THE LAND-GRANT SYSTEM OF AGRICULTURAL COLLEGE ADMINISTRATION IN THE
UNITED STATES, WITH SPECIAL REFERENCE TO THE
UNIVERSITY OF ARIZONA

by

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SIGNED: Abdul Latif Al-Salam
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CHAPTER I

INTRODUCTION

Among the nations of the world, the United States of America at the present time stands out as the leader in the utilization of its natural resources, its industrial production, its transportation and communication systems, its tremendous financial institutions, its worldwide commerce and, from a social standpoint, the low percentage of illiteracy and high standard of living of its people. Its rapid rise to world leadership during its brief existence of 180 years as an organized nation is one of the most amazing phenomena of the present age. By comparison, Egypt is about 5,000 years old; China about 4,000; Japan 2,500; India 2,000; Great Britain 900.

While famines occur in some countries and others must import many of the necessities of life, great surpluses of agricultural products accumulate in the United States every year. The United States Government pays the farmer a subsidy through parity prices to enable him to continue farming. It buys up the surpluses and stores them in warehouses in the hope of selling them later to other countries.

Why has the United States become the world leader in agricultural production? The reason is to be found partly in its large amount of arable land, its mechanized agriculture, the extensive use of high-grade seed, fertilizers and insecticides, and a supply of skilled labor.
Another secret of the American farmer is his willingness to work hard, for long hours and to make efficient use of his land. But behind all of it is the high level of intelligence of American farmers, many of them are college graduates. Agricultural education begins in the high school. The American boy is stimulated from grade school up to take an interest in farm life, through projects and activities in the 4-H Clubs and the Future Farmers of America.

The American farmer is not only an intelligent tiller of the soil; he is also a smart businessman. Modern farming has become a highly complicated business. It involves a knowledge of accounting, marketing and credit, as well as a scientific knowledge of soils, crops and livestock. The secret of all this is the fact that the farmer has had his training in a modern agricultural college. Not only does the "Land-Grant" college offer him formal training; it finds out through scientific research new and better methods of tilling the soil, better irrigation procedures, better crops to grow, better fertilizers to apply, better insecticides to control pests. Then, through a well-organized extension service, these research results are taken to the farm by trained agents who show the farmer how to put them into practice.

The Purpose of This Study

The Land-Grant system of American government-supported institutions of learning is very impressive among the educational systems of
the world. (3, 5, 8)* It is largely responsible for the agricultural progress of the United States. A student from a foreign country naturally asks the question: "What makes this system so efficient?"

This thesis study was made to learn about the acts of Congress (12) governing Federal support of the agricultural colleges and how the functions of teaching, research and extension are coordinated into a working unit for efficient agricultural college administration. For this purpose the available literature was consulted. Using the University of Arizona as a typical Land-Grant institution, the writer interviewed the heads of the representative administrative subdivisions of the University. In this way, it was possible to understand first-hand the part each one is playing in an organization which performs a great variety of services for the advancement of the prosperity of the United States.

The ultimate purpose of this study was to determine to what extent the Land-Grant system may be applied to agricultural college administration in Iraq.

* Numbers in brackets throughout this thesis refer to citations in the bibliography.
CHAPTER II

HISTORY OF LAND GRANT COLLEGE MOVEMENT

The University of Arizona is a member of the group of institutions of higher learning in the United States known as the Land-Grant Colleges. This system was designed to provide equal educational opportunity for every person, but especially in agriculture and the mechanic arts. (8) The bill establishing the system was the First Morrill Act passed by the Congress and signed by President Abraham Lincoln on July 2, 1862. This bill was known as the "Land-Grant Bill" because it gave to each state and territory 30,000 acres of Federal land for each Senator and Representative the state had in the National Congress at that time. The money from the sale of this land was to be used to establish colleges and to teach agriculture, mechanic arts and military training for the national defense.

Since 1862 additional acts have been passed by the Congress to assist the colleges in the functions of teaching, research and extension. Each institution according to the ratio of population of the state to that of the whole nation receives these funds ranging between $100,000 and $1,900,000 a year from the Federal Government. Some of the funds must be matched by state funds. The state legislatures appropriate large amounts of state money in further support of their Land-Grant colleges and for the advancement of agriculture in their respective states.
The background of the Land-Grant college movement can best be understood by examining the acts of the Congress of the United States, by which it gradually came into existence.

A college or university is necessarily an agency of public progress. The idea of the land-grant institution was chiefly the product of conditions of the first-half of the nineteenth century. That idea has been enlarged and intensified with the expansion and diversification of the American economy during the past seventy years.

What, then, were the conditions that gave rise to the ideal of democratic education in the United States, that led to the founding of the land-grant institutions and influenced their later development?

Conditions Calling for Technical Education

Conditions in America during the early part of the century in which the land-grant institutions were established were largely those of a frontier country. (3,6) The great mass of the people were uneducated and provincial. The people generally knew little about science or its applications.

Yet, in spite of existing superstition and ignorance there was increasing interest in both industry and education. Factories, established to meet the necessities of the colonies, needed skilled operators to conduct them, but they had to be imported from abroad. Mines, railroads and canals began to give the country an industrial aspect. Agriculture in the settled sections of the country already began to show marked evidences of deterioration. As a result the people began to move to the West.
The beginning of agriculture and engineering as subjects of study in America was made under the urge of industrial independence (3,8) in the period following the Revolution and the War of 1812. The demand for scientific information to increase production in agriculture and in manufacturing was expressed in various petitions.

During the fifty years between 1820 and 1870, industry in the United States was completely reorganized. The percentage of people engaged in agriculture dropped from 83 to less than 48 per cent, while the percentage of those engaged in manufacturing increased from 17 to more than 31 per cent.

**Development of the Land-Grant Colleges**

Under the impetus of the Morrill Act, the period from about 1860 to 1885 became the great developing era of American education. (9) In 1862, thirty-seven states had agreed to accept and fulfill the conditions for the establishing the new type of college. Although of uniform origin, the different land-grant institutions at first had little in common. They had to meet radically different conditions and serve the varying needs of their constituents.

These conditions were the background of the land-grant institutions. This background was that of a developing frontier; of an agriculture awakening to new problems and the possibility of increased production through machinery and new knowledge; of industry and commerce; of science offering new and unusual aids to education and life.
The First Morrill Act

This was an act introduced in the Congress in 1859 by Senator Justin Smith Morrill from Vermont. He entered Congress in 1855 serving as a representative in the Lower House until 1867 and as Senator from Vermont from 1867 to 1898. During his forty-three years in Congress, he was the leader of the cause of land-grant education.

Senator Morrill based his plan on certain well-known conditions then existing which Eddy (3) in his recent book, p. 28, lists as follows: (a) the wasteful policy of the government in disposing of its public lands; (b) the prevalence of soil deterioration and exhaustion; (c) the need for useful education for the man who will use it; (d) the existing liberal arts college system which ignored the farmer and mechanic; (e) the inability of the individual states to provide agricultural and mechanic arts colleges; (f) the tendency for American production to fall below that of European countries; and (g) the desire to find a way for the Republican party to win the support of the American farmer.

These reasons convinced Morrill that the Federal government was the only agency capable of solving the problem. But the Federal government had nothing to give to the states but land. The "Land-Grant Bill" was the result.

The First Morrill Act was "an act donating public lands to the several states and territories to provide colleges for the benefit of agriculture and the mechanic arts. The amount of land given to each state was 30,000 acres for each Senator and Representative the state
then had in Congress. The money from the sale of the lands was to be

"....invested in stocks of the United States and the
money so invested shall constitute a perpetual fund,
the interest of which shall be inviolably appropriated
by each state to the endowment, support and maintenance
of at least one college where the leading object shall
be, without excluding other scientific and classical
studies." (12)

No portion of the money could be used, directly or indirectly,
for the "function, erection, preservation or repair of any building."
If any portion of the fund was diminished, lost or misused, it was to
be replaced by the state to which it belonged. An annual report was
required by Congress concerning the progress of each Land-Grant college,
including any improvements or experiments made during the year. Any
state in rebellion against the government was not to receive the bene-
fits of the act while in a state of rebellion.

This act passed the Congress on July 2, 1862 and was signed by
President Abraham Lincoln. Thus, the Land-Grant colleges were created
while the Civil War between the North and South was in progress. Because
the southern soldier was better trained and for a long time out-fought
the North, it was later decided to add military science to the fields
of agriculture and mechanic arts, as fields in which instruction must be
given in every land-grant institution.

College of Agriculture, University of Arizona

At the University of Arizona the College of Agriculture is divided
into four divisions, each headed by a Director, with the Dean as head of
the entire College. (See Figure 1) The divisions are as follows:
FIG. 1.—ORGANIZATION CHART, COLLEGE OF AGRICULTURE.
Plate I. Air view of the campus, University of Arizona.
1. Resident Instruction
2. Agricultural Experiment Station
3. Agricultural Extension Service
4. School of Home Economics

In each division there are departments, each under the supervision of a chairman.

