insure its delivery undamaged. The second factor which should control the selection of a standard package is convenience to consumer. The package should be easy to carry and of such a size that the contents can be used before spoiling. A bulky, cumbersome package is avoided by the buyer. In the third place the package should be attractive. If Brother Lowney did not pack his chocolates in such beautiful boxes they would not seem nearly so tasty, nor would a box of them have such a strong appeal to the fair sex. Why not give our cherries, apples, and other fruits a chance? The girls as well as the fruit growers would be much better off if they were presented with an attractive box of fruit instead of chocolates. But another factor, that of the cost of container, cannot be left out. The consumer cannot afford, nor should he be asked, to pay for the unnecessary cost of the container. It is here that the standard will cut the cost. When the manufacturer has a dozen different styles of packages to make the cost is going to be high, but if the packages are uniform the cost is materially reduced.

Other factors, less important perhaps, but still worthy of consideration are weight of the container, ease of handling, and convenience to the carrier. High freight rates demand that the container be light, and the size and shape of the box should be such as to make it easy to handle and load for shipment.

Already there has been some legislation, both Federal and State, in an endeavor to standardize fruit and vegetable packages. The Standard Barrel Act, the Standard Container Act, and the Net Weight Amendment have been passed. This legislation is insufficient as all fruits and vegetables are not considered, and the first mentioned governs a container which is doomed to go out of existence. There is conflicting local and state legislation which adds confusion to the already muddled state of affairs. For instance New Jersey prohibits 3 quart baskets, and at the same time the Federal Standard Container Act permits its use. Other states and communities have their own regulations on what sizes can and cannot be used.

A good example of the inadequacy of the present legislation is the fact that it permits both weight and volume bushels. A standard bushel contains, according to the United States Department of Agriculture, 2150.42 cubic inches when level full. Many states have laws which conflict with the Federal law and with each other. The weights are based on heaped measure and the statutes prohibit the sale of standard baskets as bushel containers unless they contain the legal weight. This results in unnecessary relabeling of the commodity and the reweighing and extra handling of perishable products such as fresh fruit is certainly impracticable. There should be a general recognition of the standard bushel container when sold unbroken and legal weights per bushel should be abolished so far as fruits and vegetables are concerned.

It has already been inferred that containers for certain fruits have already been largely standardized. The North-Western apple box with inside dimensions of 18"x11 1-2"x10 1-2" is considered a standard apple box. Peach boxes and citrus crates are also of recognized dimensions due to general adoption. The process of standardizing fruit containers could be greatly hastened by proper legislation, rather than wait for the slow process of adoption.

The present statute calling for a legal weight per bushel should be repealed so far as it influences the handling of fruits for reasons already given. Secondly, there should be established standard shipping containers for fruits which are not now being handled in standardized packages. This would eliminate all the non-essential and short measure containers. Thirdly, all containers should be standardized as to volume and as to dimensions. Volume standardization will eliminate the short measure packages and dimension standardization will enable the manufacturers to keep larger stocks, sell at a lower price, and make the detection of short measure packages a simple matter. In addition it will enable the carrier to work out definite loading specifications.

As the situation now stands it is proposed to standardize hampers, round stave baskets, and split baskets according to volume. Violation of the measure means punishment of both manufacturer and shipper. The sizes fixed in this proposed measure is as follows:

1. Hampers, six sizes, ¼ Bu., ½ Bu., ¾ Bu., 1 Bu., 1½ Bu., and 2 Bu.
2. Round stave baskets, six sizes, same as hampers.
3. Splint baskets, five sizes, 4 qts., 8 qts., 12 qts., 16 qts., and 24 qts.

