ANNUAL REPORT
OF
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AND
FRED DRAPER, ASSISTANT COUNTY AGRICULTURAL AGENT
AND
D. E. CREIGHTON, ASSISTANT COUNTY AGRICULTURAL AGENT
AND
CHARLES HOBART, ASSISTANT COUNTY AGRICULTURAL AGENT
AND
CHARLES COCHRAN, ASSISTANT COUNTY AGRICULTURAL AGENT

MARICOPA COUNTY

DECEMBER 1937 to DECEMBER 1938

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I N D E X

III. SUMMARY OF ACTIVITIES AND ACCOMPLISHMENTS

Agricultural Extension Service activities in Maricopa County have been carried on during the year following as closely as possible, the Program of Work as approved by the County Farm Bureau Directors. Changes in procedure have been necessary from time to time in order to adjust the service to unforseen conditions which have arisen. The major projects, especially 4-H Club, Pure Seed, Weed Control, Dairy and Poultry projects, Irrigation and Fertilization projects, Insect Pest Control, Plant Disease control and Economic Survey, have been stressed and very satisfactory results obtained. The requests for service to individuals on all projects have been particularly numerous and this has consumed considerable time of the personnel.

Projects have been carried on in cooperation with the University of Arizona Experiment Station and U. S. Department of Agriculture whenever these agencies are available.

Cooperation with governmental agencies such as the Bureau of Agricultural Economics, Rural Youth Administration, Farm Security Administration, Farm Debt Adjustment and Agricultural Conservation, especially, has required much of the time of the personnel. On the Agricultural Conservation Program, the Agent has acted as Secretary to the County Committee, attending practically all meetings, conferences, assisting in working out procedures, answering questions by farmers regarding the program and in holding educational meetings throughout the year. In all, approximately 703 hours were devoted to this one program alone by the Agent. Seventeen educational meetings on the program were held during the year.

The Agricultural Conservation Association, through its office personnel, has received and filed a total of 3649 Work Sheets, 1033 applications for subsidy payment, issued 1382 short staple and 634 long staple marketing cards and mapped all farms covered by Work Sheets.

In cooperation with the U. S. Bureau of Entomology and Plant Quarantine, a countywide grasshopper control program was carried out. With materials furnished by the Bureau and funds provided by the Maricopa County Board of Supervisors, poison bran mash totalling 155 tons was distributed to 225 farmers to be applied to 17,350 acres of crop land.

After the passage of the Smith-Doxcy Act providing for free Federal classification and grading of cotton, 7 associations with a membership of 55 were formed through the efforts of the Extension

Service. Eight educational meetings were held in as many communities, in putting this program into effect.

A very gratifying program of 4-H Club Work was carried out with 626 individuals enrolled in 694 projects with a completion of nearly 84%. Thirty-five demonstrations were given, 12 project tours and 16 field tours conducted and 10 judging teams trained for County, State and National competition. A semi-monthly news column in the Arizona Producer has been one means of publicity, 12 radio programs were given and 4 issues of a County News Letter issued. A County 4-H Club fair and two local fairs were held for Club members.

In carrying out the regular Extension program in the County, 2611 farm visits were made, 14,232 office calls by individuals in person and 14,017 telephone calls were received, 2634 letters written, 133 circular letters prepared and 19,711 copies of these mailed to farmers and others interested in agriculture. Miscellaneous meetings attended were 386 in number with a total attendance of 13,280 Fifty demonstrations on various projects were held and attended by 660 interested persons. A total of 39,168 automobile miles were traveled in carrying out this work. All correspondence and typing of reports for the Feed & Fertilizer Control, Agricultural Chemist and Associate Horticulturist in truck crops research, is handled by the clerical staff of the Extension Service.

During the year the Agricultural Chemical Laboratory, in charge of Mr. George Draper, analyzed a total of 1783 samples of material submitted by farmers and others. These samples were divided as follows: Soils, 1035 samples; Water 368; Feeds 13; Manures 97; Poison 29 and Miscellaneous, 241 samples.

The office has been located in the Extension Service Building at 1201 W. Madison Street, Phoenix. This building completed in July 1937, furnished adequate quarters for the Extension Service and Experiment Station staff, Feed and Fertilizer Control, Agricultural Conservation Association and the County Farm Bureau and a large meeting room for use of all farmer organizations.

IV. CHANGES IN COUNTY EXTENSION ORGANIZATION

(1) Form of Organization

The Maricopa County Farm Bureau directly sponsors the Agricultural Extension Service in this County. The Directors of this organization have been very helpful and cooperative by timely suggestions as to projects and in acting as leaders in carrying out these projects. The Farm Bureau has undergone a reorganization program with the help of the regional representative. The new plans

call for more activity along lines of commodity groups and new locals are being formed at this time.

The office force has been increased by two members during the year. At this time there are the County Agent and four assistants, the Home Demonstration Agent and one Assistant, one Specialist in Plant Pathology, one Office Secretary and two Stenographer-Clerks. The increase has been one Assistant County Agent and the Specialist in Plant Pathology.

(2) General Policies

It is the policy of the Extension Service in this County to cooperate with all farm organizations, all State and Federal agencies devoted to agriculture and to anticipate the needs of farmers through new projects or project additions and furnish timely and adequate information on all subjects. The Agent will continue, if possible, to act as Secretary of the County Farm Bureau and the County Agricultural Conservation Association, devoting as much time as possible to aiding these two organizations in the furtherance of their programs.

The office staff will keep in touch with all agricultural activities and cooperate whenever possible in giving assistance to farmer individuals or groups.

(3) Procedure

The Program of Work will be planned by the Extension Service staff and presented to the County Farm Bureau for suggested additions or improvements and for approval. When this is approved by the Farm Bureau it will also be presented to the County Board of Supervisors for approval and forwarded to the Extension Director and President of the University of Arizona for final approval.

V. PROGRAM OF WORK

(1) Factors Considered and Methods used in Determining the Program of Work

The Program of Work this year will be drawn up in final form after conferences with the office staff, Directors of the County Farm Bureau and all State and Federal agencies. All major projects will be continued with special emphasis on general irrigation and fertilization projects. The program will be made extensive enough to cover all matters which may arise during the year. Adequate time must be allowed for work on the Agricultural Conservation Program and and for adjustments to be made in case the water supply for the county is limited. As in previous years, it will be the policy to draw on the employees of the State Experiment Station and Federal Agricultural

Agencies in working out projects to the best advantage of all concerned.

(2) Project Activities and Results

Each member of the County Agent's staff is given definite responsibilities for projects along definite lines of work. Each member is kept conversant with all projects being carried on in the County by office conferences whenever necessary.

The County Agent has in the past year, been responsible for projects dealing with horticulture, insect pest and plant disease control, in addition to his executive duties. Assistant Draper has been assigned 4-H Club work until in October when he was assigned to horticultural projects and the 4-H club projects taken over by Assistant Agent Cochran who will continue with this work throughout the coming year. Assistant Agent Creighton has been in charge of all dairy, Poultry and general livestock projects. Assistant Hobart has devoted his time to general field crops and economic survey projects and has given assistance in the Agricultural Adjustment Program when needed. Specialist Gottlieb who joined the staff in September, devotes his time to plant disease control, doing part extension work and part research.

The clerical work of the office has been handled by Mrs. Jean Eivar, Office Secretary, who is in charge of the clerical force, Mrs. Josephine Henness, Stenographer-Clerk, who is responsible for telephone calls and general accounting of the office, Mrs. Mary Benson, Stenographer-Clerk (resigned September 1) and Miss Theoda Rewick, Stenographer-Clerk, replacing Mrs. Benson, responsible for 4-H Club records and correspondence and correspondence of the Home Demonstration Agent and assistant.

The County Agent has served as Secretary of the County Agricultural Conservation Association and assumes responsibility for the program in the County while the executive work of this program has been handled by Office Manager, George Tatum, transferred to the State Office in May and succeeded by L. B. Smith who is now in charge of the office. Mr. Smith has under his direction, one office assistant, four stenographer-clerks and five assistants in the mapping program.

In addition to the above force, the Experiment Station maintains in the Extension Service Building, a chemical laboratory in charge of Mr. George Draper, for free analysis of fertilizer, soils, water and feeds for farmers and Dr. W. A. Frazier, of the Horticultural Department, to carry on experimental work on truck crops and small fruits. Mr. E. O. Foster, in charge of the Feed & Fertilizer Control for the State, maintains an office and laboratory in the building.

Mr. William Drorbaugh, whose salary is paid cooperatively by all agencies in the building, acts as janitor for all departments.

SOILS

Project #1 - Alkali Reclamation

During midsummer the attention of the Agent was called to the fact that the water table in a number of citrus groves adjoining the Arizona Canal had risen to within one foot or less of the surface. An investigation was made in cooperation with Karl Harris, Bureau of Agricultural Engineering, Division of Irrigation, which showed this to be true. Test wells have been established by the Water Users' Association and two or more pumps installed in hopes of lowering this water. The Agent took soil samples in one citrus grove for analysis during the early fall and others will be taken at intervals throughout the coming year in order to determine if the salt accumulation will be such as to cause injury to the trees.

Test wells in the Liberty district were measured until May when the irrigation district put in test wells of their own and started taking readings. A new pump was installed in that vicinity in the late spring and the irrigation district intends to chart the effect of pumping on the ground water.

Project #2 - Fertilization Practice

During the year the Agent has assisted in working out a fertilization program for 35 growers of various crops. These programs covered citrus, pecan, general crops, deciduous fruits, ornamentals and vegetables and were formulated after farm visits had been made and in some cases soil samples taken for analysis. In January the Agent spoke to the Sierra Vista Garden Club and in August, to the Globe-Miami and Beardsley Garden Clubs on proper fertilizers to use on ornamental plants and shrubs.

A fertilizer experiment on citrus, having a heavy cover crop, was outlined and carried out in cooperation with L. D. Hemman of Laveen. Commercial fertilizer consisting of calcium nitrate, ammonium phosphate 16-20 and 11-48 and a mixture analyzing 8-10 was used on separate rows and at intervals throughout the year. This experiment was outlined in hopes of arriving at some method of fertilization which would induce heavy production after heavy cover crops had been plowed under. Fertilizers were furnished by commercial firms and applied by Mr. Hemman. Since the fruit has not been harvested at this time, no results can be reported.

It is the intention of the Agent to apply such programs to other crops in cooperation with growers during the coming year. Projects will apply to general field as well as horticultural crops.

An attempt was made to follow up the work with straw disposal this season. At the farm of Orval Knox near Chandler, most of the field

was lister-planted to hegari on grain stubble land, while the lower ends of two borders were plowed as a check. The plowed ground was lister-planted also and this produced the best crop on the field. The work done on Mr. Beall's farm near Mesa showed better results for lister planting, but the conditions were not exactly the same. Mr. Beall planted the plowed land on the level and the crop was corn. Perhaps lister planting after plowing is the answer to the grain straw problem but there are some machinery problems to be worked out before this will become standard practice. Mr. Knox reports that his tractor driver had great difficulty making the first cultivation due to the fact that the steering wheel ahead tended to slip first to one side and then to the other. We are hoping that a long-time experiment will be set up at the Mesa Farm soon.

Project #5 - Irrigation Practice

The Agent has assisted 61 growers of various crops consisting of citrus, ornamentals, deciduous fruit trees, cotton and vegetables in outlining a more efficient irrigation program for the land. In this work the Agent has cooperated with Mr. Harris of the Bureau of Agricultural Engineering, Division of Irrigation and followed along lines suggested by his experimental work. Advice was given regarding the irrigation of stub cotton to growers during the early summer. The members of the Sierra Vista Garden Club were given a talk on irrigation of ornamental plants and shrubs during the year.

Considerable service work has been done in helping growers to check up on their irrigation arrangements. In all cases we have attempted to work out the situation so that the grower can analyze his own problems the next time they arise.