**Duties of the Director of Resident Instruction:** The Director of Resident Instruction performs the following duties:

a. He exercises general supervision over resident instruction in the college.

b. He assists in preparing the annual college budget.

c. He handles the registration of students to see that the degree requirements are observed.

d. He has charge of curriculum revision for new editions of the catalogue.

e. He handles cases of delinquent and failing students through a scholarship committee.

f. He signs requisitions, invoices, travel orders, expense accounts.

g. He makes adjustments for students in their courses of study.

h. He approves applications for candidacy of students for degrees.

i. He attends meetings of the Land-Grant College Association and of Directors of Resident Instruction of the western states.

j. He handles publicity and recruitment of students for the college, positions for students desiring employment and public relations work at large.
Teaching of Agriculture in the Land-Grant College

The First Morrill Act provided for the teaching of agriculture, mechanic arts and military science. The states were to furnish buildings and general facilities, and the Federal government only the money to pay teachers' salaries and purchase equipment and supplies for class-room work.

In the Land-Grant colleges, agriculture is taught under a variety of curricula leading to the degree of bachelor of science. Because of the wide range of knowledge covering plant, animal and soil science, the Land-Grant colleges make it possible for students to specialize in a chosen field to prepare themselves for a life work in some profession either directly in agricultural production or in positions related to agriculture. The emphasis on certain fields varies in different states; for example, to study tobacco cultivation, diseases, etc., one should attend an agricultural college in Kentucky or Connecticut; and to study sugar beet production the student should go to Colorado or California.

There are 51 land-grant institutions teaching agriculture in the United States, one in each state and one in each of three territories: Hawaii, Alaska and Puerto Rico. In a number of states where the negro race is in fairly high proportion to the population, separate colleges for negroes exist; for example, in Texas, Alabama, Mississippi, Georgia, South Carolina, North Carolina, and Maryland. There are eight separate negro Land-Grant colleges in the United States. The remaining states admit negroes to their land-grant institutions along with the white students.
Procedures: The departments have charge of instruction in the classroom, field or laboratory, and set up their standards of student performance. The instructor is the final judge as to what a student's grade in a course shall be. Department heads advise students as to their courses of study. They order equipment and supplies as needed. They serve on committees appointed for special purposes.

All of the departments carry on research projects along with their teaching duties, some on federal funds, some on state funds, some on commercial grant funds. Most members of the staff have both teaching and research duties. Illustrations of class instruction are given in Plates II and III.

The college is operated on a democratic basis. Faculty meetings are held to act on matters involving academic standards, petitions from students, and questions of any nature affecting the staff, its working conditions, and academic matters, in which each individual staff member above the rank of instructor has a vote.

Academic Rank: The teaching staff is classified by rank into instructors, assistant professors, associate professors, and professors. These ranks carry different ranges of annual salary and are based on length of time of service and quality of performance in teaching or research. The staff is preferably composed of members with the Ph.D. degree. The policy is to employ as far as possible persons who have had doctoral training.

Accreditation: Credits earned by a student in a land-grant institution are transferrable at equal value to any other land-grant institution.
Plate II. A professor explains a principle of soil science to a class.

Plate III. Students carrying out experiments in a laboratory.
This is not true of non-land-grant agricultural colleges. In the latter, the courses are often taught by poorly trained personnel, or personnel teaching a wide variety of subjects and with poor or limited facilities. In such cases the policy of land-grant colleges is to accept at par value from such non-land-grant agricultural colleges only lower division courses and upper division non-agricultural courses. Upper division courses in agriculture can be validated only by examination or by repeating the course offered by the institution to which the student has transferred.

Training for Positions: It was formerly believed that a student studying agriculture could enter no field or profession except to go back to the farm or ranch and engage in production of crops or livestock. That is no longer true. There are fewer agricultural graduates now returning to farms and ranches than in past years. This is due to mechanization and more efficient large-scale farming.

Many new fields of work have opened up for the well-trained agricultural graduate to enter, such as:

- Agricultural salesman — farm machinery, fertilizer, insecticides and agricultural chemicals
- Bank appraiser of land and livestock for making loans
- Statistician for agricultural firms, government agencies, or experiment stations
- Farm management
- Teaching of agriculture in high schools and colleges
- Research with government agricultural agencies
Field work with U. S. Soil Conservation Service and Forest Service

Plant quarantine inspection
Chemists, agronomists, etc., in agricultural laboratories and experiment stations
Harvesting, packing and marketing of agricultural products
Dairy manufacturing and management

These varied fields require thorough training in the basic sciences and specialized agricultural sciences, which the Land-Grant College offers through its curriculum.

Home Economics Instruction

Federal aid for teaching, research and extension in home economics was provided for under the Second Morrill Act. (3, 12) It was recognized that woman plays an important role in society, and her training for homemaking should not be neglected. Accordingly, in 1878 federal funds were given to the states to promote this kind of work. In many of our land-grant institutions home economics is a part of the College of Agriculture. This is true at the University of Arizona.

The teaching is done by a staff which constitutes a "School" of home economics under a director who has charge of the administration. Curricula are provided in Food and Nutrition, Textiles, Clothing and Related Art, Home Economics Education, Family Life and Child Care. A "practice house" with modern equipment makes it possible for young women to receive training in child guidance and care, and in cooking and homemaking.
Research work is carried on under experiment station projects in the fields of nutrition and house-planning and interior decoration. The School also has the direction of training young women who plan after graduation to become teachers of home economics in the high schools.

The extension work in home economics is under the direction of a state leader of home demonstration agents.

Graduates with Bachelor's or Master's degrees in home economics obtain positions as dietitians in hospitals, restaurant management, home economics journalism, research, personnel for food processing companies, designers of women's apparel and as teachers of home economics in high schools or colleges.

The Second Morrill Act

This was an act (3, 12) to apply a portion of the proceeds of the public lands to the more complete endowment and support of colleges for the benefit of agriculture and the mechanic arts established under the provisions of an act of Congress approved July 2, 1862. This Act passed the Congress, August 30, 1890.

The Second Morrill Act provided that there should be annually appropriated to each state and territory, "for the more complete endowment and maintenance of colleges for the benefit of agriculture and mechanic arts," the sum of $15,000 with $1,000 added each year for the following ten years until the annual sum amounted to $25,000. It also provided that no money should be paid to any state or territory for the support and maintenance of a college where a distinction of race or color is made in the admission of students.
The money under this act could be applied only to instruction in agriculture, the mechanic arts, the various branches of the natural and economic sciences, with special reference to their application in the industries of life, and to the facilities for such instruction.

The states had to accept the funds through their legislatures' guaranteeing against loss of any of the money due to mishandling. Moreover, the funds could not be used for the "purchase, erection, preservation or repair of any buildings." This meant that the money must be used for instructional purposes only. The states must provide the buildings, utilities, etc.

The most important feature of this bill was that it guaranteed equal benefits to the agricultural colleges for negroes as well as for the whites. Those colleges which before 1890 had admitted only white students were now faced with necessity of either admitting negro students or building separate colleges for them. As a result, five states named the existing state-supported negro college as the Land-Grant college. Six states established new colleges and six others designated existing negro colleges as the land-grant institutions.

The bill is a very important milestone in the history of the Land-Grant college. For the first time provision was made for instruction in some of the arts and all of the sciences. Before 1890, instruction was limited to agriculture, mechanic arts, and military science.
The Hatch Act

This Act passed by Congress in 1888 was to establish agricultural experiment stations in connection with the colleges in the several states. It was felt that there was not enough basic knowledge concerning agriculture to teach in the colleges. This information could only be supplied by research.

This Act (3, 8, 12) was to aid in acquiring and diffusing, among the people of the United States, useful and practical information on subjects connected with agriculture, and to promote scientific investigation, experiments and applications of agricultural science under the direction of the colleges or agricultural departments of colleges in each state or territory.

The object and duty of the experiment stations was to conduct original researches or to verify experiments, as for example on the physiology of plants and animals; and to secure as far as practicable uniformity of methods and results in the work of said stations. Each one of these experiment stations was to publish bulletins or reports of progress at least once in three months, one copy of which to be sent to each newspaper in the state or territories for the dissemination of the information. The Act provided that out of the first annual appropriation received by any station, an amount not exceeding one-fifth "may be expended in the erection, enlargement, or repair of buildings necessary for carrying on the work of such stations." It was the intention of Congress to provide scientific research facilities for making experiments relating to the then most important agricultural enterprises, but it was
left to the administrators in charge to determine in each case what particular types of research or experiments were essential.

**The Adams Act**

The Adams Act (8, 10, 12, 14) passed in 1906 provides for an increased annual appropriation for agricultural experiment stations.

The funds provided under the Adams Act were "to be applied only to paying the necessary expenses of conducting original research or experiments bearing directly on the agricultural industry of the United States, with due regard to the varying conditions and needs of the different states or territories." Both the Hatch Act and the Adams Act had in mind research to solve problems concerned with production of agricultural products. The Adams Act provides that there should be annually appropriated, $5,000 to each experiment station to be increased annually by $2,000 until a maximum of $15,000 was reached.

The sums so appropriated to the states and territories were to be paid in equal quarterly payments on the first day of January, April, July, and October of each year by the Secretary of the Treasury.