But there are other containers of even greater importance which should be considered and legislation passed accordingly. The following may be suggested:

Fruit	Container	Dimensions (inside)
Apple	Box	18"x11 1-2"x10 1-2"
Pear	Box	18"x11 1-2"x 8 1-2"
Prune	Box	18"x11 1-2"x3 1-4"
Peach	Box	18"x11 1-2"x3 1-2"
Vegetable		
1-2 bu.	Box	15"x12x 6"
1 bu.	Box	15"x12"x12"
1 1-2 bu.	Box	22 1-2"x12"x12"
Grapes	Crate	16"x16"x4 1-4"
Cantaloupes	Crate	12"x12"x22 1-2"
Cantaloupes (Jumbo)	Crate	13"x13"x22 1-2"
Onion (1 bushel)	Crate	19 5-8"x11 3-16"x9 13-16"
Berry		
Crates		
24 pint		22"x14" 7-8"x11" (hinged top)
24 quart		18"x 9"x 9"
32 quart		22"x11"x11"
32 quart		"x14"x11" (Nailed top)

The above list is not complete, nor would it be safe to say that the adoption of the above would be entirely satisfactory, but some such standard must be adopted. The above list is taken from an outline sent out by the U. S. D. A. and has met the approval of both producers and manufacturers thruout the country. It is certain

that its adoption would be a big step forward. It is vitally necessary in the interest of a square deal that the exact content of the packages be known and that the different sizes be readily distinguishable from one another. It is only by the adoption of some such standards as are outlined above that the goal can be reached.

ARIZONA VEGETABLES

The growing and shipping of winter vegetables in the Salt River Valley region of Arizona has become a large industry; the 1925 winter head lettuce crop is just starting to move to Eastern consuming centers in volume, which will increase until the peak is reached around December 20.

Fred Hilvert, vice-president of the S. A. Gerrard Co., of Cincinnati, Ohio, in charge of his company's operations in the Southwest says that

concern has 1900 acres of lettuce in the valley and will ship a thousand carloads by January 15, when the Imperial Valley California crop will be taking the Eastern markets and make the moving of the last cutting hardly worth while, unless some unforeseen weather condition arises.

The growing of vegetables here requires unlimited capital and naturally has gravitated into the hands of the big distributors, who either buy, or lease acreage best suited to their

needs, sub-lease to the actual growers, whom they finance from start to finish, furnishing seed, specifying time of planting, advancing money to pay labor as needed through the growing season, furnish packages pay cutters, packers and other handlers before settling with the growers.

The S. A. Gerrard Co., Steinhardt & Kelly, of New York; The American Fruit Growers, Inc., of Pittsburgh; Fort-Tidwell, of Denver; Stanley Fruit Co., of Phoenix, are the larger distributors, each having 600 or more acres of lettuce; some cauliflower, peas and spinach are handled in this manner, some of the firms experimenting with root crops, figuring on shipping mixed carloads to the smaller cities that would be overloaded with a solid car of any one commodity.

A survey made on December 3, of the various perishable commodities carried in stock by the John F. Barker Co, wholesale produce distributors supplying Arizona and New Mexico dealers by L C L. express and truck shipments, showed 98 separate items carried. Some individual items were divided up, as seven varieties of Apples from four different states, Washington, Oregon, Idaho and Colorado; Cranberries from Massachusetts, New Jersey and Wisconsin; Spuds from Colorado, California, Idaho and Oregon; Peanuts from Virginia and Japan. Arizona is supplying grapefruit, eggs, butter, cheese, oranges, lemons, pomegranates, dates, figs, lettuce and many kinds of root vegetables, items from far away Arabia, Central America and a large number of states.

The stock lists change daily but are always large and varied as the 350,000 people in Arizona are heavy buyers of perishable food products.

Mr. Barker stated that his firm frequently made truck shipments to Springerville, 245 miles, Safford 200 miles, daily trucks to Miami, Globe, Superior, Ray, Hayden and other big mining camps.

Mr. Barker is a good road enthusiast and a member of the Automobile Club of Arizona, believing that organization is doing great work in promoting good roads and tourist travel in Arizona.