A Field Day was held in January to explain to growers, the schedules of irrigation used by Karl Harris at the Mesa Farm. The recommendations were tried out in a small way this year by one rather large operator with good results and it is expected that during the next year more will try them out.

CROPS

Project #6 - Pure Seed

This project has been handled in the most part by Assistant Agent Hobart with the Agent attending meetings and conferences. At a meeting of cotton pure seed growers, the price for the year 1938 was set at $55.00 per ton for short-staple and $65.00 for long-staple seed. Due to the mild winter, a large portion of the crop was stubbed instead of planted. Very little planting seed of the Acala variety was used and the pure seed growers at the end of the planting season had on hand, 758 tons of planting seed. It was decided to mill 258

tons, leaving the 500 tons to carry over for the 1939 season. As a result, no short staple fields were rogued this year except one small field of a special strain developed by the University of Arizona, Department of Plant Breeding. Fields of Pima and SxP varieties were rogued by the Agent and Assistant Agent Hobart in cooperation with the U. S. Department of Agriculture, at Litchfield and at Kyrene. In October, a conference was held in Tucson to discuss the reorganization of the State Crop Improvement Association. This conference was attended by the Agent and Assistant Agent Hobart.

This project will be stressed during the coming year with the view of producing a higher quality of seed of all varieties and in introducing new adaptable varieties.

The volume of the pure seed handled this year in Maricopa County is shown by the following table:

Chilean Alfalfa	1226 acres
Hegari	1523 "
Double Dwarf Milo	280 "
Baart Wheat	10 "
Vaughn Barley	93
Pima	
SxP	

These figures represented reductions in acreages of hegari and double dwarf milo of which there was a heavy carry-over. No Acala cotton was grown for seed under the program. Acreages of small grains were too low to provide for the industry and efforts are being made to secure cooperation of the milling industry to sponsor this pure seed program.

Small Grain

Since recommendations made for the main body of farm land in Maricopa County do not hold for Buckeye Valley, a cooperative small grain planting was made at the Farm of William Walton, Palo Verde, November 30, 1937. The grain lodged rather badly and it was afterward decided not to harvest. A field day was held on May 12 which was attended by a few interested adults and large groups of Future Farmer boys from Buckeye High School and 4-H Club boys from Palo Verde School. It is intended that a similar planting be made in 1939.

It was hoped that a small grains field day could be arranged at the Mesa Farm but the Agronomy Department did not feel that this would be timely. We did bring the seed dealers to the Farm to go over the small grains grown there, feeling that they constitute a valuable means of educating farmers in the matter of choosing suitable crops for their farms. Representatives of the milling industry were present and the pure seed angle of small grain production was talked over with them at that time.

Sorghums

A fall field crops day was held at the Mesa Farm on October 20. This featured sorghums mainly, but also concerned cotton, soybeans, sugar beets, rotations, alfalfa and general cover crops. This field day was handled by the Agronomy Department and their entire staff was present to care for the various phases of the work presented. In addition, Dr. Chandler of the Botany Department explained the work with sugar beets.

Cotton

Through the efforts of C. J. King of the Bureau of Plant Industry, U.S.Department of Agriculture and E. H. Pressley of the Plant Breeding Department of the University of Arizona a "parent" planting of 20 acres was made on the farm of Leo Ellsworth in the Queen Creek district. It is hoped that Arizona can maintain its own pure seed program independently of California supplies.

Considerable work was done organizing the cotton classing work under the Smith-Doxey Act. The following organizations have been formed without difficulty under the suggested ginner agreement:

Litchfield Pima
Litchfield SxP
Laveen Acala
Chandler Farmers Mutual Acala

The following organizations were formed under a special ginner agreement written by Mr. P. W. Peden of the Western Cotton Products Company:

Chandler-Gilbert Western Acala
Buckeye-Palo Verde Western Acala
Avondale Western Acala

Another organization has been presented for approval under the recent ruling that organizations may be formed without ginner agreement if members state in a letter the reason for refusal to sign a ginner agreement. Another organization around Pettid Gin, Buckeye, has been presented for approval, following the information that gin-yard-cut samples will qualify for the government loan.

Help was rendered Dr. Sherwood of the Agronomy Department in collecting material from various irrigation districts for the quality of lint studies. This is quite important this year of water shortage in some irrigation districts.

Miscellaneous

Cooperative plantings of selected soybean varieties were made on the farms of Joe Fannin northwest of Phoenix and Orval Knox, Chandler. The former was taken by weeds and the latter was planted

rather late for best results. Joe Fannin had one good field of Tokyo which was used for hay purposes and L. G. Vinson had both Tokyo and Laredo. He made a fairly good bean crop for lost heavily from shattering.

Efforts were made to secure a few growers of the Nichols strain of Mexican June corn. All the growers checked had too high a smut count to quality under the rules. An effort will be made to work out arrangements to treat seed so these seed sources will be available under the pure seed program.

Assistant Agent Hobart served as Acting-Secretary of the Arizona Crop Improvement Association for three months between the departure of Roy O. Westeley and the arrival of R. L. Matlock.

The change in policy in respect to grower cooperation mentioned in connection with irrigation tests is equally needed in testing crop varieties and strains.

Project #8 - Weed Eradication

Cooperative tests were set up on two farms during the year to test cropping and cultural methods of eradicating weeds. The cropping method depends on shading out the weed by solid stands of hegari or small grain, while clean cultivation should deplete stored plant food in roots. A white horse nettle test was set up during February on the Farm of W. H. Tripp, under the direction of Weed Specialist Charles H. Davis of the Agronomy Department. A series of plots were set up in April on the farm of John Birchett, East of Tempe for the control of nut grass. It is too soon to say what clean cultivation will do but summer-grown hegari crops have prevented seeding in both cases and appear to have weakened the strength of weed plants.

HORTICULTURE

Project #12 - Pruning

The Agent assisted Mr. F. G. Tate, Extension Horticulturist in holding three demonstrations of pruning deciduous fruit trees and two of like nature were held by Assistant Draper. A total of 72 persons were given instructions in proper methods of pruning fruit trees and ornamental plants.

Project #13 - Pecan Propagation

During April the Agent assisted Mr. Tate, Extension Horticulturist in giving three demonstrations of proper methods of budding and grafting pecans. Fifty-three persons attended and six individuals were given assistance in topworking old trees to better varieties.

Project #14 - Date Propagation

In May, the Agent assisted Mr. R. H. Hilgeman ane Mr. Justin Smith of the Date Experimental Farm at Tempe, in giving a demonstration of offshoot removal and planting and pollination of bearing palms. Thirty persons attended the demonstration and individual assistance was given by the Agent whenever called upon to do so.

Project #14.1 - Citrus Nursery Practice

No meetings of the Citrus Nurserymens' Association were held during the year due to the lack of interest in planting citrus groves. Due to low prices of citrus fruit in the past few years the citrus nursery industry is now at a low ebb and few calls were received during the year for assistance. Some interest in topworking navel trees to other varieties has been manifested and project activity for another year will be along this line.

Miscellaneous Horticulture

The Assistant Agent cooperated with Mr. L. B. Shinn, Marketing Specialist, in a citrus Cost of Production study. Twenty growers have been contacted this fall and have contributed to this study.

Last year's Buckeye Valley Home Beautification Contest stimulated a great deal of interest in rural home improvement. Thirty homes, not in the contest proper, have been given definite assistance along this line. Plans are being made to formulate a continuing contest to carry on their work over a two or three year period.

A portion of the Assistant Agent's time was devoted to becoming familiar with current horticultural projects. From August 15 to November 30, 107 field calls on horticulture were made by the Assistant Agent.

DAIRY

Project #22 - Dairy Herd Improvement

The Maricopa County Herd Improvement Association is gaining membership and prominence in the dairy field of this County. Five representative dairymen of the Valley are in direct charge of the Association, they are: Floyd Sasser, Roy Marshall, J. E. Elliott, C. L. Phillips and Elizabeth Homrighausen.

One new board member is elected annually for a five year term. Mr. Herbert Gates of Kyrene was elected at the annual meeting which was held in the form of a picnic and Dairy Day on November 19, 1938 at the Fairgrounds. About 150 people were in attendance. A lunch was

was served by the Association, after which, a brief business meeting and talk by C. F. Rowe was enjoyed. Three family groups of cattle, Guernseys, Holsteins and Jerseys, showing the transmitting of type and production, were displayed.

Three testers are now employed by the Association, they are: R. F. Williams, F. H. Stout and A. V. Jensen.

The progress of the Association is shown by the Annual Summaries as follows:

Year	No.Cows Tested	# Milk Av. per cow	# Fat Av. per cow
1938	1345*	7740	308.3
1937	640	8361	326.1
1936	555	7859	304.0
1935	669	8840	331.27
1934	756	8257.3	306.3
1933	631	8887.9	325.55
1932	790	8232.6	304.8

* Complete lactations

Further evidence of improved milk and fat production is seen in the study of the top herd taken from the Annual Summaries:

HIGH HERD AVERAGES

Year	No.Cows	Breed	Av.Milk	Av. Fat	Owner
1938	22	R.A.	11846	499.2	L.A.Johnson
1937	52	R.J.	7827.04	390.67	V.L.Wildermuth
1936	17	R.A.	10344.55	426.49	L.A.Johnson
1935					
1934	15.75	R.A.	9584.8	344.48	L.A.Johnson
1933	27.44	R.H.	11786.4	385.97	Coman Holstein Farm
1932	26.8	R.H.	13963.3	440.1	Coman Holstein Farm

Project #22a - Dairy Farm Management

Quite a few farmers have entered the dairy field leaving one-crop farming systems. Most of these new operators are doing this from necessity owing to the failure of cotton in most cases, to keep

their business profitable. These men are often poor farmers and poor dairymen, although a few have made large profits in cotton and are adding a dairy herd in order to balance their system and use feed which the Agricultural Adjustment Program has caused them to produce.

Our best example of a well managed dairy farm is one near Mesa. About half of this ranch is planted to alfalfa for a three year period, the other half produces cotton, corn, small grains and pasturage. This farm has thirteen distinct commodities which are fed or sold for cash. These are, milk or cream, purebred cattle, horses, swine, hay, cotton, grain, dogs, poultry and eggs, turkeys figs and sometimes manure. This farm family has been some twenty years attaining this degree of self-sufficiency. There is exceptional prosperity in evidence, sons are planning college courses and the family is highly regarded in the community.

Permanent pasture has one ardent exponent who is planting an additional acreage this fall. Dallas grass and Rhodes grasses have survived into the fall, burr clover made an excellent showing during the spring and no doubt will re-occur next spring also. The large saving in labor and the better condition of the stock are the main reasons for keeping the mixture.

Corn silage, hegari silage and hegari-soybean silage are the main crops used in furnishing succulent winter dairy feeds. Fields which go out of alfalfa into bermuda grass are usually plowed up and produce very heavy crops of silage.

Dairy farming has been generally regarded as soil-building, due to the fact that vegetable growers have paid premium rents for such lands. This year a dairy ranch which has had livestock on it for about 35 years was leased and before planting the truck croppers applied a considerable amount of complete commercial fertilizer to the entire ranch. It is doubtful if livestock actually enrich a ranch, especially where heavy crops of grain sorghum silage is produced. Too often these ranches sell the manure instead of applying it back to their own land.

Electrified fences are finding widespread use by dairymen. Such wiring around the inside of bull pens are found to be quite effective, though wetting the ground is sometimes necessary to keep the electricity effective. A few bull pens are now constructed of 4 x 4 posts and 1 x 4 lumber where the insides are wired with electrified fence.

One case of this type of fencing is controlling hogs on pasture and also in farrowing pens. The brooder area for the litter is kept enclosed by a single wire, the pigs bed down within and the sow remains entirely outside of this area bedded for the pigs.