The Secretary of Agriculture was to make an annual report to Congress on the receipts and expenditures and work accomplished by experiment stations.

**The Purnell Act**

This Act was to authorize the more complete endowment of the agricultural experiment stations and for other purposes.
The Purnell Act (3, 10, 12) passed by Congress in 1925 provided the largest federal appropriation in the history of the agricultural experiment stations. The funds appropriated under this Act were to be applied only to paying the necessary expenses of conducting investigations or making experiments bearing directly on the production, manufacture, preparation, and marketing of agricultural products. It provided funds to enable the Land-Grant Colleges to teach at least three new scientific subjects: agricultural economics, rural sociology, and home economics.

For the more effective service of the agricultural experiment stations there was authorized to be appropriated, in addition to the amounts already received by agricultural experiment stations, the sums of $20,000 for the fiscal year ending June 30, 1926; $30,000 for the fiscal year ending June 30, 1927; $40,000 for the fiscal year ending June 30, 1929; $60,000 for the fiscal year ending June 30, 1930; and $60,000 for each fiscal year thereafter, to be paid to each state and territory. These sums were to be paid in equal quarterly payments on the first day of January, April, July and October by the Secretary of the Treasury.

If any portion of the money received by the designated officer of any state or territory should by any action "be diminished or lost or be misapplied," it must be replaced by state or territory where the irregularity occurred.

As provided for in previous acts, the Secretary of Agriculture must make an annual report to Congress on the receipts and expenditures of the agricultural experiment stations in all of the states and terri-
tories. The Congress may at any time amend, suspend or repeal any or all of the provisions of this Act. This means that the Purnell Act is not a permanent source of income to the states. It may be repealed by Congress at any time, although this is not very likely to happen.

The Bankhead-Jones Act

This was an act (8, 12, 14) to provide for research into the basic laws and principles relating to agriculture, and to provide for further development of cooperative agricultural extension work and the more complete endowment and support of the Land-Grant Colleges.

This Act provided additional funds for the important activities of colleges of agriculture: teaching, agricultural research and extension. Section 1 of the bill relates exclusively to agricultural research, and like each of the other bills describes the limitations of the use of the funds and, to some extent, indicates the subjects of research.

Section 2 of the Act states that the Secretary is authorized and directed to encourage research to be conducted by the agricultural experiment stations already established or which may hereafter be established in pursuance of the Act of March 2, 1887. The Bankhead-Jones Act also encourages research in marketing and utilization of agricultural by-products. The bill really provides for an expanding research program. It includes the broad field of conservation of the natural resources as related to agriculture.

Under the provisions of the Bankhead-Jones Act, $1,000,000 was authorized to be appropriated for the first fiscal year after the passage
of the Act, with an increase of $1,000,000 a year until the annual
appropriation becomes $5,000,000. These sums are to be divided so that
40 per cent goes to the United States Department of Agriculture and 60
per cent to the experiment stations. The allotment to the experiment
stations is to be apportioned among the states and territories and Puerto
Rico on the basis of the ratio between the rural population of each state
or territory to the national population. The Act also requires that
allotments be matched by the expenditure of equal sums for experiment
station work by the state or territory. This Act was approved June 29,
1935.
CHAPTER III

THE AGRICULTURAL EXPERIMENT STATION

On March 2, 1887, President Grover Cleveland signed the Hatch Act establishing the agricultural experiment stations in the United States. The passage of this legislation represented an entirely new governmental policy. It was for the development and the progress of the agricultural industry through research. The passage of the Hatch Act (12), however, was not the actual beginning of the agricultural research. In 1938 the Office of Experiment Stations reported that there were already fifteen organized experiment stations prior to the passage of this Act. Some of these were established by the state legislatures, some by the Land-Grant Colleges.

The first effort of the state experiment stations (10) was to solve the immediate and local problems of agriculture in the several states. There are at the present time more than one thousand three hundred and fifty cooperative projects between the department of agriculture and individual states dealing with many agricultural problems.

The movement for national cooperation and to coordinate agricultural research resulted in the establishment of regional laboratories authorized by the Bankhead-Jones Act (12). The development of cooperation and correlation in agricultural research was due to a joint committee on projects of research organized with a membership of six...
persons, three representing the U. S. Department of Agriculture and three representing the agricultural experiment stations.

The general demand for the establishment of agricultural experiment stations created to solve the farmers' problems by scientific research, followed the passage of the Morrill Act of 1862 which established the agricultural colleges.

**Administration of Agricultural Research**

Federal-grant funds were authorized by the Hatch Act of 1887 for direct payment of $15,000 to each state that would establish an agricultural experiment station for the purpose of engaging in systematic scientific study of problems relating to the agriculture of the state. This amount was increased later by the federal-grant acts.

**Administering the Federal Research Acts**

Federal-grant research (10) is carried on independently in the states, with wide latitude of purpose and direction. The Secretary of Agriculture is charged by law to give technical advice and assistance to the experiment stations. The Office of Experiment Stations renders a very effective coordinating service to technical staff members who wish to become familiar with entire station research programs. The Office annually requires complete progress reports on each federal-grant fund research project. These reports are prepared by station research leaders and approved by the directors.
The federal-grant acts require that the research conducted under them shall be coordinated. Due regard must be given in these programs to "the varying conditions and needs of the respective states and territories." Each member of the technical staff of the Office of Experiment Stations is expected to keep informed on the latest station and departmental research developments in his respective subject-matter field. The Office encourages direct contact between research leaders in the department and those at the stations. It also helps in planning and developing research carried on cooperatively by the Department of Agriculture and the state stations.

Administrative Authority of the Department of Agriculture

The Office of Experiment Stations (3) represents the Secretary of Agriculture in administering the several acts. It examines the research and expenditures of the experiment stations under the federal-grant acts, and coordinates the research work of the Department of Agriculture with that of the experiment stations. It reports annually to the Congress to prove the need for further funds. The Department of Agriculture Appropriation Act of 1895, making appropriations under the Hatch Act, directed the Secretary of Agriculture to "prescribe the form of annual financial statement," and to determine whether the expenditures under the appropriations made were in accordance with the provisions of the Act, and to make a report to Congress.
Provisions Relating to Payments of Federal Funds

The amounts appropriated under the provisions of the Hatch, Adams, Purnell and Bankhead-Jones Acts are paid in equal quarterly installments on the first day of July, October, January and April in each fiscal year. Upon a warrant of the Secretary of Agriculture, payment is made directly to the treasurer or other officer of the agricultural experiment station to receive the same.

Payments are made on the basis of approved experiment station projects under the provisions and of the cooperative agreement specified under the Bankhead-Jones Act.

Experiment Station Administration at the University of Arizona

The Agricultural Experiment Station of the University of Arizona was organized on a temporary basis on July 1, 1889. A permanent organization was made October 9, 1890, and the general policy of the work of the Station decided upon. This plan was adopted for the purpose of utilizing the experimental work of the Station in practice, and as a means of illustration, for students pursuing the agricultural course in the University.

In the organization of the Station, the headquarters are located at the University in Tucson, to make use of the buildings, laboratories, and apparatus of various kinds, for both instruction and experimental work. A chart of the organization is shown in Figure 2.
FIG. 2.- ORGANIZATION OF THE AGRICULTURAL EXPERIMENT STATION, UNIVERSITY OF ARIZONA.
The salaries of the men engaged in station and college work are paid from both funds. It is believed that in this way the money provided by the U. S. Government for experiments in the interest of improving agriculture, and for industrial training, may be most economically and judiciously expended. The scientific research of the station, which requires extensive and complicated apparatus, is carried on principally at the University, but in recent years in part at the Mesa Research Station.

In the beginning, with so much to do in getting started, it was thought best not to undertake more than could be well done. The foregoing considerations have determined the location of field stations up to the present time.

Organization of the Arizona Agricultural Experiment Station

The College of Agriculture has legally three major functions: teaching, research and extension. Teaching was the only function which was required by law when the agricultural experiment stations were established. It was provided that the Secretary of Agriculture should be reasonable in allowing their expenditures. To fulfill his official duty, he later organized the Office of Experiment Stations in the U. S. Department of Agriculture. This Office soon encouraged the appointing of a director of the experiment stations in each state. This director deals with the Secretary of Agriculture in managing the affairs of the station.

There were two opinions (8) as to the proper organization of these institutions. Some administrations believed that the experiment stations
should become a division of the college with its own equipment and its own personnel. It should be independent of the teaching function, because teaching ability and research ability were considered different.

The other group maintained that teaching could not be separated from research, that a limited amount of advanced teaching was distinctly helpful to the researcher. A discussion of the relation of college teaching and research must also consider the graduate school. In all institutions of higher learning, it is the graduate schools that are concerned with the advancement of knowledge. These divisions of the universities and colleges are the creative agencies in the production of new knowledge in agriculture.

The agricultural experiment stations have developed through the years a large number of eminent scholars in their respective fields. These scholars are now experienced men of science. They have had the advantage of exceptional facilities in laboratory equipment, apparatus, land plantings, animals, and funds for research work. The staffs of the experiment stations therefore constitute a very valuable group in the graduate school. Graduate students in colleges of agriculture have the advantage of working under experienced investigators with excellent equipment and funds. The experiment station carries on research in which the graduate student may participate. This combined advantage stimulates both the student and the supervisor of the research.