Arizona lettuce recently sold for \$7 per crate in Baltimore, one express car, \$6.50 in Boston.

ALUMNI NOTES

Wm. J. Webster, '24, is teaching Agriculture in Hanford High School at Hanford, Pa. "Ginger" was married soon after his graduation here two years ago.

Howard E. Pooler, 25, is still going to school. He has deserted the

ranks of the Aggies and is studying medicine at McGill University at Montreal, Canada.

H. J. Fulton, '24, was a recent visitor of the Campus. Fulton is in the Extension Service and is stationed at Sacaton where he is engaged in

cotton investigation.

Robert and Gerald Craig were also recent visitors of the campus. They reported that the past season was a fairly good one for them, a ready market for their fruit being found in the nearby towns. The Craig orchard is well known, being the largest apple orchard in the state.

The recent basketball tournament held in Tucson to decide the High School champions of the state brought several of our graduates to Tucson. Among those bringing teams to enter the competition were Owen Allen from Gilbert, Laurence Morris from St. David, and D. G. Younkin from Superior.

R. M. Hess, '26, completed his work for a degree at the end of last semester and is now at Indio, California, where he is working in the capacity of manager of a large fruit farm. Hess majored in Horticulture and he seems to be taking quick advantage of his training.

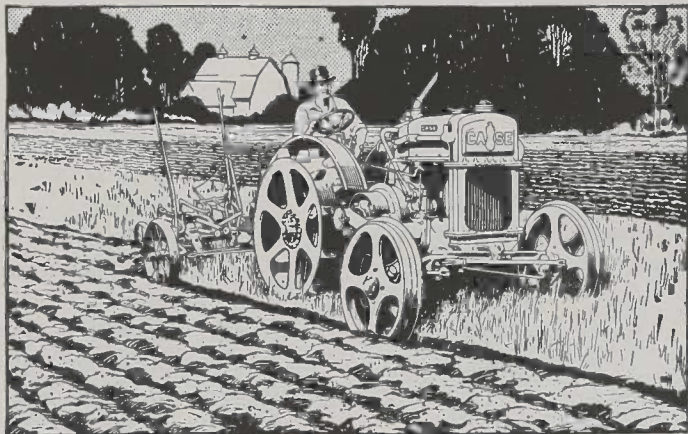
Jack Magee, '24, is now living in Tucson. He is employed by the Southern Arizona Motor Company.

Chas. "Zip" Leshner, '17, is assistant registrar at the University of Arizona.

AGRICULTURAL CHEMISTS OFFER INFORMATION

The work of the Agricultural Chemical Section is divided between research, university teaching and the analysis of samples of miscellaneous agricultural materials submitted by the ranchers and farmers of the state. This latter service is absolutely free to residents of Arizona, and is rapidly growing in extent. During the year 1925, 269 samples of soil, 148 samples of irrigation waters and 145 samples of animal feeding stuffs and fertilizing materials were received and analyzed. A letter, enclosing a copy of the analysis with its interpretation, together with other desired information, is written to each individual as soon as his samples are analyzed. This free consultation service should be of decided value to all who are directly interested in Arizona's agricultural future.

P. S. BURGESS,
Agricultural Chemist.



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WHENEVER a farmer gets a net selling price for his products that is higher than the total cost of production, times are good for him.

But no individual farmer can make much change in selling prices. Nor, on the other hand, can he greatly reduce such production costs as interest, taxes, rent, insurance, etc.

He can, however, make a reduction, oftentimes a big one, in power and labor costs. When a thinking farmer finds out that these items make up, on the average, sixty per cent of crop production costs, he takes immediate steps to cut down this expense.*

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* See U. S. D. A. Bulletin No. 1348

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But electric service for the farmer, in addition to generating stations, requires long transmission lines—sub-stations and transformers, poles and power lines, to be set up and kept in good repair; and, always, day and night, a sufficient reserve of power to meet all needs and reach the most distant consumer on the line. All this represents an investment of money for which wages must be paid whether the current is in use or not.