Some dairymen, especially those with rather high producing Jersey Cattle, find that in the fall when silage is fed, that production declines very markedly. This is due to the extremely large quantity of bulky feed used, cutting down on good alfalfa hay and often to the advancing lactation periods of the cows with its consequent lowering production.

A second test of seeding soybeans into the hegari which is grown for silage was carried out by the Mission Ranch again this year. The soybeans were estimated to make about 20% of the total tonnage, the crop was extremely heavy and was harvested with great difficulty due to the overloaded harvester. The quality of this feed is better than straight hegari, the soybeans had a fair crop of nearly mature pods, thus increasing the protein and fat content of the feed.

Sugar beet tailings or straw from the threshing and seed recleaning plants have been sold to some feeders of stock. According to analysis, this feed is considerably less valuable than alfalfa straw. Several attempts have been made to feed it to swine with generally disastrous results.

Much cull lettuce and cull cantaloupes, in season, are fed to stock, especially to feeder grades of stock. These feeds, while very high in moisture are relished by stock and no doubt furnish variety that is otherwise missing. Dairymen find lettuce a good adjunct during the winter when succulent feed is otherwise unavailable.

Alfalfa, both hay and pasturage is the best all round feed available and is used by all classes of stockmen. It is very easy to produce a well balanced feed on our irrigated ranches and stay within a sane program of farming.

Sheepmen are especially desirous of alfalfa and grain pasturage, cattlemen are using rougher pasturage such as bermuda, cotton stalks and sudan, finishing in feed lots on silage, hay and concentrates, while the dairyman likes good pasturage of various kinds with alfalfa hay for night corral feeding. The abundance of cottonseed meal and hulls make up an excellent high protein and a rough, cheap filler for cattle, especially.

During the past several years there has been a marked trend of small dairymen to occupy the poorer, near the river bottom, small farms. Usually there is ample bermuda pasturage which is perhaps used to the greatest extent by smaller dairymen. This move is probably also a reflection of the lack of prosperity among dairymen.

Project #23 - Disease Control

The following figures published by the United States Bureau of Animal Industry are indicative of a very active campaign to control Bangs disease in dairy cattle. This work has been going on for the past several years and is optional with the owner of cattle situated within the state.

Agglutination Tests Completed during 49 months,
Dating July 1, 1934 to July 31, 1938

Herds	Cattle	Herds with infection	Total cattle in herds	No. reactor cattle
3679	83,357	882	38,302	3258
Negative	Negative			
27,971	45,055			

Under supervision July 31, 1938

1701 28,519

On waiting list July, 1938

1,000

(A herd consists of one or more cattle. Some dairy herds are now accredited negative)

The health of most herds of all classes of stock is quite good. A few old infestations of cattle ear ticks are prevalent in dairy herds, sheep, dogs, horses and other stock, kept on these particular ranches. Practically all feeder cattle are carefully "ticked" when they arrive at destination.

Sleeping sickness in several herds of horses has claimed a small percentage of animals. These cases are almost entirely handled by vaccines administered by veterinarians.

Many losses of breeding stock of middle to advanced age held on the farms of the Valley are caused by foreign bodies swallowed by the animals. Cases of sand eaten by lambs and sheep and wire eaten by cattle have been found when posted by the Assistant Agent, to cause the death of stock. Mineral deficiencies in heavy producing dairy cows probably also contribute to their untimely death. It requires constant effort to keep most stockmen providing salt and indeed very few ever provide bonemeal or limestone. T.B. is quite low in prevalence, due to the many years of eradication work.

Project #24 - Better & proven Sires

The "proven sire" is now quite commonly referred to by the general dairymen in his search for a bull to use in his dairy herd. Six Maricopa County dairy herds of the Holstein breed are now headed by sons of proven sires. It so happens that the Colony Farm, owned and operated by the Province of British Columbia, Canada, has supplied these animals. These bulls are from the most completely tested families of cattle available. This line of pedigrees is remarkable in the consistency of production made by all the females within the family.

Several dairymen are now starting a program of "artificial insemination" using "Ormsby Patriarch" (whose picture is in another section of this report) as the proven sire. It is the goal of this group to produce several hundred offspring from this outstanding bull during the next breeding season. Dr. W. J. Pistor of the Experiment Station Staff will instruct these practical men in the work. This topic has been discussed by members of the Herd Improvement Association and others, including veterinarians, for about a year and now it is materializing into direct results.

This same type of work has great appeal to the Pure Bred Hereford Breeders, although the herds of cattle involved are widely scattered and many of them less tractable than dairy cattle.

Owing to the demand for fall freshened cows, a very heavy breeding season is in use which makes artificial breeding much more inviting.

LIVESTOCK

Project #19 - Feeding Beef Cattle

Beef cattle finishing has had a slight set-back during the past year. Losses sustained by feeders have caused them to buy less feed, buy cattle much closer and some few have large feed supplies in storage and are still waiting to buy cattle more advantageously or try to sell the feed to others.

Paying prices by cattle feeders during the fall of 1938 are: Hegari silage $2.50 per ton, Hay $7.50, grain sorghums $16.00, Barley $21.00, Cottonseed meal $25.00.

With the above prices for feed, the finishing of cattle looks attractive but with the absence of spread between feeders and fat cattle, there is lacking the safety and usual profit of the business. Many Arizona feeder cattle are this year going to eastern feeders with very few out of state cattle coming into Arizona feed lots.

Project #20 - Sheep Feeding

The usual number of sheep (about 100,000 head) are now lambing on the irrigated farm pastures of the Salt River Valley. The drive to the Valley was made over very dry desert dust lanes and in some cases, three to four days without water on the trail was the experience. The desert water holes are now at a very low stage. The winter saw one flock of about one thousand head, water at the Cave Creek dam. Many ewes were mired into mud so deeply that the herders required the use of a saddle horse to pull them out. Within a week after arrival, the lambs commence coming. The recovery of the flock is remarkable after a few days rest on good fresh feed. These early lambs are remarkably fast growers, largely because the ewes are on high protein pasturage and give an abundance of milk. Many lambs will go to market at 120 to 130 days of age at weights of about 80 lbs.

Mr. Johnson of Hassayampa, has for several years, successfully carried his breeding flocks the year around in the Valley. Mr. Johnson usually makes his replacements from sheep which have been carried in the Yuma or Imperial Valleys.

Wool worms and screw worm control has been a serious problem with flocks which are carried here throughout the summer. Mr. Doenier of the U. S. Bureau of Animal Industry has done much with this problem since he has been detailed to spend his entire time in the study of worm control and animal parasites.

POULTRY

Project #30 - Poultry Improvement

Hatcherymen and poultry producers are working more closely than ever. A delegation of about 30 men and women attended a two day poultry school at Tucson during early September. As a result of this meeting, several men are well qualified to cull, blood test, band and segregate the breeding flocks of producers. This work is well along now with several men working steadily at it. The project finances itself through the sale of leg bands and antigen.

Mr. J. Albert Liggett is Chairmen of the Board of Directors for the current year. There is only an occasional hatchery that is not cooperating with the program.

A lot of interest is shown by poultrymen in trying to improve their situation as is indicated in calls upon the office for assistance. A very heavy demand means many farm calls and contacts to assist many of these people who are beginning and are of small means.

There is a slight trend by a few hatcherymen to develop the fryer business. Perhaps the sale of equipment and chicks is the reason for their efforts. A few beginners have made quite an investment in equipment before learning much about the business.

Project #30a - Poultry Disease Control

Poultry disease outbreaks are quite varied and general. With slight increases in chickens and turkeys grown this year, we find a great many small flocks poorly cared for and in some cases, a heavy loss is experienced from pox, infectious and nutritional colds, with bronchitis appearing in a few instances. Since pox vaccination is the exception, rather than the common practice, a lot of this loss occurs in the fall and winter in flocks of summer hatched chicks of low vitality.

Most of the work done with poultry disease control is of individual service nature, office, telephone and farm calls.

Since poultry-keeping is a minor side line with the majority, the birds are generally poorly fed and poorly managed.

Several commercial poultry tonic or remedy salesmen are continually diagnosing troubles which call for a considerable amount of medicine and course of treatment. These men do not as a rule, make repeat calls.

A large flock of pullets last spring had been in very heavy production when the warm weather arrived they became sick and ceased laying. Cantaloupes were then in season and by a generous use of them, the birds were brought back into condition, feed consumption picked up and many birds were saved which looked hopeless at the time treatment was recommended.

Most of the poultry ills are the direct result of improper feeding. The lack of fresh greens or pasturage is the usual weak-link in the system.

Turkey production made quite a come-back from last year, especially so in the case of the flock pictured in the addendum. This ranch had about 60% losses a year ago. By change of management, a thorough cleanup and shifting of the pens and runs, the most profitable and largest flock in the state is on the ranch today.

MISCELLANEOUS

Project #15 - Insect Pest & Parasite Control

The Agent has been responsible for carrying out the grasshopper control program in the County. With materials, bran and sodium arsenite furnished by the U. S. Department of Agriculture and funds by the Maricopa County Board of Supervisors, a central mixing station was opened in May. This station was under the

supervision of a man experienced in this line of work and established in the warehouse of a local firm. In September it became necessary to move the station in order to facilitate the work and a suitable place was rented near the Extension Service Building until November 1, when it was closed for the season. In order to have sufficient funds to carry on the mixing throughout the season, a charge of twenty-five cents per sack of one hundred pounds of wet mash was at first assessed against the consumer and later reduced to fifteen cents per sack. All mash was put in bags stenciled "POISON" and giving the antidote in case of poisoning of humans. Each individual obtaining poison mash was required to sign a responsibility card for the same. A total of 155 tons of wet mash was issued to 225 individuals and applied to 17,350 acres of general crops. The total expenditure was $881.64, of which $584.64 was paid by consumers and $297.00 from the fund by the Supervisors. This project will continue during the coming year with materials carried over.

Insects observed damaging crops or property were aphis on citrus, ash, cotton, Irish potatoes, melons and ornamental plants; borers in citrus, ornamental plants, maize, deciduous fruit trees and Irish potatoes, cutworms in cotton, alfalfa, vegetables and ornamental plants; caterpillars in ash and cottonwood; grasshoppers on general crops; mealy bugs on cotton; bollworms in cotton; plant bugs on cotton; webworms on sugar beets; loopers on lettuce, cauliflower and cabbage; termites and ants in dwelling; ants on general crops; pinworms on tomatoes; leafhoppers on ornamentals and grapes; twelve-spotted beetled on melons; striped cucumber beetles on melons; dried fruit beetles in figs; Green June beetles on deciduous fruits and dates and cottony cushion scale on ornamentals.

The Agent spoke to the 110 members of the Buckeye Farm Bureau on the control of plant bugs in cotton, using the methods developed by the U. S. Department of Agriculture.

Due to the warm winter of 1937-38, great numbers of insects damaging alfalfa, cotton and perhaps sugar beets were present in large numbers. Pima cotton was definitely damaged this past season, although it previously had been thought more resistent to attack than short staple. Experimental sprayings were made throughout the Valley and it is anticipated that greater interest will be manifested next year.

A stalk borer working in double dwarf milo was found near Chandler and submitted to Mr. Tinkham of the Entomology Department for identification and study. We are watching this infestation with great interest since it caused such great economic loss in this case.

Project #16 - Rodent Control

The Agent assisted Mr. F. S. Rudolph of the U. S. Biological Survey in giving four demonstrations to 63 persons present of proper methods of gopher control. An attempt will be made during the coming year to conduct a county-wide gopher control program in cooperation with the Biological Survey and some other agency to sponsor the project.