The projects being carried on by the experiment stations are inspected each year by a representative of the Office of Experiment Stations in Washington. This officer hears the reports of the research
men and determines from the progress of the research whether the project should be continued or closed. The reports he receives may help in asking the Congress for appropriations to continue the work during the following year.

Research in Agricultural Experiment Stations

The organization of experiment station research has resulted in holding the institutions to their purposes and to insure the employment of the best attainable skill, to supply the essential apparatus, to equip modern laboratories, and in general to provide satisfactory facilities in land, domestic animals, orchards, field and garden crops — all of the highest value for efficient research.

Each station has a director who knows the important problems of agriculture and has personal knowledge and experience in research. Each station has a staff of specialists, trained and experienced in scientific research. These specialists are at all times available for consultation.

The director and his staff have the responsibility of making certain that all the facilities of the station shall be utilized to the fullest extent in solving worthwhile problems. The form of organization and the methods of administration have been important factors in the widespread acceptance and approval of these institutions. In modern times science advances most and best when well organized.

The idea that stations are forced by pressure of farm need, to conduct superficial research is no longer true. The farmer himself has developed an exceptional knowledge and appreciation of the scientific
method. He is not pressing for inadequate solutions no matter how quickly obtained. In the present organization of the experiment stations fundamental research is the rule rather than the exception.

The University of Arizona Farms

The University of Arizona has thirteen experimental farms located in different parts of the state. This is desirable because of the widely different soils and irrigation water, cropping, and marketing conditions. Their locations are in the areas where irrigated agriculture is dominant and a considerable acreage of land is under cultivation.

The farms with their locations, purpose and acreage are summarized as follows:

<table>
<thead>
<tr>
<th>The Tucson Area</th>
<th>Acres</th>
<th>Principal Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Campbell Avenue Farm</td>
<td>80</td>
<td>Livestock, agronomy and horticulture</td>
</tr>
<tr>
<td>2. Dairy Farm, Campbell Ave.</td>
<td>80</td>
<td>Dairy</td>
</tr>
<tr>
<td>3. Casa Grande Highway Farm</td>
<td>120</td>
<td>Field crops, and poultry</td>
</tr>
<tr>
<td>4. Marana Farm</td>
<td>232</td>
<td>Field crops</td>
</tr>
<tr>
<td>5. Page Ranch</td>
<td>1,280</td>
<td>Range study</td>
</tr>
<tr>
<td>6. Plant Material Center</td>
<td>46</td>
<td>Range grass seed nursery</td>
</tr>
</tbody>
</table>

<p>| Salt River Valley               |       |                                           |
| 7. The Mesa Experiment Farm     | 160   | Field and vegetable crops                 |
| 8. Citrus Research Station, Tempe| 40    | Citrus                                    |
| 9. Cotton Research Center, Phoenix| 264  | Cotton                                    |</p>
<table>
<thead>
<tr>
<th>Safford Area</th>
<th>Acres</th>
<th>Principal Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. Safford Experiment Farm</td>
<td>63</td>
<td>Field crops, tillage, alkali soil study</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Yuma Area</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>11. Yuma Valley Farm</td>
<td>160</td>
<td>Field crops, cattle feeding</td>
</tr>
<tr>
<td>12. Yuma Mesa Citrus Station</td>
<td>160</td>
<td>Citrus</td>
</tr>
<tr>
<td>13. Yuma Mesa Field Station</td>
<td>160</td>
<td>Field crops</td>
</tr>
</tbody>
</table>

The location of these farms is shown on the map, Figure 2a. A view of the Mesa Experiment Farm and the Yuma Mesa Citrus Station is shown in Plates IV and V. These farms are well planned and equipped to do significant research work with various crops.

For each of these experiment stations there is a superintendent, who carries the responsibility of administering the station and cooperating with the general research staff in conducting the research studies. Also, there is a general farm superintendent who controls, administers and directs the superintendents of all the experiment farms. Each farm has its own budget which covers the complete operating expense of the farm.

**Arranging the Budget:** The Director of the Experiment Station asks the General Farm Superintendent to prepare a budget for the experimental farms. The General Superintendent makes a similar request to each farm superintendent about what they will need such as wages, travel expense, repairs and capital. After that the farm superintendents prepare a budget
Figure 2a. Map of Arizona showing location of the University Agricultural Experiment farms. Numbers of farms correspond with those given in the table of the text.
Plate IV. Arizona Agricultural Experiment Station, research laboratory and farm at Mesa.

Plate V. Air view of Yuma Mesa Citrus Station.
and send it back to the General superintendent and he sends it to the Director of the Experiment Station after careful examination.

Each farm budget is sufficient to cover the operations in that farm without dependence on the sale of farm products. The farm budget is set up to finance all routine farm operations.

Small plot work is financed by funds allocated to the projects. This refers to both labor and special equipment required. Projects are drawn up in the following manner:

The subject matter project leader prepares an outline of the experiments to be carried out at each farm. This outline aids the superintendent on whose farm the work is to be done in planning his work and who assigns financial responsibility for any extra work needed to carry out the experiment.

The subject matter department then works with the superintendent in locating where on the farm the experiment is to be made and sets up a time schedule for plowing, irrigating, planting, thinning and any other work to be done by the superintendent and his laborers. This is a highly responsible duty. Mistakes may ruin the results of an experiment. Field experiments are costly and require much time. The crops grown must be constantly watched for possible insect damage or the presence of plant disease. The irrigation schedule must be carefully followed. Careful records must be kept of irrigations, date and amount of water applied, and any other treatments or observations of conditions which may affect the results.
When the crop is ready for harvest, the research scientists in charge of the project supervise the harvesting of the grain or cotton or fruit from each field plot. This must be carefully done to get good results. The crops are sold and the money turned in to the University Business Office. These funds are placed in the "Hatch Sales Fund," half of which is available for use by the Dean and Director of the Experiment Station in making farm improvements, buying needed equipment, and other approved uses.

The research staff prepares the results of such field studies for publication as general bulletins, technical bulletins or mimeographed reports. This is a desirable means of getting the information before the general public, especially farmers, ranchers, and county agents, where it can be put to use.

The Statistician: The Experiment Station has a statistician who assists all of the departments in the design of their field experiments so that the results may be studied statistically. This service is of great value in telling in advance how many plots or replications to set out in the field to get reliable results without wasteful duplication of effort and expense. After the results are obtained, the statistician analyzes them to tell whether the differences observed in the crop were truly due to the treatments applied. In this way the information published by the Experiment Station is based on statistically planned experiments, which increases their reliability.
The Editor: The Experiment Station Editor edits the manuscripts for publication and decides the best form in which the subject matter and illustrations should be presented. He secures bids from the printers, reads, proof, and performs all other duties required in this work.

All agricultural publications and writing is based on the results of experimental research findings. These reports cover the entire field of agriculture and involve almost every important branch of natural and social science. The bulletins and other publications are a reliable guide to field practice. Their usefulness is generally recognized.

This policy of publishing experimental findings has resulted in a change in the farmers' attitude toward the Land-Grant Colleges. The attitude changed from one of skepticism to one of great confidence. The stations and the extension service must be given full credit for this change in the farmer's attitude. The importance of the effectiveness of publication of experiment station work is often not fully recognized by the workers themselves. It is one thing to discover new truth; it is another to present the truth in such a manner that the discoveries will have the widest possible use.

The authors of experiment station bulletins have been criticized by farmers and by newspaper writers on the grounds that the results are often expressed in the language of science, and that they are generally too conservative in suggesting applications. Scientists, on the other hand, have sometimes criticized the reports of agricultural investigations stating that there is too much tendency to popularize the subject matter. Sometimes the experiment station worker in reporting results devotes far
more time to a discussion of how his results were obtained than to stating as clearly as possible just what has been discovered.

The workers in agricultural experiment stations owe much to the agricultural papers and to the rural newspapers for the intelligent presentation of the results of agricultural research. These agencies have been exceedingly helpful in disseminating the work of the experiment stations and getting the results out to the farmer.
CHAPTER IV

AGRICULTURAL EXTENSION

The Smith-Lever Act

The Smith-Lever Act provided for cooperative agricultural extension work between the agricultural colleges in the several states and federal agencies. In 1908, a committee of the American Association of Agricultural Colleges and Experiment Stations requested legislation to promote extension work. After several changes in the Senate and House, the final draft of the Smith-Lever Act was passed by the two bodies and was approved by President Wilson on May 8, 1914.

The Smith-Lever Act (2, 3, 12) was intended to foster agricultural extension in the states and to coordinate the extension work of Land-Grant Colleges and the United States Department of Agriculture. The Act provided:

a. That extension work in agriculture and home economics should be carried on by the Land-Grant Colleges in cooperation with the United States Department of Agriculture.

b. That extension work should consist of informal instruction and practical demonstrations to persons not attending, or resident, in a Land-Grant College.

c. That each state was to receive $10,000 annually from federal funds and the following year additional amounts prorated on
the basis of rural population from a federal fund of $600,000 which should increase by $500,000 annually for 7 years and continue thereafter at a total of $1,100,000.

d. That the additional amounts of prorated federal funds must be matched by state or local funds raised or contributed within the state.

e. That to benefit from this act a state must assent to its provisions, and designate and certify a treasurer to receive and disburse the funds.

f. That each college receiving benefits must submit a statement annually to the Secretary of Agriculture covering the amount appropriated for the fiscal year.