You cannot get electric service by the truckload. If electric service is to come to you, it must be sold in such quantity and at such a price as will pay the cost of its delivery, as well as the cost of producing it.

How electric service can be sold in such quantity and at such a price as will be mutually beneficial to farmers and electric light and power companies is one of the problems now being studied by fifteen state committees working with the national committee. The Committee on the Relation of Electricity to Agricul-

ture is composed of economists and engineers representing the United States Departments of Agriculture, Commerce and the Interior, American Farm Bureau Federation, National Grange, American Society of Agricultural Engineers, Farm Lighting Manufacturing Association and the National Electric Light Association.

If you are interested in this work, write for a booklet describing it.

NATIONAL ELECTRIC LIGHT ASSOCIATION

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QUESTIONS AND ANSWERS

Q. Are soy beans adapted to Salt River Valley climate conditions, if so when should they be planted and what variety in the Queen Creek District?

W. E. F.

A. Soy beans will make an excellent growth in the Salt River Valley as far as forage is concerned, but so far we have been unable to mature a satisfactory crop of seed. In your letter of Jan. 23rd you do not say whether you are interested in growing soy beans from the stand-point of total tonnage or from the seed stand-point. We have found certain varieties of soy beans such as Biloxi, Otoctan and Wilson No. 5, to be fully as satisfactory as the best varieties of cow peas for green Manure purposes. I rather imagine that you will not be able to obtain a supply of seed locally, but will need to send to some seed house outside the state for a seed supply.

We have been rather slow to advocate the growing of any crop, seed of which must be obtained each year

from outside sources. You will not find the soy beans any more satisfactory than cow peas, and we can grow fairly satisfactory seed crops of several different varieties of cowpeas. The Whip-poor-will is the most popular variety in this section of the country. You will be able to obtain seed supplies from any local seed house.

R. S. HAWKINS,
Agronomist.

Q. The Farm Bureau Committee on Poultry Feeds has been informed by the Department at Washington that a milo maize with yellow endosperm contains a relatively large amount of Vitamin A, similar to yellow corn. I would like to know of a variety of local maize having yellow endosperm, and, further, if by this is meant merely a yellow speck at the end of the grain.

I am also instructed by the committee to ask you why yellow corn is not more generally grown in this part of the country and if it would be possible to grow the yellow instead of the white variety. The ob-

ject of this is to secure a poultry feed with a high vitamin content.

E. S. T.

A. The ordinary yellow milo maize which is being grown in Arizona has a yellow endosperm and contains a larger amount of vitamins than do the white varieties. The endosperm is not a mere speck at the germ end of the grain, but the more or less horny structure which entirely surrounds the germ. In other words, I presume 75% of the grain by weight is endosperm, and all of the rest excepting the outer skin, of course, is germ.

The reason why yellow corn is not being grown in southern Arizona to any extent is largely because neither the farmers nor the experiment stations have been able to find any varieties which will produce as satisfactorily as the white varieties, and, in particular, Mexican June corn.

My own idea concerning vitamins for poultry, human beings or any other class of animals is that it is not necessary to have a large amount of vitamins in all of the foods eaten. In other words, supply your poultry with vitamins from green alfalfa or from other sources and forget the proposition of growing yellow corn to a disadvantage so far as acre yield is concerned.

R. S. HAWKINS,
Agronomist.

Q. I am interested in acquiring knowledge in regard to the process of curing hay known as the "tobacco cure," and will appreciate information in regard to just how this cure is made.

I would also like to have your opinion of hay that is cut in the morning and stacked in the afternoon of the same day. By stacks I mean stacks that will contain from forty-five to fifty tons of hay. The hay we are cutting in this country consists of alfalfa and wild hay. The wild hay is principally wire grass, some timothy and red top. Also your opinion of putting this hay in the stack wet with water. Will hay put up in the above manner make good feed for horses and cattle and does it conform with the requirements of the recognized process of "tobacco cured" hay?