Project #23 - Disease Control (Plants)

The Agent cooperated with Mr. Hilgeman of the Horticultural Department, University of Arizona in spraying a number of trees at the Tal-wi-wi Ranch with di-nitrol in an attempt to prevent fruit losses from delayed foliation. The Agent assisted Dr. R. B. Streets of the Plant Pathology Department, University of Arizona and H. F. Tate in giving a demonstration of the proper method of controlling scaly bark of citrus. Twenty persons attended and three others were given assistance in this control.

The Agent assisted Dr. Streets in making basins around trees and applying manure and commercial fertilizers to citrus in the Duncan Grove in an effort to control a fusarium which had killed several large tangerine trees. The Agent cooperated with Messrs. Cavanaugh and Taylor of the Bureau of Entomology and Plant Quarantine in removing some 2500 peach trees from the Seargeant orchard. These trees were removed as part of the program to eradicate the peach mosaic disease in the Western States.

Diseases noted were root rot on alfalfa, cotton, deciduous trees and ornamental plants; gummosis of citrus and apricot; heart rot of ornamental plms; fusarium on citrus and cantaloupes; die-back of citrus, sclerotinia on ornamental plants; frazzle of eucalyptus; mildew on rose and grapes, nematodes on melons; bacterial rot on celery; Southern sclerotial rot of sugar beets; fire blight on pears and ornamentals; dry root rot on citrus; crown gall on deciduous fruits and ornamentals; rosette on pecans; chlorosis of ornamentals and alkali injury on carrots.

Assistant Hobart helped the Bureau of Plant Industry men to locate a cooperator in the Lehi district for work on root rot control. Mr. Willard Nelson offered to work with the U. S. Department men on his farm which is located in a section which has a great deal of root rot.

Sorghum kernel smut was observed during sorghum inspection on the farm of A. G. King in the Roosevelt Irrigation District. It was found on Sooner Milo and the seed from which it was planted came from New Mexico.

Project #26 - Economic Survey

The survey of feeder cattle, sheep and hay on hand was conducted during December. A copy will be found attached to this report.

The usual crop survey made from reports of secretaries of irrigation districts was made and many copies distributed in the County. This is considered a helpful summary by people needing information about acreages. A copy is attached to the report, together with a copy of the 1937 report which was not included last year.

Aid was given Dr. E. D. Tetreau in his check-up of incomes of cotton pickers, their races and points of origin, by securing cooperators among farmers who are keeping the records he wants.

The cooperative survey of 1937 between the U. S. Department of Agriculture and the Arizona Extension Service on reasons for low yields of Pima cotton was completed late in February and reports were made at the meeting of the Arizona Pima Cotton Club held March 15. A new survey was undertaken in 1938 with inclusion of the Agricultural Experiment Station as a cooperator. Monthly check-ups of entry fields in the Arizona Pima Cotton Club were made during the growing season and in addition figures on yields will be secured through the cooperation of the Maricopa County Agricultural Conservation Association, the gins and the growers. Considerable damage was sustained in most of of these fields from insects. Studies of the lint are being made in the laboratory at the University and it is hoped that considerable information will be secured.

4-H CLUB WORK

Project #29 - Boys and Girls 4-H Club Work

Organization - Assistant Agent Draper has been directly responsible for Agricultural 4-H Club work and for general supervision over the County 4-H Program and all county-wide events. Home Economics 4-H Club Work has been directly supervised by the Assistant Home Demonstration Agent. Beginning with October 1, 1938, Mr. Chas. Cochran, Assistant County AGricultural Agent assumed responsibility for the County 4-H Program. Since that time, Assistant Agent Draper has been assisting Mr. Cochran with the 4-H program and at the same time, has been spending an increasing proportion of his time on adult horticultural work. All horticultural project work for this year has been reported in the Agent's portion of the report, the Assistant Agent having taken care of a large portion of the field calls and spent some time in becoming familiar with current horticultural work.

Statistical - The Agricultural 4-H program included 556 individual boys enrolled with 465 completing and 70 individual girls enrolled with 59 completing. The County totals being 626 enrolled and 524 completed or a percentage completion of 83.6%. The total enrollment for the year previous was 661 with 528 completing or 79.8%. The

work was conducted in 26 communities as compared with 29 for the year previous. A total of 46 leaders assisted in supervising the 694 individual projects in poultry, dairy, rabbits, flower garden, vegetable garden, horse, sheep, swine, camp, nature study, leadership, farm management, rural home improvement, rural electrification and beef. These projects were organized in 48 standard and 47 non-standard clubs. In many communities where only 2 or 3 boys are enrolled in one type of project, a number of these technically designated non-standard clubs are organized together under one leader, into what might be considered a standard club. On this basis the number of standard clubs would be 52, non-standard clubs would be 7.

Program and Goals - The 4-H program includes a large variety of activities, many of which are of a countywide nature. Each of these are separate and distinct and yet all are tied into a general plan for promoting the best interest of the 4-H program as a unit. Each one of these activities will be reported on separately in this report. In the general program, a special effort was made to stress the applied phases of the work in the field. To this end, 35 demonstrations were given in gardening, citrus, dairy and poultry; 12 project tours were conducted and 16 field trips conducted. In addition to these, individual projects were visited during the year by the Agent and local leader.

The general goals set up were as follows: 80% completion, 40 demonstrations and 15 demonstrations teams. The completions this year were 83.6% while only 35 demonstrations were given by the Agent, yet many more not reported were given by the boys, leaders and parents. Seven judging teams were trained for State and National competitions. Seven demonstration teams entered County competition in the Junior division and three in the Senior division. Several teams failed to complete and did not participate. By comparison with last year, four field days and 4 project tours were held, also five demonstrations and five judging teams were trained.

The general 4-H good-will has been increased and the County organization greatly strengthened during the past three years. The leadership program was reorganized and a College Training class jointly sponsored by the University of Arizona and the Arizona State Teachers College now starting its third year of activity, has replaced the local high school leaders club of several years back. The pure bred breeders association and each of the dairy breed associations have been brought into a closer contact with the 4-H program through active cooperation with the dairy department of the County fair. Each association placed a special exhibit, featuring their breed. These exhibits were used in the livestock judging contests. An effort has been made to discourage camp, nature study and similar clubs and to encourage substantial income producing livestock, poultry or garden projects. Some progress has been made in this direction as is shown

by the following figures: In 1935-36 there were 60 enrolled in camp projects, in 1936-37 there were 46 enrolled and in 1937-38 there were 48. This is probably as low as this enrollment will ever go without completly losing three districts. Transient families and general lack of financial facilities make livestock projects impossible in these three districts.

County Activities

Publicity - Splendid cooperation has been received by local papers and radio stations in 4-H publicity work. Twelve radio programs were given and a semi-monthly column in the Arizona Producer, the State's leading farm publication was carried in addition to timely news items in the Arizona Republic and Gazette, the two daily papers. Samples of publicity are attached. A monthly news letter to each 4-H club was started by the County office in December and continued through March. This was most enthusiastically received by leaders and club members and should be continued. A year ago, eight radio programs were given with about the same newspaper publicity as for this year.

County 4-H Club Fair - The 12th Annual County 4-H Fair was held April 8 - 9 at Tempe in cooperation with the Arizona State Teachers College. The fair is twofold in purpose: an achievement fair for 4-H exhibits and a training school for its Junior personnel. The college leadership club assumes a major role in supplying talent for the major offices. Two complete sets of personnel are used: one of College age and the other of grade school age. The fair is run in its entirety by young people with council and advice from the County office and a County 4-H Fair Board, composed of 4-H Leaders and farm people. This board is elected by 4-H Leaders and is advisory in nature.

This year's fair with its 12 departments, 1722 exhibits and approximately 1000 exhibitors (does not include contest entries) was one of the best organized and smoothest running fairs since the Assistant Agent took charge of the program three years ago. It was about the same size as last year although some departments showed considerable growth. The dairy department with 96 4-H exhibits was outstanding in quantity and in quality. The County Farm Bureau picnic held in connection with the Fair was attended by larger crowds and with more interest manifested than for several years.

The County livestock judging events are held in connection with the fair each year. This year 74 boys participated in the Junior events, 15 in the Senior dairy contest and 9 in the horse judging contest. It is from these contests that teams for state and national competition are selected.

Other Fairs - The 4-H Clubs of the west half of the County played prominent part in the Third annual Buckeye Valley Junior Fair which was held in April at Buckeye, Arizona. Approximately 500 exhibits were shown at this fair.

Another fair which is in its first year of growth but which promises to be of increasing importance was the Washington Country 4-H Fair. The combined 4-H Clubs in the district (poultry, dairy rabbit, vegetable and flower garden) staged the fair with the assistance of the local Parent Teachers Association, approximately 100 exhibits being shown by an enrollment of 40 members.

Community Achievement exhibits were held at Roosevelt, Lehi and Glendale.

Leadership - The College 4-H Leadership Club completed its second years work with 28 enrolled and 12 completing. While the percent completed was low, this is by no means an index to the amount of work done. The club sponsored in addition to its semi-monthly study and discussion meetings, the Third Annual Fellowship Banquet at Rural School for 95 club members and leaders, a 4-H Fair broadcast, lead a number of Junior Clubs and took prominent part in the County 4-H Club Fair.

Baseball Tournament - As a part of the recreational activities of the 4-H clubs, a county softball tournament is held each year. The College 4-H leaders club is largely responsible for supervising the games and for much of the routine assistance needed. This year the tournament was held in March with 8 girls teams and 8 boys teams entering. These teams represented 10 different communities from widely separated parts of the County. One team drove 51 miles each way to attend the event.

Fellowship Banquet - The Third Annual Fellowship banquet was held in March with 95 club members and leaders in attendance. The event is staged at cost, 25¢ per plate, and was attended by representatives from the Tempe, Rural and Kyrene districts. The original purpose of the event was to provide a get-together for the rank and file of 4-H members in the districts.

Citrus Judging Contest - The Arizona State Citrus Fair which was held in March, sponsors a citrus judging contest for boys and girls. the 4-H clubs entered 5 teams in the Junior division and 1 in the Senior division. Interest was low in this event this year because of the close proximity of the event to other County 4-H events.

Pig Program - In order to stimulate interest in livestock projects, a plan was worked out to assist boys in the purchase of the

original animal. The plan was first put into effect with hogs and if successful, could well be extended to include dairy, beef and sheep, with slight changes in the contract. In brief, a merchant or other interested party loaned sufficient funds to purchase a young gilt pig. The club member who accepted the pig signed a contract, contributed $1.00 to an insurance fund and agreed to care for the animal for one year and to breed it to a recommended boar. At the end of the year he had the privilege of paying cash for the original animal as specified in the contract or to give the best gilt from his projects first litter to the holder of his contract. Ten boys signed contracts with four business firms and all finished their first year. These four firms loaned a total of $44.00. All have agreed to leave their money in to help other boys get started on similar projects next year.

Beef Program - A county beef program was started during the summer months. While much of original foundation work was done by the Assistant Agent during July and August, the project did not really get definitely underway until Mr. Cochran took it over during late September. A more complete statement will be found in his report.

State 4-H Round-up - Maricopa County was represented at the State Roundup by 75 club members and 7 leaders. In the Agricultural field, it was represented by 3 judging teams in the Junior division and 3 in the Senior division, also by one Junior and one Senior demonstration team. Transportation was provided by Greyhound Stages and private cars. This is the largest delegation this county has sent to the State meeting at Tucson for several years. Delegates represent 24 different communities over the County.

National Contests - Maricopa County 4-H Agricultural Club members participated in 7 National contests: National Dairy Show judging and demonstration contests, Santa Fe Record contest; Rural Electrification, Rural Home Improvement, Farm Accounting contest, Thomas E. Wilson meat animal contest and the Poultry Tribune Record contest. State winners were placed in the Dairy Show judging and demonstration contest, Santa Fe, Rural Electrification and Rural Home Improvement contests. Two boys, Albert McDowell of Mesa and Vernon Richardson of Tempe, represented this County at the National Club Congress in Chicago. Five boys reprgsented the County and State at the National Dairy Show in Columbus, Ohio. The judging team placed eleventh as a team.