The Smith-Lever Act began a new type of governmental activity in which the Federal Government was given a larger measure of control over work in the states than had been contemplated in any of the preceding legislation affecting the Land-Grant Colleges. It provided the necessary personal contact between the extension service and the farmer. It set up one distinct service combining all phases of agriculture under one head and so eliminated much of the duplication of effort in extension previously by the colleges, Department of Agriculture, and other governmental agencies.

This Act was the first to require that before the federal money could become available to the states, it must be matched by the states. That is, each state through its Legislature had to provide an equal sum of money as that given by the federal government. In this way the states
began to provide funds in increasing amounts for extension. The Smith-
Lever Act did not create the extension service, but placed it on a firm
financial basis and gave it nationwide recognition.

The extension service thus became a part of the land-grant educa-
tional system. The Smith-Lever Act was the greatest step forward which
the United States ever took to stimulate agricultural production which
has made the United States the leader of the world.

The Capper-Ketcham Act

The Capper-Ketcham Act (12) was to provide for the further devel-
opment of agricultural extension work between the agricultural colleges
in the several states receiving the benefits of the act entitled, "An
Act donating public lands to the several states and territories which
may provide colleges for the benefit of agriculture and mechanic arts,"
approved July 2, 1862, and all Acts supplementary thereto, and the United
States Department of Agriculture." On May 22, 1928, the Capper-Ketcham
Act was approved. This Act provided $1,480,000 additional federal funds
for cooperative extension work along the lines of the earlier Smith-Lever
Act.

Attention should be called to a section of the Capper-Ketcham Act
which provided that "at least 80 per cent of all appropriations under
this act shall be utilized for the payment of salaries of extension
agents in the counties of the several states." There was no similar pro-
vision in the Smith-Lever Act and in some states a difference of opinion
had developed between the state and federal authorities as to the
portion of the funds which should be devoted to specialists stationed at the Land-Grant Colleges in contrast with the expenditure for agents located in the counties.

**Purpose of Agricultural Extension**

The word "extension" means to extend information, that is, to carry it out to the rural people and others not regularly enrolled in classes of the college. The cooperative extension service, from its small beginnings in 1914, has grown to be major service to the American farmer and rural life.

Cooperative extension work in agriculture and home economics in the United States has grown into the largest organized out-of-school informal educational movement in the world. It includes men and women, boys and girls.

The general purpose of the cooperative extension program (3) is to promote the educational welfare of rural people by supplementing the work of the public schools and other educational agencies. This is accomplished largely through extension instruction in agriculture and home economics, although cultural and civic activities may be included as related subjects.

**Organization of Agricultural Extension**

The nerve center of the agricultural extension service is in the College of Agriculture. It is administered as a cooperative enterprise with the U. S. Department of Agriculture. The organization of the cooperative extension service is shown in Figure 3.
FIG. 3.— ORGANIZATION CHART OF THE COOPERATIVE EXTENSION SERVICE IN AGRICULTURE AND HOME ECONOMICS.
Project plans are initiated by the State Agricultural Extension Service. The state extension agents and the county and home demonstration agents are appointed by the Director of Extension. The broad policies of the extension service in the states are usually determined by the Dean of the College of Agriculture. The Dean is, or should be, the executive head of the extension service. In some states, there is a Director of Agriculture and Home Economics Extension. Under the Director of Extension there are usually state agents or assistant directors who are supervisors of the county agricultural extension agents. In some cases the supervisor of county agents is designated as a county agent leader. Similarly, there are home demonstration leaders and 4-H club leaders. In addition to these officials, there are in every state a certain number of extension specialists in soil, animal husbandry, field crops, dairy, poultry, horticulture, entomology, agricultural economics, and rural sociology.

The key workers in the cooperative extension service are the resident agents in the counties and their assistants.

The resident agents are: (a) the agricultural adviser, generally called the county agent; (b) the home demonstration agent; and (c) the boys and girls 4-H club agent.

The man selected as agricultural advisor is generally considered to be in administration control of the county extension office, although home demonstration agents and boys and girls agents and their assistants are allowed much independence in organizing and conducting their respective activities. Frequently, the agricultural agent is the only extension
worker employed in the county. The county extension agents, with the assistance of their local organizations and their district supervisors, plan the extension program for the county, submit it for approval to the county governing board or to the county advisory board, administer the program, care for local needs as they arise, report their activities, and account for expenses.

The county extension agent renders individual service when called upon. He trains the local leaders in conducting group meetings and holding them in their townships or communities. The agricultural and home economics extension work is managed at the Land-Grant College by the Director of Extension and his staff, that is, the extension service is organized as a division of the Land-Grant College. The Director of Extension is the coordinator between the Director of Resident Instruction and the Director of the Experiment Station and is ultimately responsible to the Dean of the College of Agriculture.

The Objectives of the Agricultural Extension Service are:

a. To improve farm earnings.
b. To improve standards of living.
c. To improve the social life of rural communities.
d. To improve health and rural life.
e. To develop leadership.
f. To lead people to take active part in local affairs.
g. To give opportunity to rural boys and girls.
h. To develop cooperation between individuals and groups.
i. To provide vocational training.

j. To assist in maintaining soil fertility.

The real objective of all the activities of the College of Agriculture, including the extension service, is the establishment in America of a permanent system of agriculture, carried on by intelligent, competent people with sufficient income to provide a good home and a satisfactory social community.

The Agricultural Extension Service is one arm of the college in accomplishing these objectives. The establishment of the agricultural extension service in each of the 48 states just before the beginning of World War I undoubtedly had a great influence upon the development of this branch of college work.

The County Agricultural Agent

The county agent is the representative in the local farm community of all that the College of Agriculture stands for (2). His primary function and first duty is putting all knowledge relating to agriculture to work. Broadly interpreted, this must include an intellectual program far beyond mere physical and material problems concerned with production. It must include economics, sociology, rural health, rural education, and community organization.

The county agent is regarded as the chief moving force in his county, dealing strictly with agricultural matters and rural people. The county agent is also a representative of the United States Department of Agriculture. He has no administrative authority. He may, by
educational methods, explain, clarify, and describe all state and government laws relating to agriculture, but he may not enforce such laws. He is in reality a teacher. He is a leader in a great adult education movement. His task is too great for one man. In some states, he has a large and adequate staff. The county agent system has come nearer to accomplishing the ultimate purposes contemplated in the federal laws which established the extension program.

The first county agent in the United States was appointed in Smith County, Texas, in 1906. By 1914 and before the passage of the Smith-Lever Act, there were 240 extension agents in 27 northern and western states.

**Agricultural Extension at the University of Arizona**

The Extension Service was established at the University of Arizona in July, 1914, after the passage of the Smith-Lever Act by the Congress (2, 9, 11). At that time the Extension Service was, and still is, peculiarly well-adapted to emergency service. It has direct contact with rural people day by day. The first great national emergency to develop after organization of the extension service was World War I. The other great emergency was the depression of 1929-1933. In 1933 the passage of the Agricultural Adjustment Act greatly increased the responsibilities and activities of the Extension Service. Since 1933 a very large part of the activities of the agricultural extension service has been in connection with the Agricultural Adjustment Administration.
In 1914 there was one county agent in Cochise County, but in 1915 the Extension Office appointed another agent. During the war, all counties except Mohave were supplied with regular or emergency agents. By 1920 twelve counties of the state had county agents, but Navajo and Apache were served by one agent. In 1924 Apache County was organized as a unit, and since that time there has been an agricultural agent in each of the regularly organized counties, twelve in number, except that the work was discontinued in Santa Cruz County in 1933. This is the only county in the state to discontinue the work after it had been regularly organized.

The dates on which the counties were organized for county agent work, with one county as the unit, are shown in Table 1.