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Thanking you in advance for any information.
N. A. M.

A. Alfalfa hay which has been stacked before it has been cured satisfactorily will often turn brown, into what is known as tobacco cure. This hay is very palatable, livestock very often eating it in preference to nice bright clean hay. One never knows whether he will be able to cure hay into tobacco brown merely by stacking the hay green, and it sometimes turns black instead of brown. There is always a considerable amount of waste when tobacco-brown hay is made. The outside of the stack is always lost, then a few inches from the outside there is a layer of hay which is burned into a black mass, totally unfit for livestock. Perhaps the outer foot or foot and one-half is of little use for feeding purposes. If hay is stacked with rain or dew as well as the natural moisture therein, hay is very apt to be set on fire. Under no conditions would I stack hay wet with water.

I know of a feeder in central Kansas who makes a practice of stacking his hay the day it is cut so as to cure it into a tobacco brown, although he figures that the extra palatability of the tobacco-brown hay more than pays for the loss on the outside of the stack. I do not know whether this man is still following this practice or not. It has been several years since I have been in touch with him. It is not a common practice for men to try to cure tobacco-brown hay, this sort of hay usually being the result of accident.

All classes of livestock seem to relish the brown hay better than the green hay. Hay that is cut in the morning and stacked in the afternoon of the same day is likely to cure out as tobacco-brown hay.

R. S. HAWKINS, Agronomist.

Q. Please inform me if blackleg Aggresin is the best agent to immunize cattle against blackleg, how it is administered and where it may be obtained.

A. N. V. B.

A. Blackleg Aggresin is a germ-free vaccine commonly used for the prevention of blackleg and has proved successful in providing permanent immunity. It is a highly virulent and fatal disease to young cattle, hence, calves should be vaccinated when from three to six months of age or

soon after they begin to eat forage.

The aggresin is a liquid and is injected subcutaneously at the side of the neck with a sterile hypodermic syringe after the point of injection has been disinfected with a 2% dilution of Kresg Dip No. 1. The dosage is 5 cubic centimeters to each animal and syringes of 6cc and 10cc are generally used.

The vaccine may be purchased through the local druggist or the office of the Arizona Cattle Growers' Anns.; Berryhill Bldg.; Phoenix, Ariz.

E. B. STANLEY,
Prof. Animal Husbandry.

Q. Please let me know what your silage costs you?
S. H. W.

A. According to records obtained in 1923 on the Salt River Valley Experimental farm, the actual cost of producing and harvesting one ton of silage was \$5.63. The value of good corn and hegari silages is estimated to be approximately one-third of the market value of alfalfa hay.

E. B. STANLEY,
Prof. Animal Husbandry.

Q. Is silage a suitable supplement to garbage for fattening hogs as a roughage, and will it take the place of alfalfa hay for this purpose?

A. N. D.

A. Silage will not take the place of alfalfa hay nor is it a satisfactory supplement to garbage for feeding hogs. The capacity of the animal is very limited, for consuming large amounts of roughage, which would be necessary if any good were to ac-

(Continued on Page 16)

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(Continued from Page 15)
 crue from the use of silage. The grain and a small portion of the silage would be consumed through the resulting waste would not justify the practice.

Very good results have been secured on our University farm in feeding garbage to hogs. Supplementing garbage with alfalfa hay provided in

racks has produced slightly greater gains than when garbage was fed alone.

E. B. STANLEY,
 Prof. Animal Husbandry.

Q. I am feeding cottonseed meal and ground alfalfa hay to beef cattle which I am fattening for market. Is this a good ration, or can you suggest

a better one? Silage is the only other feed I have on the place.