4-H Projects - Standard 4-H projects were supervised in dairy, poultry, vegetable and flower gardens, rabbit, sheep, farm management, swine, horse, camp, beef and nature study. The bulk of the enrollment being in dairy, 153 projects, vegetable gardens, 160 projects, and poultry, 120 projects. Jerseys and Holsteins represent the most popular breeds although a few members have the Ayrshire breed. Approximately one-third of the 4-H dairy projects are of registered animals.

Poultry projects are predominantly White Leghorn and Rhode Island Reds. Garden projects are in most cases, individual gardens in connection with a school garden. These school garden projects were at Roosevelt, Tempe and Gilbert. Each member has a definite plot of ground for which he is responsible. All have been highly successful for a number of years.

Assistant Agent Cochran reported for duty on August 8. On September 5 he took two weeks of his annual leave and in the meantime, made a trip to the northern counties on a Beef Project survey, returning to Maricopa County on September 28.

During the short time the Assistant Agent has been in the County he has made many contacts and has done considerable survey work connected with 4-H Club work in the County. He met with 42 leaders in 30 schools as well as the 30 principals of the schools and talked about prospects for the calendar year of 1937-38 of club work in that particular school.

The estimated enrollment for 4-H Club members for the County this year will be in round figures, 400. To date, enrollment blanks that have come in are 8 in number with 127 enrolled. The Assistant Agent has met with and organized 11 clubs with a total of 275 in attendance. Of this number, 98% will remain in club work.

Meetings - The Assistant Agent has attended 36 meetings connected with club work and other projects, mainly dairying with an attendance of 1,739 present. The Assistant Agent has made several field trips with various clubs, namely 3 Beef Club trips with a total attendance of 29. These project tours were for the purpose of selecting calves for projects and checking with the boys on progress made and assistance given in the form of advice on feeds and feeding. Two dairy tours were made, one with the Holstein Association in the form of making visits to various ranches and observing the herds. It is considered that this type of contact is important in that the Assistant Agent was given an opportunity to acquaint himself with the Holstein cattle situation in the County. One swine field trip was held at which time, pigs were selected for club members for their pig project. Fifteen boys were in attendance at this meeting.

Radio - The Assistant Agent has conducted two radio broadcasts and made all arrangements for the program with 4-H Club members to do the broadcasting. Besides the two broadcasts made by Maricopa 4-H Club members, the Assistant Agent assisted the State Club Leader in making his Achievement Day broadcast. It was the Assistant Agent's duty to prepare them for the broadcast.

College Club - The Assistant Agent has assisted the College Club in organizing and forming their club this year. The enrollment to date is 28 members and every member is quite interested in active

participation in all 4-H Club activities. The College Club has a very active part in the Annual 4-H Fair each year. These 28 individuals enrolled represent the following years of active work in club work: 1 - 10 years; 3-9 years; 8 - 8 years; 4 - 7 years; 6 - 6 years and 6 - 5 years.

Livestock - Considerable time has been spent in the livestock field in the form of securing and selecting calves for the beef projects, assisting in making delivery on these calves and furnishing the boys advice on feeding. Besides the Beef Program, considerable time has been spent with hog breeders to arrange for the purchase of pigs for club members. Merchants have been contacted to assist the boys in the form of making financial aid for the boys to purchase the pigs from breeders, regular contracts being drawn up between the boy and the merchant with a stipulated interest to be paid at the end of the year when the project is complete.

To date, there are 8 beef calves in the hands of club members which are being fitted to be shown at the Tudson Livestock Show in March. Before the enrollment is complete for the fall, there is a possibility of others coming in. The tentative number of swine club members for this year will be about 20. Some interest has been shown in the fat hog classes and two boys in particular at the time of this report, will fatten hogs to be shown at the Tempe Fair and sold at auction.

It is the Assistant Agent's desire to meet with all 4-H clubs at least twice, if possible three times, during the winter months. At such time the Assistant will assistaand attempt to teach the boys how to judge the various types of livestock in which they are interested. It is the desire to develop a good Dairy Judging Team through the spring and summer to take to the National Dairy Show in October of 1939.

In meeting with these clubs, the use of slides and moving pictures will be used as much as possible. The slides have been ordered from the state office and the Assistant Agent expects delivery on them in the near future. These slides pertain to various classes of livestock, beef, sheep, swine, horses and dairy cattle. In most cases there is a slide on the various breeds, on the type of livestock and judging of that respective breed. It is hoped that a good foundation for judging can be given to the club members by the use of these slides with appropriate comments at the time of showing. It is the Assistant's desire to arrange for a field day at some large dairy in the Valley and have a preliminary field trip and judging contest.

The results of the calendar year for 4-H Club work for 1937-38 will be reported by Assistant Draper, whom the Assistant Mr. Cochran, is relieving in 4-H Club work. His report will carry detailed statistical data up to October 1.

ORGANIZATION

Maricopa County Farm Bureau

The Agent or some member of the staff attended the twelve regular meetings of the Maricopa County Farm Bureau and acted as Secretary. The County Agent's budget was presented by the Agent to this organization and approved after suggested changes and additions were made. Talks were given by the Agent to 11 Farm Bureau locals on cotton pest control and on the 1938 Agricultural Adjustment Program. The two-day State Farm Bureau meeting held in Phoenix and a dinner meeting of the County Farm Bureau was attended by the Agent. A meeting with the Cotton Division of the County Farm Bureau with Mr. D. C. George, State Entomologist and Mr. Sidney D. Smith of the Bureau of Entomology, to discuss the Pink Bollworm situation was arranged by the Agent.

Farm Security Administration

The Agent attended 9 meetings of the County Loan Committee to consider loan applications and has kept in close touch with this department throughout the year, advising on general farm practices. In February, the Agent attended a conference held in Phoenix on the Farm Tenancy Act which was explained by a representative from Washington and one day was spent with the Local Director and committee in selecting farms to be purchased under this act.

Assistant Agent Hobart served on an appraisal committee, evaluating the assets of the Farm Security Administration in Maricopa County preparatory to turning over this property to a corporation organized to operate it.

Agricultural Conservation Program

The Agent has met with the County Committee in all meetings when his assistance or advise has been asked and attended all conferences with State and Federal representatives on the provisions of the program. In February a general meeting was scheduled, at which Messrs Farrell and Schwartz from Washington explained the provisions of the 1938 program to over 250 farmers. On March 12, seven district meetings were held at which the program was again explained and at the same places, the election of officers for the year and the vote by cotton farmers on the marketing quota was held. A great majority of the growers voted for the marketing quota. On March 14th the newly elected community committeemen met in the County Agent's office and elected the following members of the County Committee: J. M. Cook, Chairman, C. Alfred Pine, Vice-Chairman, Nat M. Dysart, Member, I. W. Moore, First Alternate and C. B. Laird, Second Alternate, Mr. Laird representing the cattlemen of the County. The County Agent was elected

Secretary and George Tatum, Assistant Secretary and Treasurer. On May 24, L. B. Smith succeeded Mr. Tatum who was transferred to the State Office.

The work of this committee has been very exacting in holding hearings regarding combinations of work sheets, setting acreage quotas and yields for cotton and wheat, issuing marketing cards for both long and short staple cotton, accepting applications for subsidy payments in the 1937 cotton crop and application for the 1938 Agricultural Conservation payment. The Agent spent two days in Tucson attending conferences on this program.

Assistant Agent Hobart helped in conducting the election of Mesa district local committees and endeavored to explain the 1938 program at a meeting held in Franklin School, Mesa, on March 12.

Agricultural Production Credit Association

The Agent has cooperated with this association in every way, especially in giving advice on the provisions of the 1938 Agricultural Conservation Program. The Annual Meeting held in Phoenix in January, was attended by the Agent.

Farmers Union

This organization has not been very active during the year but the Agent spoke to the Roosevelt Local on the provisions of the Agricultural Conservation Program.

National Youth Administration

The program of this agency is being carried out in this county in cooperation with the Arizona State Teachers College at Tempe. The Agent attended a conference held at that institution in June at which Miss Jane Rider and Dr. Judd explained the program. The Agent has been consulted on the operation of the plan.

Radio

Two radio talks were given by the Agent over station KOY at Phoenix, once at the request of the Central Arizona Cattle Feeders Association in the campaign to promote the use of more beef and the other on the 1938 Agricultural Conservation Program.

Service Clubs

The Agent attended the annual Farmers Day meeting of the Phoenix Rotary Club at which Director Pickrell spoke and spoke to the following clubs on the cotton situation, Phoenix Hiram Club, Glendale Rotary Club and Mesa Rotary Club.

Pima High Yield Club

The functions of the Pima High Yield Club were broadened at a meeting of the Pima cotton growers held January 27, 1937 and the Arizona Pima Cotton Club became, in the words of the Arizona Producer, "an aggressive general organization for the protection and advancement of Arizona's Long Staple cotton industry." The promotional work behind this change was done by this office and Assistant Agent Hobartbecame its first secretary.

The first results of charging the officers with a definite responsibility came after a schedule of processing taxes affecting Pima cotton were mentioned in the Congressional Record, and trade agreements seemed likely to admit Egyptian cotton on the free list. Information and legal opinions gathered at that time through the cooperation of the Arizona State Farm Bureau Federation and Arizona's Congressional leaders gave the officers material to work with in the fall of 1938 when low prices were current and processing taxes appeared to be near. Efforts are being made to draft a separate Agricultural Adjustment Program for Pima cotton that will fit its differing yields, marketing, fertility needs and irrigation requirements.

Arizona Jersey Cattle Club

The Jersey Cattle Club at its annual meeting, elected Mr. D. W. Hulet President, Mrs. Paul Wiggin, Vice-President and Mr. C. A. Yeoman, Secretary-Treasurer. The club has held evening meetings with a good attendance at each. The Club is actively sponsoring 4-H Club work.

A Parish Show is scheduled for December 29, a one-day affair which will bring together a large group of animals of this breed to the dairy building of the State Fair. An internationally known judge enroute to the Rose Tournament, will stop off and do a complimentary job of judging for the Jersey breeders. Lunch will be served by the ladies of the Club and it should mark the beginning of an annual dairy show if not the resumption of the State Fair.

The goal of the Jersey Club is to make this valley a breeding area for top Jersey cattle, available by the carload.

Pure Bred Breeders Association

The officers of the Pure Bred Breeders Association have been active in trying to line up a regular State Fair program at which all kinds of livestock, agricultural products and farm machinery would be on display. The stumbling block to date is the lack of an appropriation of money by the legislature with which to do the job.

Holstein-Friesian Cattle Club

Mr. Freeman Wood of Tucson is now President of this club. Two well attended field tours have been held with about 35 people in

attendance at each tour. Following each tour a dinner meeting in the evening has always been well attended by breeders. Annually a delegate goes to the breed convention in Chicago or some Eastern City.

It is the goal of this club to send a group of cattle to enter a group of cattle in the National Dairy Exposition which will convene next October in San Francisco.

Arizona Ayrshire Club Organizes

During February the breeders of Ayrshires held a tour, a luncheon and an evening dinner. During the luncheon the Club was organized with Mr. L. A. Johnson, President; Alex McMinn, Vice-President and Mrs. L. J. Lewis, Secretary-Treasurer. This club was very active at the 4-H Club Fair, assisting members in showing their stock. A basket picnic was held during the Spring 4-H Show.

A member of this club has set a new record by paying about $550.00 for a heifer calf shipped in from Strathglass Farm, Port Chester, N. Y.

Arizona Turkey Growers Association

The Arizona Turkey Growers Association is in a very inactive state. The old officers are still in charge although some have ceased raising turkeys. Since turkey growers are producing turkeys as a minor sideline, it is doubtful if the Association can do very much in the way of active operation.