Table 1. Extension Work in the Counties of Arizona

<table>
<thead>
<tr>
<th>County</th>
<th>Date of starting extension work</th>
<th>Number now employed (1957)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cochise</td>
<td>December 16, 1914</td>
<td>3</td>
</tr>
<tr>
<td>Maricopa</td>
<td>March 1, 1915</td>
<td>10</td>
</tr>
<tr>
<td>Yavapai</td>
<td>June 1, 1917</td>
<td>2</td>
</tr>
<tr>
<td>Yuma</td>
<td>September 1, 1917</td>
<td>6</td>
</tr>
<tr>
<td>Coconino</td>
<td>September 1, 1917</td>
<td>2</td>
</tr>
<tr>
<td>Pima</td>
<td>May 15, 1919</td>
<td>3</td>
</tr>
<tr>
<td>Pinal</td>
<td>July 15, 1919</td>
<td>6</td>
</tr>
<tr>
<td>Graham</td>
<td>August 15, 1920</td>
<td>12</td>
</tr>
<tr>
<td>Santa Cruz</td>
<td>August 15, 1920</td>
<td>21</td>
</tr>
<tr>
<td>Greenlee</td>
<td>October 16, 1920</td>
<td>12</td>
</tr>
<tr>
<td>Navajo</td>
<td>July 2, 1924</td>
<td>12</td>
</tr>
<tr>
<td>Apache</td>
<td>July 20, 1924</td>
<td>12</td>
</tr>
<tr>
<td>Gila</td>
<td>August 16, 1935</td>
<td>12</td>
</tr>
</tbody>
</table>
For each county mentioned above there is a county agent. His main duties and functions are as follows:

a. To advise any one who is interested in agriculture, including the farmers and the cattlemen.

b. To improve the practices of agriculture.

c. To enlist the interest of farmers co-operators who are willing to adopt new practices and demonstrate those practices in the field.

d. Result demonstration – The agent sometimes conducts a practical and scientific project on a farm to show the farmer how to fertilize and plant his crops to the best advantage. At the end when they harvest the product the agent shows the farmer the difference between the way formerly used and the new method.

e. To carry the latest information from the College of Agriculture to the farmer.

f. To help farmers organize their commodity organization, for example, a cooperative dairy.

g. To conduct 4-H club work, like organizing a club and showing how to administer it.

An illustration of county agent work with the farmer is shown in Plates VI and VII.

There is, perhaps, no member of the Land-Grant College staff who has received more favorable support from the farm people than the county agricultural agent. He is close to the people, visits their homes, farms
Plate VI. A county agricultural agent explains cotton harvesting to farmers.

Plate VII. Farmers' Field Day, Mesa Experiment Station.
and ranches, helps them with their crop production and marketing problems. To him the farmer can always go when in trouble or needing advice. The county agent gets the necessary information for the farmer either from the Experiment Station or other government sources. He helps with the county fairs and attends meetings of farmers to be of help when needed.

**Extension Relations With Other Agencies and Groups**

Extension has expanded and should continue to expand its effectiveness by working with organized groups and other agencies of government. Relations with such groups and agencies have generally been excellent. However, some improvements are needed. Though close cooperation with general farm organizations is highly desirable, formal operating relationships with such organizations may sometimes be detrimental to the public interest. The Department of Agriculture and the U. S. Office of Education should review their 1928 memorandum of understanding regarding relationships between extension and vocational agriculture and home economics to see if reported misunderstanding cannot be eliminated.

Better cooperation is needed in certain western states between extension and the Bureau of Reclamation regarding work with settlers of newly irrigated lands. In recent years there has been some evidence of an operational problem involving the extension services of some of the western states and the Bureau of Reclamation of the Department of the Interior.
For maximum service to rural people in the counties, all agencies and groups working in the field of agriculture should join together with farm people to build a county-wide program. Extension should take educational leadership in discussing such an approach. All agricultural agencies in each county should, where possible, be housed in the same building.

Extension encourages group action by encouraging the rural people to form organized groups: Home economics demonstration and 4-H clubs. Also, the extension service has a relationship to the general farm organizations (3) with which extension work has been associated in one way or another over the years, such as the National Grange, the Farmers Educational and Cooperative Union of America, and the American Farm Bureau Federation.

**The Home Demonstration Agent**

The work of home economics extension is primarily the responsibility of the home demonstration agent located in the county (3, 11). Her duties are similar to those of the county agent, except that while his activities are chiefly concerned with the business of farming, hers is with farm women and the farm home. Probably no one phase of extension work has made greater or more valuable progress in recent years than has home demonstration work.

These representatives have made a notable contribution in the field of adult education. More than one million farm women of the United States in 1940 were organized in nearly 50,000 extension clubs. These
clubs, meeting regularly for discussion and acquiring new knowledge on every phase of farm home management, child care, nutrition of the family, house decoration, home canning and preserving and consumer buying, are now a major extension activity.

Objectives in Home Demonstration Work: Home demonstration work is a part of the national system of extension work in agriculture and home economics, developed jointly by the United States Department of Agriculture and the Land-Grant College of Agriculture in the several states and territories. The fundamental aim of home demonstration work is the development of rural family life in attaining a higher plane of profit, comfort and culture.

Home demonstration work, as determined by needs expressed by rural people, includes the following objectives:

a. To develop desirable standards for home and community living.

b. To understand and appreciate the function and the relationships of the home in the social order.

c. To obtain and manage an income, both money and non-money, which will contribute to better living.

d. To promote and maintain health.

e. To discover, develop and utilize leadership, especially among rural women and girls.

f. To make such personal and family adjustments as are essential for individual and family security.

g. To develop civic consciousness and willingness to assume responsibility in contributing to public welfare.
h. To utilize the results of scientific research in relation to rural home and family life.

The 4-H Clubs

Probably no one enterprise of the extension service has received as much favorable attention and approval as 4-H Club work with farm boys and girls (4, 13, 20). The agricultural extension service is responsible for the widespread success of the 4-H Club project. The idea of organizing rural boys and girls around some farm and home project was early undertaken in Illinois, Iowa and Ohio. In 1908, Dr. Seaman A. Knapp organized the boys and girls club work with the aid of funds supplied by the General Education Board of the Rockefeller Foundation.

The Objectives of the 4-H Club Movement are:

a. To place before the boys, the family and the community in general an example of crop production under modern scientific methods.

b. To prove to the boy, his father and the community generally that there is more in the soil than the farmer has ever gotten out of it.

c. To give the boys definite worthy purposes at an important period in their lives and to stimulate a friendly rivalry among them.

d. To furnish an actual field example in crop production that will be useful to rural school teachers in utilizing the work of the school and correlating the teaching of agriculture with actual practice.
These objectives embodied the leading purposes of the boys club movement in the beginning. It was, however, not until 1914 and after the organization of the state agricultural extension services that club work became a significant part of the extension program.

A statistical analysis of the 4-H Clubs in 1939 shows that there were more than 1,000,000 rural boys and girls in 74,594 organized clubs actually working on 1,500,000 projects involving improved farm and home practices. These clubs were guided by 11,3,017 voluntary leaders.

Since the passage of the Smith-Lever Act, more than 7,500,000 boys and girls have been active members of 4-H Clubs. In 1915-1919 there were reported 300,000 club members, while in 1935-1938 there were 1,155,000 individuals working under competent local leadership and supervised by trained college men and women in the extension service.

What is 4-H Club Work? The 4-H organization (2) is the largest rural youth program in the world, over 15,000,000 boys and girls have taken part in 4-H Club work since its beginning only a few years ago. Every year more than 2,000,000 young people become part of this program. The club work is organized through the United States Department of Agriculture in cooperation with the agricultural extension service of every Land-Grant College. The county agricultural agents and home demonstration agents help local leaders and rural young people to organize and direct the work of local 4-H Clubs.
Basic Principles of 4-H Clubs:

a. The 4-H theme — improving family and community living.

b. The 4-H pledge: "I pledge my HEAD to clearer thinking, my HANDS to larger service, my HEART to greater loyalty, and HEALTH to better living, for my club, my community and my country."

c. Membership — 2,156,000 boys and girls from 10 to 21 years of age are enrolled in 89,600 4-H clubs in the United States. They carry out practical projects in farming, homemaking, under the direction of the cooperative extension service of the state Land-Grant Colleges and the U. S. Department of Agriculture.

d. Leadership — 357,600 volunteer 4-H adults and older 4-H members trained by extension workers serve as 4-H Club leaders.

Objectives of 4-H Club Work: Boys and girls' 4-H Club work is a part of the three fold program of the Extension Service and the U. S. Department of Agriculture cooperating with rural people. This program includes work in agriculture with men, in home economics with women, and in both agriculture and home economics with boys and girls. It is a nation-wide program, primarily educational in nature, rating second only to the public school system. Its purpose is to teach rural boys and girls from 10 to 21 years of age the latest and best agricultural and home economic practices and the finer and more significant things of rural
The state leaders, in their conference at the 1940 National 4-H Camp, suggested the following statement of the objectives of 4-H work:

a. To develop desirable ideals and standards for farming, homemaking, family life, community life, citizenship, leadership, and personal living.

b. To acquire skill in farming, homemaking, and community leadership.

c. To conduct farm, home and community projects or enterprises.

d. To develop an intelligent understanding and appreciation of nature and also the conservation of natural and human resources.

e. To develop a scientific attitude toward the problems of the farm, the home, and community.

f. To train in cooperative action as a means of increasing personal accomplishments and of solving community problems.

g. To develop desirable habits related to (a) healthful living, (b) intelligent use of leisure time, and (c) a rich, more abundant living.

h. To increase incomes, standards of living, and the satisfaction of rural life.

How is the 4-H Club Organized? If club work is new to the community, a preliminary meeting of interested rural leaders, parents and boys and girls is held (4, 13). At this meeting the organizer or the county agent can do the following things: (a) Explain what 4-H Club work is
and what its aims are, (b) outline what club members need to do, (c) list possible club members and projects they prefer, and (d) get the names and addresses of interested parents. Then the organizer and the county agent can visit the parents, talk with them about the project their boy or girl has chosen, and get the parents to help make such a project possible.