R. S. F.

A. Cottonseed meal and alfalfa hay is neither an adequate nor an economical ration for fattening beef cattle. You can get fair gains with these feeds during the first part of the feeding period, but if fed enough of this ration to produce good gains over a long period they will get too much protein and will "burn out."

The Agricultural Experiment Station here has found that a ration consisting of silage 35 parts, alfalfa hay 8 parts, and cottonseed meal 3 or 4 parts is an efficient and economical ration for fattening beef cattle under our conditions. Sometimes it is necessary during the last 30 days or so to add some corn, barley or sorghum grain in order to give the desired finish. The addition of grain will give increased gains and smoother finish, but is not justifiable unless the premium paid for finish will pay a profit on the grain.

E. L. SCOTT,
 Asst. Animal Husbandman.

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With the coming of spring and the renewed activity in the growth of plants, the seeds of weeds which were scattered after the harvest of last year are beginning to sprout. Riots of perennial plants are beginning to send up new shoots and are at the present time in their tenderest period of growth.

At this season, control is easier than it is at any other season of the year. Hoeing or scraping or light discing will destroy thousands of young plants in the seeding stage, which a month later will be more resistant to control, and which may have sent out roots which will be strong enough to send up new plants if the first are cut.

An ounce of prevention is worth a pound of cure, and before the busy season arrives is the time to care for these enemies of agriculture.

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 Hair Cuts

WHEN DO YOUR HENS LAY?

(Continued from Page 9)

July did not, as a rule, complete their molt until November. The majority of those that began molting later also were through molting by the end of November. In other words the early molters were slow molters and the late molters changed their plumage quickly. The early molters laid but few eggs from July the 1st. until November the 1st. The twelve hens that began molting in July averaged only 6.25 eggs each during the three last months of the year. The eleven hens that began molting during August and September averaged 8.10 eggs each during the last three months of the year, and those beginning to drop their feathers after October the first laid an average of 9.33 eggs each in these last three months.

Although the number of fowls used in this experiment was too small for the results to be of very great significance commercially, the results indicate that about the same relation exists between the time of molting and egg production here as has been found to prevail in other sections. The early molters did not, in this case, lay enough eggs from July 1st to January 1st to pay for their feed. They will have to make good records from January the 1st until their next molting time to justify keeping them for laying purposes. The frequent handling of the fowls in connection with the experiment might have had some influence in lowering the egg yield, but it should not effect the early molters any more than it did the late molters.

**THE UNIVERSITY
PRACTICE HOUSE**

(Continued from Page 7)


furniture handled carefully. This is an important item in economy in the home also. The fourth economy is that of time and energy, for the girls must carry a full course at school with the work at the Practice House. Careful planning is the means by which the girls avoid haste and confusion. Convenient arrangement in the kitchen saves many steps and much energy.

The next problem is that of making the house as pleasant and home-like as possible. At every meal the

table is set with snowy linen, glistening china and shining silver grouped attractively around a centerpiece of flowers. The rooms are kept clean and orderly at all times and are made attractive by the use of flowers, pictures and the arrangement of furniture. These are customs which one would attempt to follow in one's own home, thereby making it more pleasant, more beautiful and more restful.

The least definite and perhaps the most important problem is that of human relationships. The girls are encouraged in cooperation, usefulness, and thoughtfulness toward others. They cultivate a serene unexcited which is master of the most unexpected situation which may arise, and which allows the girl to present herself to the rest of the group smiling, calm, and always kind. This is an attitude which will do much toward making the home atmosphere what it should be.


From these facts, it is clear that the purpose of the Practice House is to enable girls to become more capable homemakers and that it succeeds remarkably well in carrying out that purpose.



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ONION SEED PRODUCTION

(Continued from Page 3)

should be harvested when the seed is in the dough stage. Contrary to general opinion this does not come when the seed turns black but quite some time later. A good rule to follow is not to cut the seed heads until some shattering occurs, and in this way thoroughly mature seed will be obtained. Another method is to crush some of the seed and if the interior is of a tough and doughy consistency they are ready to be harvested.