Arizona ships in many more turkeys than are shipped out. The fact that the large toms are marketed almost wholly to restaurant and hotel trade, gives some relief by shipping these away, however, the returns for these large birds is rather small when handled by the Association due to its small volume and rather large over-head.

Miscellaneous Activities

The Agent has spoken to four garden clubs on general care to ornamentals, attended the Future Farmers Fair at Phoenix, 4-H Fair at Buckeye and Tempe, the annual meeting of the Buckeye Garden Club and Flower Show, meetings of the Pima Cotton Club and Associated Cotton Producers, cooperated with the State Entomologist's office in working out quarantine measures, with Dr. W. A. Frazier in sweet potato hot-bed experiments at the Mesa Farm, attended a meeting in the Governor's office at which Dr. Atkinson reported on the regional laboratory situation, participated in a tour of the Roosevelt Watershed area to check on work done by Forestry Service, attended the annual Feeder Cattle Day and Field Crops Day meetings held at the Mesa Farm and a two-day conference in Los Angeles on land-use planning at which representatives of California, Nevada, New Mexico and Arizona considered the problem.

VI. OUTLOOK AND RECOMMENDATIONS, INDLUDING SUGGESTED PROGRAM OF WORK FOR NEXT YEAR.

The activities of the Extension Service will be carried on in a manner similar to that of past years, however, an attempt will be made to curtail the individual service which has taken a great portion of the time of the staff in past years. To overcome this tendency, more demonstrations will be established in an attempt to get information to a greater number of people. During the past few years it has been difficult to get good attendance at any demonstrations. Emphasis will be placed this year, on projects which are timely and likely to accrue most benefit to the farmers.

The Agricultural Conservation Program will require considerable time of the Agent but Assistant Agents and Specialists will be free to carry on the projects for which they are responsible.

The projects which appear at this time to require most attention are those in irrigation practice, fertilization practice, dairying and poultry, weed eradication, pure seed, insect pest control, disease control and production cost studies. A study of the long-staple cotton industry is to be made with the view of ascertaining the proper type of long-staple cotton to be grown to best supply the needs of the mills in this County. This study will be carried on in cooperation with the Pima Cotton Club, the State Experiment Station and Federal agencies concerned.

The Pure Seed program will be strengthened, in order to produce a higher quality of seed and to lessen the possibility of mixing of pure seed before it gets into the hands of the consumer.

The citrus industry is at a low ebb and cultural practices designed to lower costs of operation and increase production will be advocated. This can be accomplished only by work with the individual grower in cooperation with the Arizona Experiment Station.

Demonstration plots of fertilizers on general crops will be made, hoping that production may be increased on the smaller farms which do not contain enough land to successfully carry on an adequate crop rotation designed to build up the land.

Insect pest control, especially the control of plant bugs in cotton, sugar beets and alfalfa for seed, through the use of sulfur, will be advocated and test plots established.

Weed eradication plots have been established and will be used as result demonstrations in cooperation with Mr. Davis of the

University of Arizona, Experiment Station.

The grounds surrounding the Extension Service Building will be landscaped and used somewhat as a demonstration plot. This program can now be carried out since curbs and sidewalks have been recently installed through the W.P.A. at a very reasonable cost. It is thought that a W. P.A. Project can be drawn up for this landscaping project, thereby cutting costs to a minimum.

The Agent will continue his work largely in carrying out the executive part of the County program, delegating responsibility for certain projects to the various Assistant Agents. By following this plan, it is thought that closer supervision of the activities of the County Committee will result in facilitating the Conservation Program in the County.

Close cooperation with the Farm Bureau, the University of Arizona Experiment Station, U. S. Experiment Station and other Federal agencies and all farmer organization in agricultural lines will be followed.

SUMMARY AND OUTLOOK OF PROJECTS

Project #1 - Alkali Reclamation

Methods of reclaiming alkali lands are rather well worked out and generally known. Work on lands that tolerate stands but do not make maximum yields, is necessary and timely. Careful analysis of irrigation arrangements under marginal conditions of alkali in land or irrigation water would turn many farms now losing money into profitable units.

Project #2 - Fertilization Practice

Continuation of grain straw disposal work involved use of machine methods of listing and cultivation this season.

Although need for basic phosphate fertilization is recognized, it seems advisable to stress use of organic fertilizers in the form of by-products of existing livestock programs or winter grown cover crops because grown with a minimum of irrigation water.

Project #5 - Irrigation Practice

Irrigation work consisted chiefly of promoting use of recommendations of Karl Harris for watering Pima Cotton. Briefly, this consists of rather early initial irrigation after planting, plentiful water supplies to late summer, and withholding of water late when Pima cotton tends to over-grow. Considerable individual service work was done in helping growers to evaluate present irrigation arrangements.

It is hoped that several demonstrations of effective irrigation arrangements may be set up during the year in various parts of the County. In order to make effective the statement of policy outlined last spring by the College of Agriculture, it will be necessary that the Extension Service extend to the grower, similar cooperation already offered by the Experiment Station. The grower makes a contribution to a mutual effort, of land, water and management in carrying out an outline supplied by the Extension Service. The Extension Service should, in addition, be prepared to finance labor required to carry out the program in excess of ordinary farm practice.

Project #6 - Pure Seed

Pure seed volume handled in the County dropped to about half of the previous year for hegari and double dwarf milo, was almost non-existent for wheat and held about constant for alfalfa seed.

A cooperative small grains planting was made on the farm of William Walton in the Buckeye Valley, to work out small grain varieties suitable to a district differing from the Salt River Valley in alkalinity, water supply and cropping scheme. Lodging ruined the results but the test will be repeated and mistakes made the first year will be rectified.

Field days were arranged for farmers and seedsmen as educators of farmers where it was impossible to invite farmers to the University Farm at Mesa. A general Crops Field Day staged October 20 by the Agronomy Department of the University of Arizona was participated in.

Seven cotton classing organizations under the Smith-Doxey Act have been accepted. Two of these are around long-staple cotton gins. Two additional short staple sets of papers have been sent in for approval following recent changes in regulations concerning ginner agreement and qualifying for government loan.

It is hoped that the benefits of the classing service may be extended to a greater number of growers during the coming year and that pure seed supplies sufficient to care for all who are interested in taking advantage of the provisions may be provided.

Fundamental information about the effect of continued planting of pure seed on land of low fertility is vital to the intelligent conduct of a pure seed program.

Change of the rules of the Arizona Crop Improvement Association to provide local sources of planting seed should be made, recognizing the high percent of smut that ordinarily prevails.

Project #8 - Weed Eradication

It is hoped that a start can be made to prevent the spread of serious noxious weeds, specifically this year that a W.P.A. project can be set up to chart all bindweed patches in the County, taking such steps to prevent spread as C. H. Davis deems necessary.

Horticulture

The national citrus crop this year is approximately 10,000,000 boxes over the previous high figures. The prospects in that respect are that the production both locally and nationally will continue to increase for another two or three years before the peak is reached. Under these conditions, marketing problems are paramount in importance and are receiving the attention of a great many specially trained men in this field.

Local growers have three general alternatives; increased returns due to improved market conditions, increased returns due to increased yield or a decrease in production costs. The last two mentioned are within reach of the average grower and are most likely to be the lines along which immediate adjustment will be made. Extension work along these lines can be of most direct service to growers. Increased yields through the proper use of fertilizers, decreased cost of production through the use of green manure crops and more efficient general management of the groves are possibilities.

As with vegetables, citrus extension work should be tied in closely and be in cooperation with experiment station men who are stationed in the County for research on citrus problems.

The major interests at the present time in small fruits are in blackberries and hybrid bramble fruits, rather than in strawberries. This may be due in part to a variety planting of bramble fruits on the Mesa Farm. As a result of this planting, a great deal of interest has been manifested in the Texas Wonder blackberry, Macatawa blackberry and Boysenberry and others. There is need for both method and result demonstrations dealing with recommended pruning, trellising, irrigation and fertilization practices.

While the commercial opportunities for small fruit culture are somewhat limited due to local market limitations, yet there is considerable need for more bush fruit culture in the home orchard as a part of a balanced live-at-home program for rural people.

Deciduous fruit culture has a definite place in the horticultural program for this County. Production has, however, been on the decline for a number of years, due to premature death of

the trees. With results which the average growers seem to be having and with present cultural practices, it is hardly advisable to recommend general planting.

Experimental work with deciduous fruit root stocks is being undertaken by the Department of Horticulture. The Assistant Agent will cooperate in any way possible with this work.

Pecan production in the County will increase rapidly for the next three or four years and while there is still considerable need for extension work with improved cultural practices, the major interest is likely to center around methods of harvesting, grading, cracking and marketing of the crop. Extension projects should deal primarily with these problems.

Interest has been increasing rapidly in rural home improvement for the last two or three years. This is evidenced in part by the outstanding interest in the rural home improvement contest in the Buckeye Valley last year. Rural people are not only interested but receptive to information on planting arrangements, plant material and cultural information. Mimeograph and printed material is greatly needed to assist in getting correct information to interested people. There appears to be a real need for a general landscape bulletin. Much can be done toward gathering the necessary data, pictures, etc. in cooperation with the Extension Specialists in Horticulture for the ultimate preparation of such a bulletin.

The vegetable industry in the County might be divided into two general classes: The broker-shipper, growing or controlling a comparatively large acreage under highly specialized conditions. Lettuce, cantaloupes and to a lesser extent, carrots, and cauliflower and the principal crops grown by these men on large scale operation. The other group is made up of smaller operators, growing a larger variety of vegetable crops for local or near by markets under less specialized conditions. The greatest need for Extension activities at the present time is probably with the second group.

The vegetable growers are very fortunate in having an experiment station man stationed in the County for experimental work on vegetable crops. A splendid opportunity exists for cooperative work between the Experiment Station and the Extension Service with demonstration plots on some of the newer varieties of corn, tomatoes, carrots, melons and others. Also work on the use and requirement of fertilizers, sweet potato seed selection, etc. is needed.

Project #15 - Insect Pest Control

While the warm winter of 1937-38 especially favored the building up of huge insect populations, it seems advisable that steps be taken to carry information concerning damaging and beneficial insects to beet, alfalfa and sugar beet growers so spray schedules may be worked out.

Dairy

Dairy Improvement, including farm management, better and proven and pure bred sires and disease control, have taken the major portion of time and effort since it is the project which appears to be susceptible of much improvement and also occupies quite a prominent position in the stability and valuation of livestock enterprises within the County. Three men are now employed as cow testers, working for the Herd Improvement Assiciation with which the Assistant Agent cooperates as advisor. Over 2000 cows are now being tested monthly in the Association. Much assistance has been given ranchers in arranging feed production programs, planting schedules, mixtures for seeding; varieties of crops, methods of harvesting, irrigation practices and various other items of concern to the producer. Other activities of this large group of several hundred farm families interested in and producing dairy products are; legislation to protect their industry, better homes and communities, assistance to 4-H Clubs and programs, better and proven herd sires and finally, a greater usage of dairy products to make for better health.

Cattlemen, sheepmen and hog raisers are assisted frequently in many and diverse manners. Securing a balanced ration is often the nature of help given. These livestockmen have far fewer troubles with their stock than dairymen for the reason their animals have a short termed period while growing and finishing, hence many troubles known to dairymen are thus escaped, requiring much less assistance from this office.

Poultry

Poultry and turkey growers require many calls, office conferences and assistance with letters and bulletins. These many individuals are coming and going within the enterprise, thus making a large and rapid turn-over. While these individual problems are of small importance commercially, the gross represents a capitalization of some $275,000 in the Salt River Project alone. This figure exceeds the valuation of swine and approaches the valuation of sheep.

Much time could well be spent with the beef cattlemen and the range sheepmen but because of the lack of demand made by them, the field has been largely overlooked.