The 4-H Club Project: The project is the first requirement of 4-H Club membership. All activities center around the project, thus making it the backbone of 4-H Club work. A member without a project would be like a ship without a rudder; he would have no central interest to steer his course of activity. To become a 4-H Club member a boy or girl must enroll for at least one of the many projects listed by the state in which the member lives. Through his project work, the club member is taught improved practices which, in turn, serve as demonstrations for the community. He learns business principles by keeping the required records. The activities of 4-H Club work are shown in Plates VIII and IX.

By "project" is meant the animals raised and articles made by the members, or some other definite enterprise undertaken by members. The project should be one which fits well into the conditions of the community. It should be practical and provide some income, savings, or satisfaction to the club member.

Each club member must do personally the work required to complete successfully the project selected. When heavy work is involved, younger club members may have the help of adults. In all production projects each
Plate VIII. Fair exhibit of 4-H Club in Arizona.

Plate IX. 4-H Club members receiving awards at a fair for prize-winning sheep.
club member must have the animals or crops in his own name, or if one is on a partnership or share basis, he must have a definite arrangement with the other parties concerned, so that he is on his own responsibility and can make his own decisions about the care and management of his project.

Leaders should help club members select projects best suited to their individual conditions. Young club members should not undertake more than one project a year, but older ones find it desirable to carry several projects with them a year. Each state lists its own complete outlines of projects selected for that state.

The total individual boys and girls enrolled in 4-H Club programs in Arizona (20) for the twelve-month period (December 1, 1955 to December 1, 1956) was 3,530. This was an increase of 195 individuals over the twelve-month period (December 1, 1954 to December 1, 1955).

A statistical summary of Arizona 4-H Club work for 1956 is as follows (20):

13 counties carried 4-H Club programs.
3,530 club members; 2,162 girls, 1,368 boys.
247 = 4-H Clubs.
419 leaders; 83 girls, 54 boys.
5,270 projects; 2,871 home economics, 2,399 agriculture.
16 fairs with 4-H exhibits; State Fair 5 4-H Fairs.
10 County 4-H Fairs.
227 campers at one state camp.
4-H club members and 63 leaders roundup.
CHAPTER V

MILITARY SCIENCE AND TACTICS

One of the provisions of the First Morrill Act (12) was that the Land-Grant College should train young men in military science and tactics for the national defense.

At the University of Arizona instruction is offered in Military Science (U.S. Army and Air Science).

The integral military part of the University of Arizona is the Reserve Officer's Training Corps (R.O.T.C.) which was established under the provisions of an act of Congress on June 4, 1920. (National Defense Act (16). The School of Military Science and Tactics consists of two separate departments:

a. The Department of Military Science and Tactics (Army) which has about 734 students.

b. The Department of Air Science (Air Force) which has about 660 students.

These two departments are under the administrative control of a military coordinator, and all the civilian members of the University staff are appointed by the President of the University.

Reserve Officers Training Corps Organization

The President is authorized to establish and maintain in civil educational institutions a reserve officers' training corps, one or more
units in number, which shall consist of a senior division organized at universities and colleges granting degrees. It includes the state universities and institutions required to provide instruction in military tactics under the Act of Congress of July 2, 1862, which donated lands for the establishment of colleges where the leading object shall be practical instruction in agriculture and the mechanic arts, including military science and tactics. A junior division is organized at all other public and private educational institutions. Each division shall consist of units of the several arms, corps, or services in such number and such strength as the President may seem necessary, provided that no such unit shall be established at any institution until an officer of the regular army shall have been detailed as Professor of Military Science and Tactics. Neither would it be established until such institution has maintained under military instruction at least one hundred physically fit male students. The President provided further that no unit shall be established or be maintained in an educational institution until the authorities of the same agree to establish a two-year elective or compulsory course of military training as a minimum for its physically fit male students.

**Organization of the Enlisted Reserve Corps**

All members of the enlisted corps or some of them may be formed by the President into tactical organizations similar to those of the regular Army, similarly armed, uniformed and equipped, and composed as far as practicable of men residing in the same locality, may officer
them by the assignment of reserve officers or officers of the regular army, active or retired, and may detail such personnel of the Army, as may be necessary for the administration of such organizations and the care of government property issued to the student.

**Objectives of the School of Military Science and Tactics**

There are two main objectives in establishing the military schools:

a. In order to qualify students for positions of leadership in time of national emergency, and

b. To provide the nation with an electorate informed of the purposes and necessity of a sane policy of national defense and of the strength and weaknesses of our present system.

**Divisions and Units:** The Army ROTC is composed of three divisions (15):

a. **Senior division.** The senior division Army ROTC's are established to provide all or specific portions of a program of instruction consisting of the basic course (Military Science) and the advanced course. Units in the senior division consist of branch type (Infantry, Signal Corps, etc.) or general military science units. Units are established at the following types: (a) Degree-granting colleges and universities, and (b) Satellite college.

b. **Military School division.** The military school division army provides a program of instruction in essentially military
secondary schools and Junior colleges. The military schools
division program is limited to the essentially military
secondary schools and Junior colleges currently established.

C. Junior division. The Junior division Army ROTC consists of
training units established at the secondary level educational
institutions. These units conduct a 3-year course of instruc-
tion in military fundamentals comprised of military training
courses. A Junior Unit may be established at a single insti-
tution or may include several schools in a city, town or
county system. Each school in multiple-school unit conducts
the complete Junior program.

**General Requirements for Enrollment in ROTC**

To be eligible for enrollment in a division of the ROTC, a student
must be (a) male citizen of the United States, (b) not less than 14 years
of age, (c) regularly enrolled in the institution, (d) physically quali-
fied under standards prescribed in the army regulations, and (d) quali-
fied morally.
CHAPTER VI

OTHER NECESSARY DIVISIONS OF THE LAND-GRANT COLLEGE

Accounting Department

This department consists of a comptroller, a business manager, a purchasing agent, a director of residence and a manager of the mimeograph bureau, all of which are responsible to the comptroller, who is in charge of the over-all business and financial affairs of the University. The organization of the comptroller's office is shown in Figure 4.

Duties and Responsibilities of the Comptroller: The primary responsibility of the University comptroller is to receive and collect all funds properly due, to safeguard and account for such funds, and to insure that all expenditures from various funds are in conformity with the applicable regulations of the state, the federal government, and of the University. The comptroller reports directly to the President of the University and is the advisor on all financial matters to the President who has the final responsibility for all University operations.

Since many different funds are involved and the volume of expenditures in 1956-57 will exceed $12,000,000, various duties and responsibilities must be delegated to and carried out by several assistants who are composed of an assistant comptroller, two assistants to the comptroller,
FIG. 4.- ORGANIZATION OF THE COMPTROLLER'S OFFICE, UNIVERSITY OF ARIZONA.
an administrative assistant, a secretary and a stenographer. The assistants are classified as staff officers without line authority, except for the assistant comptroller who assumes line authority in the absence of the comptroller.

An integral part of the comptroller's office is the Business Office under the supervision of the chief accountant or business office manager. The chief accountant acts as a line officer with direct responsibility for the accounting and clerical personnel, for the details of fund accounting, payments of claims and related duties, and the preparation and payments of payrolls.

In addition to the general duties outlined above, the comptroller is also responsible for the following:

1. Preparation and control of the operating budget. Approximately half of the financial operations are governed by a formal budget that must be approved by the President and the governing Board of Regents. Each annual budget is based upon requests from various deans and department heads. Funds for the budget come from state appropriations, federal funds, student tuition and fees, and miscellaneous sources. The various departments are expected to confine their annual expenditures to their budget allocations.

2. He is the liaison officer between the university and the legal adviser to the governing Board of Regents for the purpose of obtaining opinions on legal matters between the University and the officials of the Board for execution of contracts and other formal documents.
3. He supervises and coordinates the financial operations for campus expansion, new building construction, land issues and financing for new construction.

4. He is the supervisor and financial adviser for the Student Union, the Mailing and Mimeograph department, General Stores, and purchasing agent.

5. He is the financial adviser to the Associated Students Association and the University bookstore.

6. The Manager of Student Housing is directly responsible to the comptroller for the operation of the dormitory system.

7. The comptroller is the trust officer for the Student Loan fund, making student loans and collections on loans.

8. He determines the classification of all students as to legal residence or non-residence in the state for the purpose of assessing the non-residence fee.

9. He is directly responsible for rental contracts for use of auditoriums by outside organizations, servicing and staffing of the auditoriums and the collection of rentals.

10. He has the joint responsibility with the Dean of the Fine Arts College for scheduling and contracting the University series programs.

11. He is custodian and investment officer for scholarship and endowment securities.

12. He renders annual and periodic financial reports to various government agencies and makes special reports and analyses for University officials.
13. He is the coordinator of the Air Force and Army R.O.T.C. Units on campus and supervises the department of the military property custodian.