In harvesting the heads the best plan is to cut several inches of the stalk with the head which will facilitate handling. The heads are spread out on burlap or cloth covered trays or on a cloth covered table in a cool shady place to dry. Plenty of ventilation is necessary and the heads should be turned every few days to speed up the drying and to prevent heating. Do not spread the heads over two layers deep or heating is apt to take place. As soon as well dried the seed should be threshed out and stored away.

Threshing is usually accomplished on a small scale by rubbing the seed out by hand and running them through a small hand mill to get rid of the chaff and trash. Careful winnowing by hand will serve the same purpose but is a very tedious process and much of the seed will be lost. Another method in general use is to pour the seed into a tub of water and stir well. Allow the seed to settle and skim off the chaff, trash and light seeds. Drain off the water and spread the seed thinly on cloth covered trays and dry thoroughly in a cool, shady well ventilated place. Stir the seed on the trays several times a day and allow to dry until there is no doubt of their being thoroughly devoid of moisture. If stored in a damp condition heating will occur and the vitality will be seriously impaired. Store in sacks or open containers in a dry well ventilated location where the temperature will be uniformly cool. Watch carefully for several days to see if any heating occurs and if so spread out and dry again. Seed stored in this manner will retain vitality and give excellent results when planted.

FRESH FRUITS HELP TEETH

Dentists now come to the front with authoritative statements that fresh fruits are the best desserts for the teeth and that they act as a dentifrice. Pastry and other sweets are well known to be not so good for the teeth.

Fresh fruits have a cleansing effect on the teeth, the dentists say, not only because of their cellulose fibers but also because the vegetable acids they contain stimulate a flow of saliva which keeps the mouth clean. Fruit juice in infancy is known to be a valuable adjunct to the proper development of the teeth and continued through childhood to furnish the sweets for which the youngsters crave instead of candy keeps up the work of keeping the teeth sound, and continued into adult life serves the excellent purpose of keeping them clean and sound.—Illinois State Horticultural Society.

FARSIGHTED INDIAN

An Oklahoma editor tells of an old Indian who came into his office to pay for his paper. The editor took the money then the Indian wanted a receipt. The editor tried to talk him out of it. Mr. Indian insisted. After making it out the editor wanted to know why he was so persistent about wanting a receipt. The Indian said: "Me die sometime. Go to big gate and St. Peter ask if I been good Indian. I say yes. He say did you pay editor for paper. Say yes. He say where is receipt. I no have it. I have to run all over hell to find you and get receipt."—The Argonaut.

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TUCSON'S ANNUAL RODEO

Thousands Thrilled by Spectacular Exhibitions in Tucson's Four-Day "Fiesta de Los Vaqueros"



Before a large crowd, contestants in the second annual "Fiesta de los Vaqueros" ended the four-day rodeo by staging fast and spectacular displays of skill in the final events. The crowd contained persons from all parts of the state and of the country and all seemed well pleased with the exhibitions the cowboys put up. A Phoenix delegation of about 125 persons occupied a special section of the bleachers.

The only accident of the day was that which befell Rafael Ballestero, cowboy from the La Oso ranch, when the horse he was riding in the bare-back bronc riding event plunged over the fence at the south end of the field before he could dismount.

In striking the fence, Ballestero's left elbow was crushed against a fence post and very badly injured. The horse and rider went over the fence together. Ballestero being thrown to the ground on his face. His nose was badly smashed, while his lower lip was lacerated when his lower teeth were forced through it.

The final results in this event, compiled from an average of the four days, placed the J. G. Kane-Gastelum team first for the \$300 purse, with a total of 143 1-5 seconds; R. Merchant and Curry took the \$200 second prize purse with 150 2-4 seconds, and Bud Parker third, \$100, with 152 4-5 seconds. Lee Robinson and Ike Rude failed to show in the finals because of a no-time in the event yesterday.