Economic Surveys

Surveys participated in included feeder cattle, sheep and hay in December, crop survey, and the Pima cotton survey during the summer and fall.

Project #29 - Boys & Girls 4-H Club Work

The assistant Agent has been directly responsible for agricultural 4-H work and for general supervision over the entire County program.

During the past year, 626 individuals were enrolled and 524 completed or 83.6%. These individuals carried 694 projects in poultry, dairy, rabbits, vegetable, flower gardens, horse, sheep, swine, farm management, camp, nature study, leadership, beef and rural home improvement. The work was supervised by 46 leaders in 26 communities.

In order to further project work and to maintain close contacts with the boys, 35 demonstrations were given in citrus, dairy and poultry subjects; 12 project tours were conducted, as well as 16 field trips. Ten 4-H demonstration teams and seven judging teams were trained for County and State Competition. One demonstration and one judging team entered national competition at the National Dairy Show.

Publicity has been provided through 12 radio programs over the two local stations, a semi-monthly column in the Arizona Producer and timely news items in the two daily papers. Four issues of a County 4-H News Letter to each club were published.

In addition to standard project work, a number of county-wide events were sponsored as a means of furthering the 4-H program: They are, County 4-H Fair, Buckeye Junior Fair, Washington County Fair, Leadership Club, Baseball Tournament, Fellowship Banquet, Citrus Judging contest, County Pig Program, County Beef Program, State 4-H Roundup and National 4-H contests. These events will be briefly summarized.

The County 4-H Fair completed its 12th year with 1722 tangible exhibits placed by approximately 1000 club members. The Fair with its 12 departments is supervised and run largely by 4-H members as a training unit.

The Buckeye Junior Fair is an open community event in which 4-H members contribute the bulk of the exhibits entered, of which there were approximately 500.

The Washington Country Fair was new in a community where 4-H was new. An enrollment of 40 sponsored the Fair and placed approximately 100 exhibits.

The College Leadership Club finished its second year's work with 28 enrolled and 12 completing. Members sponsored semi-monthly discussion meetings, a Fellowship Banquet for local 4-H boys and girls (95) attended, a county 4-H Fair broadcast, lead a number of clubs and helped materially with the County Fair.

A Baseball Tournament was held with 8 girls teams and 8 boys teams participating from 10 different communities.

A Fellowship Banquet was sponsored for 95 4-H members and leaders, at cost.

Five Junior teams and one senior team competed in the State Citrus Judging event.

Ten boys purchased pigs on contract with local business firms. All completed.

Preliminary work was started on a County Beef program.

Seventy-five members and 7 leaders from 24 districts represented Maricopa County at the State 4-H Roundup. Our County was well represented in all events.

Maricopa County 4-H members participated in 7 National contests and placed State winners in 4 of these. Two boys represented the County and State at the National 4-H Congress in Chicago.

The bulk of the enrollment in 4-H projects is in poultry dairy and vegetable gardening. These constitute approximately 60% of the total enrollment.

During October and November, an increasing portion of the Assistant Agent's time was devoted to acquainting himself with horticultural projects.

The Agricultural 4-H program for the coming year can best be handled by continuing to stress project contacts in the field with the club members. This is rather difficult at times, due to the great volume of routine and administrative responsibilities for general County events. Field trips and demonstrations are very important and should be increased in number.

It is quite likely that the gross enrollment will decrease but along with this should be an increase in quality of projects and an increase in the percentage of livestock projects. A more definite attempt should be made to encourage consistent growth in size and value of individual projects.

A continued attempt should be made to organize more 4-H clubs out of the schools with non-school teacher leaders. This is also a very difficult thing to do because of transportation facilities and suitable times for meetings. However, it appears that more progress along this line is possible.

Recent restrictions as to the enrollment of High School students in Vocational work in the 4-H program will probably reduce the enrollment of older club members to nothing. It may be possible to rebuild a limited enrollment of older club members who have finished high school and who do not enter college and those not enrolled in high school work. A curtailed enrollment in the older age group means fewer contestants for National contests. It may be necessary to plan achievement and award events of County and State nature which would be open to members under 15 years of age to replace in part, the National contests.

Continued emphasis should be placed on the award value of satisfactorily conducted projects with satisfactory financial returns to the individual member. Community exhibits, contests and local awards should be of value in furthering this phase of the work.

4-H Flower Club at Lehi, Arizona inspect the garden of Norma Svob on one of their project tours. January 1938

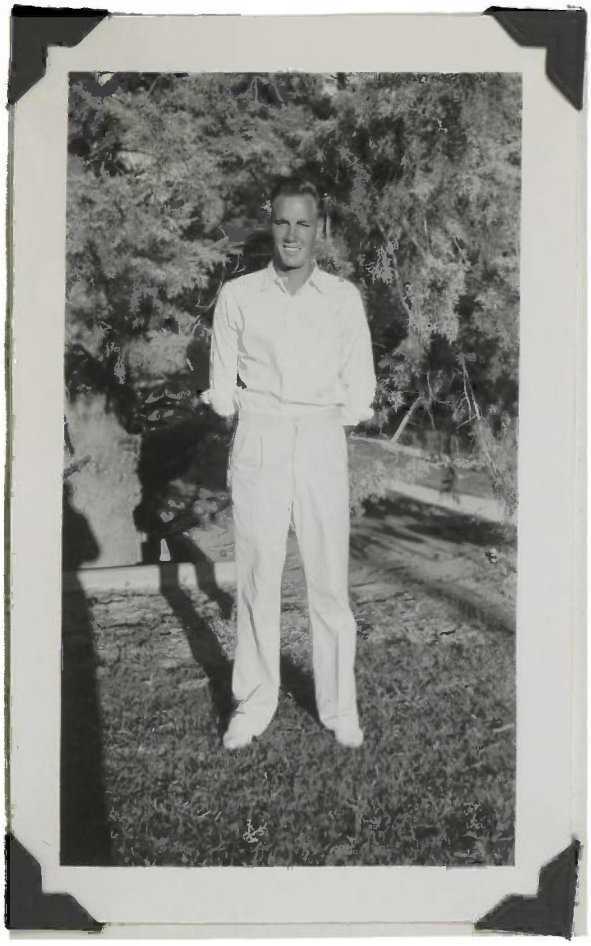
Miss Norma Svob, Lehi, Arizona. The proud owner of an outstanding home 4-H Flower Garden. January 1938

4-H Poultry Demonstration Team from Mesa. This team represented the County in the State contest at the 4-H Roundup in Tucson, August 1938. Left to right, Allen Isley, Leon Julian.

Demonstrating the use of traps and poison in the control of the pocket gopher. County 4-H Fair April 1938, Tempe. Left to right, Lucille Holderman and John Gilliland.

Liberty 4-H Pig Club members on tour of projects. Jim Beloat discusses the bad features of too small a pen. March 1938

Eli Gates with his 4-H Dairy Project. Kyrene. Jan. 1938.



Albert McDowell, Mesa, Arizona August 1938. Albert represented Maricopa County and the State at the National 4-H Club Congress in Chicago, as winner in the Rural Electrification contest.

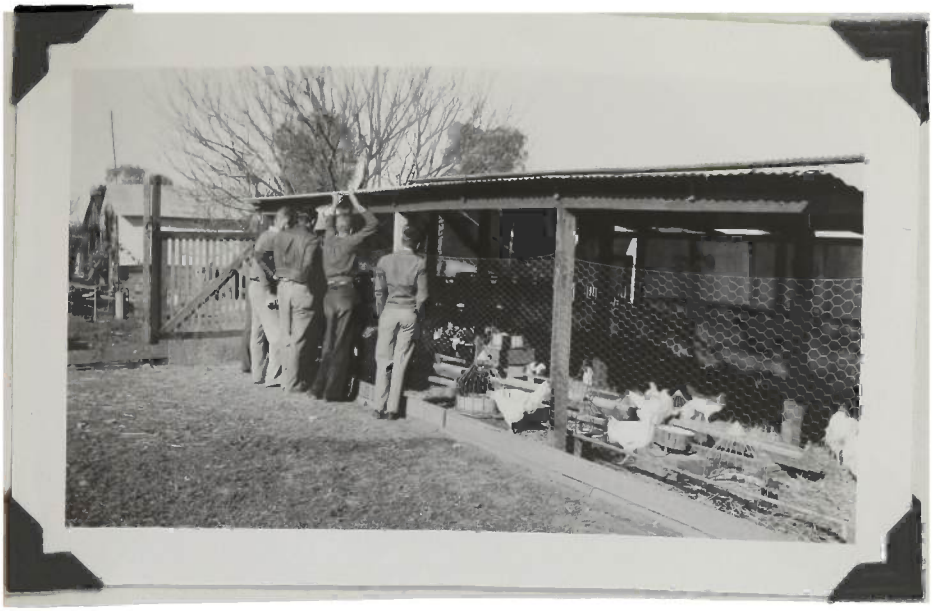
Vernon Richardson, Tempe, Arizona. August 1938. Vernon represented Maricopa County and the State at the National 4-H Club Congress at Chicago in the Santa Fe record contest.

4-H Dairy Demonstration on Babcock Milk Test, presented by Junior team from Gilbert Calf Club at County 4-H Fair April 1938 at Tempe, Arizona. Left to right, Patricia Hiett and Jack Bowen.

The Balsz 4-H Bee Club. Balsz School, June 1938. Mr. Lyle Hanna, leader, is at extreme right in back row. These older 4-H boys formed a Bee Club as a part of their summer activities.

Washington, County 4-H Fair - May 1938. A few of the prize winners in the Dairy Department.

A part of the poultry exhibit at the Washington, County 4-H Club Fair - May 1938. For the first year in 4-H, the combined 4-H Clubs of the Washington District (poultry, dairy, rabbit and garden) found their district fair a source of real enthusiasm.



Senior 4-H boys study poultry management methods at the W. T. Duke poultry ranch, Mesa, Arizona on their Farm Management Club Tour. December 1937.

Judging arena at County 4-H Fair, April 1938. Tempe, Arizona Both adults and 4-H members view with interest, the keen competition in the County 4-H Fair.

Buckeye & Palo Verde 4-H boys on field trip. Mr. Lee demonstrates tatooing of registered Jersey calf. January 1938. Lee Ranch, Palo Verde

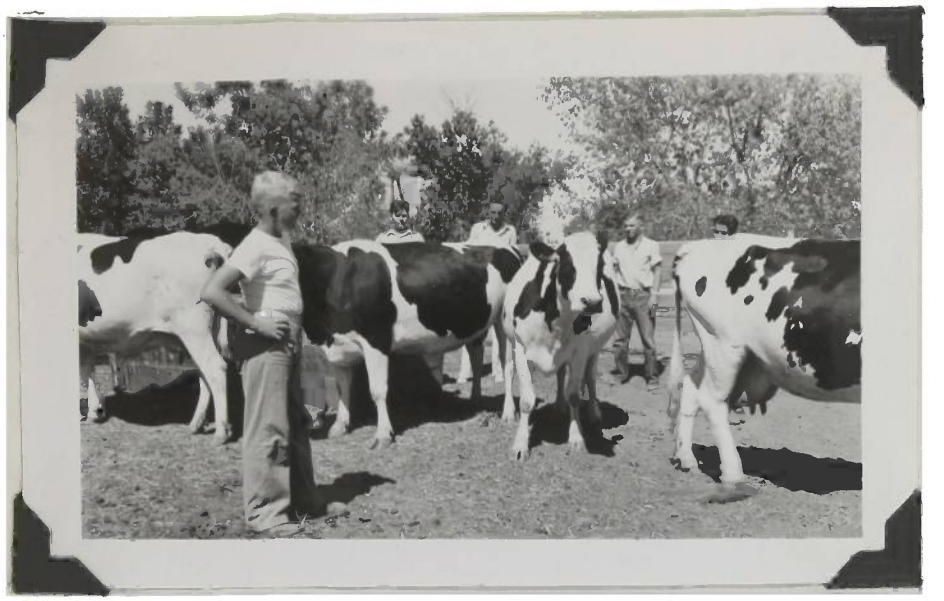
Senior 4-H Dairy Demonstration Team which represented Maricopa County and Arizona at the National Dairy Show in Columbus, Ohio. Left to right, Harvey Johnson John Gray. August 1938

Liberty 4-H boys "looking them over" before selecting their projects. Frank Hanna Ranch, Tempe, Arizona. Dec. 1937.