Bob Crosby took first place in the day money for the calf-roping event, with a time 22 4-5 seconds. B. Brown's time of 25 1-5 seconds gave him second place, and Jack Trainor took third with a time of 25 3-5 seconds.

The first prize of \$300 in the finals of the calf-roping went to H. Myers, whose time for the four days totaled 103 seconds. Hugo Strickland took the second prize of \$200 with a total of 107 seconds, and Bob Crosby third with 116 3-5 seconds.

Lee Robinson took first in the day money for bulldogging, putting his steer to the ground in 17 4-5 seconds; Mike Hastings took second with 20 seconds, and Roy Quick third with 21 3-5 seconds.

The totaling of the times for the four days in the bulldogging event gave the first prize money of \$300 to Roy Quick with 113 3-5 seconds. Bob Crosby, holder of the Roosevelt trophy for the best all-around cowboy, came within one-fifth of a second of tying Quick in the finals, but had to be content with the second prize of \$200, his time being 113 4-5 seconds. Jim Massey took the \$100 third money with 115 4-5 seconds. Jack Kersher, bulldogging, had his steer fall over him, but was extricated uninjured.

(Continued on next page)

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Bob Crosby, tying his calf in 22 4-5 seconds, took first day money, while B. Brown took second with a time of 25 25 1-5 seconds, and Jack Trainor third with 25 3-5 seconds.

The final first prize of \$300 went to H. Myers, whose totals for the four days in the calf-roping totaled 103 seconds. Hugo Strickland took the \$200 second money with 107 seconds,

and Bob Crosby third money with 116 3-5 seconds.

Breezy Cox and Bob Askins, both of whom put up good rides on the brones allotted to them, split first and second money in the bucking horse contest for the day, while Paddy Ryan took third. In the finals, however, Bob Askins was declared the winner and was awarded the \$300

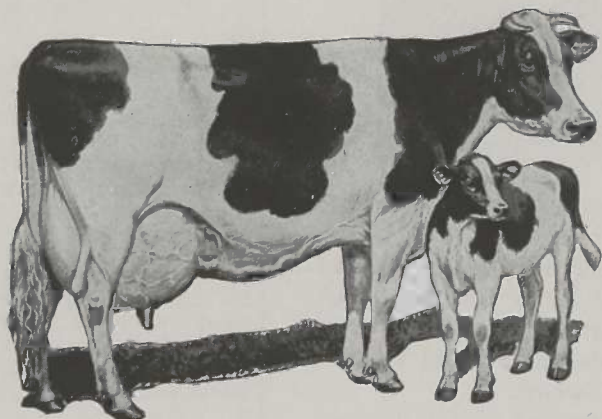
prize and the silver-mounted saddle donated by Leighton Kramer. For the second and third prizes of \$200 and \$100, a split was declared between Breezy Cox and Norman Cowan. In the bareback steer riding contest, Bob Askins and Frank Polk split first and second money and Bert Allen took third.

The spectators were given plenty of thrills in the relay race, in which the Breezy Coz, Carl Arnold and Doc Pardee strings were entered. Arnold's string took first, Pardee's second and Cox's third.

Pardee's first horse won the first lap, but time was lost during the saddle change because of the nervousness of the next lap horse at the band music in the stands nearby. Despite this fact, the Pardee lead was increased at the end of the second lap, but Arnold's lightning saddle change made up for the lead and his last lap horse took the final round an easy winner.

F. Mendoza captured first money in the wild horse race, while Paddy Ryan took second and Carl Arnold third.

In the wild cow milking contest, Ike Mundy won first money, he and his assistant securing a few of the coveted drops of the milky liquid in a soda-water bottle ahead of the other contestants. Richard Merchant took second money and Pete Kersher third.



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(Continued from Page 8)

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