Jim Bedout, one of the [illegible] boys in the Liberty 4-H Pig Club with his newly selected contract pig. Frank Hanna Ranch December 1937.

Robert Harer, Liberty, and his 4-H contract pig in March, 1938.

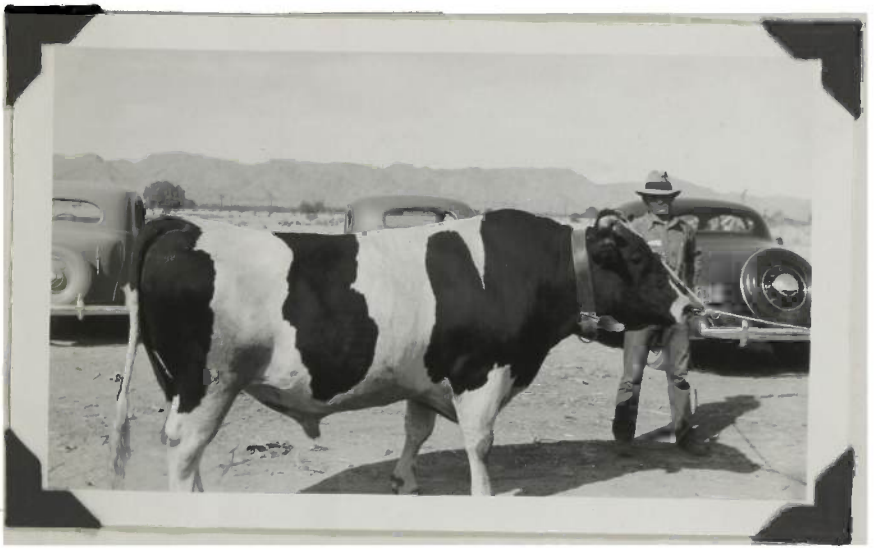
Burton Conley's Liberty 4-H contract pig with litter. October, 1938.



Senior 4-H Dairy boys practicing dairy judging. August 1958. Van Sant Ranch, Glendale. Left to right, Wayne Yeoman, Robert Painter, Weymouth Pew, Edward Hauser, Vernon Richardson

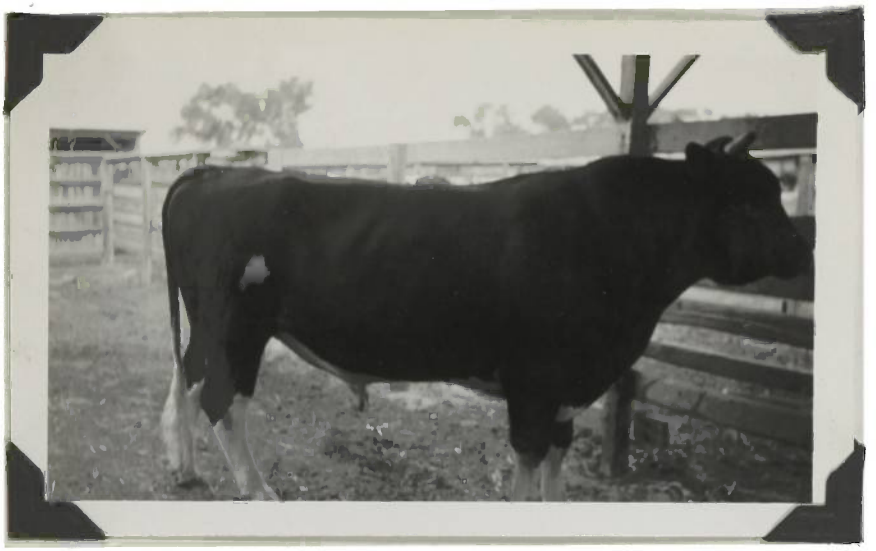
Senior 4-H Dairy Team which represented Maricopa County and Arizona at the National Dairy Show in Columbus, Ohio, September 1958. Left to right, Weymouth Pew, Wayne Yeoman, Edward Hauser.

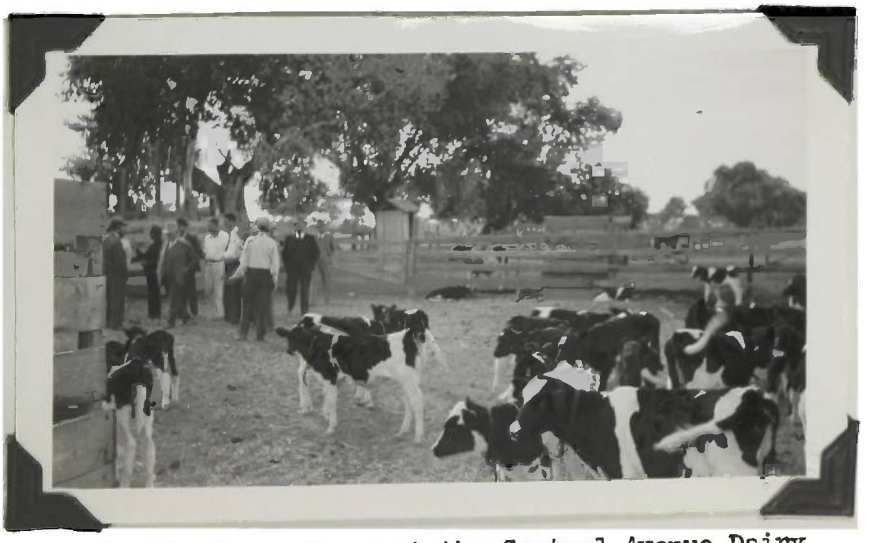
SONS OF PROVEN SIRES



Owned by Herbert Gates

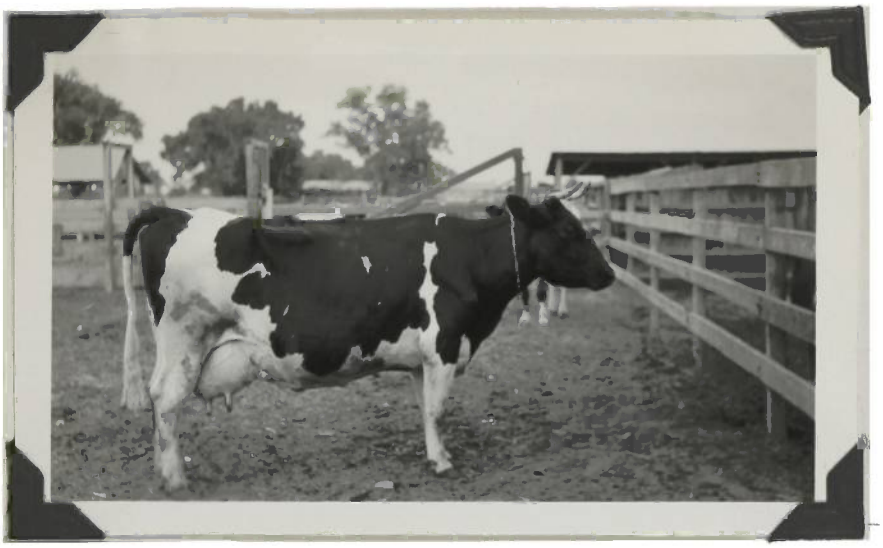
Owned by Central Avenue Dairy

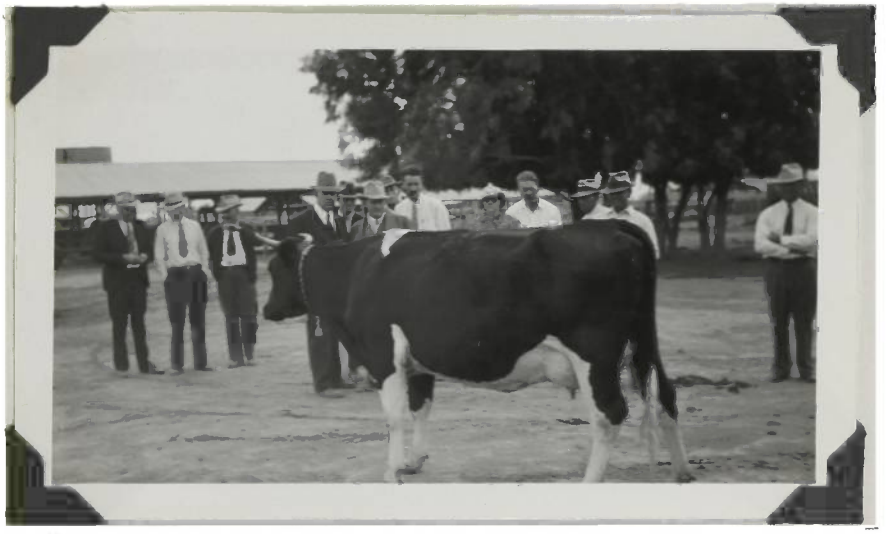


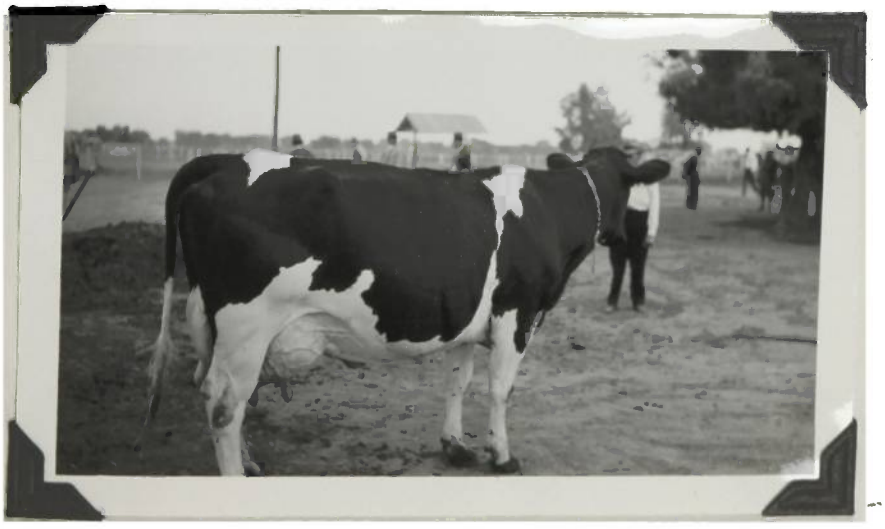


A Family Group Scene at the Central Avenue Dairy

A registered Ayrshire cow bred in the County by L. A. Johnson. A fine example of the skill and management possessed by the "Master" breeder-farmer.







Foundation Brood Cows
Mission Ranch Cows Carry the Pay Load

Group of Dairymen from the County and several other states spend a day touring to herds where the breeding of Pure Bred Holsteins is in progress. A November 9 Day in the Salt River Valley.

"Ormsby Patriarch" Pat, a proven sire. The result of Herd Improvement. This animal will this season, sire several hundred offspring by means of Artificial Insemination. A project being instituted in cooperation with Dr. Pistor, Veterinarian.

An interested group of dairymen looking over some of Jess Elliott's good cows.

SONS OF PROVEN SIRES

Colony Farm Bull. Shipped in by W. A. Van Sant & Son
November 1938

M. B. Nichols
C. L. Phillips

Glenn M. Householder
Alex McNeil

Nov. 1938