14. He renders periodic service on numerous standing and special committees.

15. He is the rental agent for University property off campus.

16. He fulfills certain functions for University employees in connection with insurance, retirement, etc.

**The Business Manager:** Under this office comes the responsibility of accounting for all income and expenditures of the institutions. All collections except the state appropriations are received through the cashier's office who makes daily deposits to the appropriate accounts. This office is responsible for the assessment and collection of student fees upon registering.

Invoices are received from the purchasing department and other departments and activities and are processed and paid. The funds are divided into two main categories: state and local. Invoices on state funds are paid by claims against the State of Arizona and those on local funds by check on local banks. After the invoices are paid they are passed to the bookkeeping machine operators who charge them against each department's budget. Various other clerical assistants maintain subsidiary records, including payrolls and personnel records.

**The Purchasing Agent:** The purchasing agent receives requisitions for supplies, material or equipment from the various heads of departments.
He secures bids or prices as required, and writes the purchase orders. Goods are received by the general storekeeper and certified to the purchasing agent who then secures approval of the invoice for payment. The approved invoices are forwarded to the business office for payment.

The Director of Residence: The Director of Residence is in charge of all halls of residence on campus, both as to upkeep and occupancy contracts. The Superintendent of Buildings and Grounds is responsible for building maintenance. The Business Office maintains a financial record of each individual occupant. The Director of Residence assigns new students to rooms. Dormitories are partially supported by student rental and some support comes from state appropriations. The original building construction is financed from loans from the federal government. These loans with interest are repaid from student rental income.

The Mimeograph Bureau receives requisitions for mimeographing and multilithing from heads of the various departments. This unit is entirely self-supporting. It charges only enough in its personnel and equipment to maintain the needs of the departments.

Distribution of Income and Expenditures

The funds received by the University from federal, state and county sources are given in Table 2. The amounts received from the various Acts of Congress every fifth year since 1900 are shown in the respective columns. The amounts from Hatch, Adams and Purnell Acts increased to the maximum provided for in the respective Acts. The appropriations from the other sources also increased but have not yet reached a maximum.
Table 2. Funds Received by the University of Arizona from Federal, State, County and Private Sources, 1900-1956.

<table>
<thead>
<tr>
<th></th>
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<tr>
<td>1900-01</td>
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<td>$15,000</td>
<td>$5,000</td>
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<td>1905-06</td>
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<td>5,000</td>
<td></td>
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<td></td>
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<td>1910-11</td>
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<td>1915-16</td>
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<td>15,000</td>
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<td>$13,145</td>
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<td>18,863</td>
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<td>617,398</td>
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<td>50,000</td>
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<td>33,920</td>
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<td>60,000</td>
<td>12,422</td>
<td>87,109</td>
<td>22,613</td>
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<td>1945-46</td>
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<td>60,000</td>
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<td>15,499</td>
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<td>1955-56*</td>
<td>77,477</td>
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<td></td>
<td>212,766</td>
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<td></td>
<td></td>
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<td>3,683,004</td>
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</table>

* Additional federal funds allocated to the University of Arizona 1955-56: County funds, $54,099; Regional Research, $67,570; Title II $5,182. Total fee collections and farm sales, $1,224,374.
The total amounts given in the last column reflect the rate at which the University of Arizona has grown since 1900 up to the present time.

The distribution of the income is approximately as follows, using the amounts for 1955-56.

<table>
<thead>
<tr>
<th>Source</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>From federal sources</td>
<td>11%</td>
</tr>
<tr>
<td>From state appropriations</td>
<td>66%</td>
</tr>
<tr>
<td>From county funds</td>
<td>1%</td>
</tr>
<tr>
<td>From student fees and farm sales</td>
<td>22%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

In Table 3 the distribution of budgeted expenditures of the University for the year 1955-56 are given. In the circles are shown the expenditures from state appropriation and the total expenditures. This illustration shows that about 65 per cent of the money was spent for instruction, about 25 per cent for research and about 10 per cent for extension.

The following charts and table, furnished by Mr. Kenneth Murphy, University Comptroller, show the distribution of expenditures from the state appropriation and the distribution of expenditures from all sources for instruction, research and extension, excluding auxiliary enterprises, agencies and restricted funds. In this exhibit the direct and indirect expenses are listed in Table 3.
Table 3. Distribution of Budgeted Expenditures, University of Arizona, 1955-56.

<table>
<thead>
<tr>
<th></th>
<th>From state appropriation</th>
<th>Per cent</th>
<th>From other sources</th>
<th>Per cent</th>
<th>Total Expenditures</th>
<th>Per cent</th>
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<td>Instruction</td>
<td>$2,461,187</td>
<td>66.9</td>
<td>$957,711</td>
<td>52.0</td>
<td>$3,421,898</td>
<td>61.9</td>
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<tr>
<td>Research</td>
<td>1,038,571</td>
<td>28.2</td>
<td>324,981</td>
<td>17.6</td>
<td>1,363,552</td>
<td>24.7</td>
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<tr>
<td>Extension</td>
<td>180,246</td>
<td>4.9</td>
<td>559,682</td>
<td>30.4</td>
<td>739,928</td>
<td>13.4</td>
</tr>
<tr>
<td>Total</td>
<td>$3,683,004</td>
<td>100.0</td>
<td>$1,842,378</td>
<td>100.0</td>
<td>$5,525,378</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Expenditures from State Appropriation
$3,683,004

Total Expenditures
$5,525,378
The Registrar's Office

The Office of the Registrar and Director of Admissions is divided into two parts: the Admissions Office and the Registration Office, as shown in the organization chart, Figure 5. Each one of these offices has special tasks and duties.

Admissions Office: This office is the first one who deals with those applying for admission to the University. This office has the power to accept or reject a student. The Admissions Office examines the high school record, the age of applicants, their character and their psychological aptitude test to determine whether they may be admitted to the University. After that the Admissions Office sends the students to registration.

The University reserves the right to cancel admission or registration of an individual whose attendance at the University, in the opinion of the appropriate administration officer and the President, would not be mutually beneficial to himself or to the institution.

The Admissions Office furnishes the new student with application forms. These forms must be submitted to the Registrar and Director of Admission. This office also furnishes each applicant with a catalogue of the University.

The Functions of the Director of Admissions and the Registrar: The Director of Admissions has full authority to administer the policies established by the faculty. His duties are:
FIG. 5.—ORGANIZATION OF THE OFFICE OF REGISTRAR AND DIRECTOR OF ADMISSIONS.
a. To conduct correspondence with prospective students and to issue descriptive literature.

b. To pass on admission applications.

c. To keep records of inquiries received, applications processed, and students admitted or denied; to issue to the student his authorization to enroll.

d. To issue regular reports to the administration.

Registration is the second procedure which must be followed by the student after his admission. Every student is required to register at the University on designated days at the beginning of the academic year and at the beginning of the second semester. The period of registration for credit closes one week from the opening of classes.

The Registrar administers the plan of student enrollment and keeps all academic records. He serves as a member of the Administrative Council and of all committees which have a function related to student records. He is the chairman of the Catalogue Committee. His specific duties are:

a. To plan and administer the registration process.

b. To keep all academic records, including faculty reports and records of student achievement.

c. To issue official transcripts or other grade reports concerning students.

d. To certify candidates for degrees.

e. To prepare and keep the annual register of students.

f. To maintain an alphabetical file of all students who enroll.
g. To keep a numerical statistics on all students who enroll.
h. To prepare statistical reports.
i. To prepare a comprehensive annual report covering all phases of the records kept.
j. To serve as Secretary to the Faculty, the Advisory Council, and the Faculty Senate; to send notices of the meetings and keep records of the minutes.

Scheduling Procedure: On March 15 of each academic year, the Registrar's office sends forms to the departments so they may request certain hours and days on which they desire to teach their courses. A letter of instruction accompanies these forms.

Schedules are returned to the Schedule Committee and are checked as follows:

1. To see that catalogue and requests agree. For example, the catalogue states certain courses will be taught yearly during the first or second semester. Schedule requests must agree with this.

2. To see that fees, units, course numbers and descriptions agree with catalogue listings.

3. To determine that no new sections or courses are added at the critical hours (8:00, 9:00, 10:00 Monday, Wednesday, and Friday) and that large courses do not change hours without committee approval.

4. To see that one-third of the teaching hours (including laboratory hours) are in the afternoon.
5. To see that each department has made use of the Tuesday, Thursday, and Saturday morning sequences (there is no set amount on this as yet, but some departments are not teaching any courses on Saturday. Watch in particular music and mathematics).

6. Splitting of large classes into sections or into lecture and quiz sections. Such changes need the approval of the Advisory Council.

Letters are written to departments calling for revision and/or corrections of the schedule as decided by the Committee. Class rooms and laboratories are assigned to each course, taking into consideration:

1. **Class size:** The class list must be used as an estimate of size of classes. If there is any doubt, the previous year's class list should be checked and 10% added for increase in enrollment, on the original copy only, not carbon copy. This may involve trouble because certain old courses have been dropped and new ones substituted in the new catalogue. The answer to this may be to total last year's teaching hours for each hour and sequence and compare with the new request to see that it does not exceed the preceding year's at critical hours.

2. **Special equipment:** Certain courses need special equipment such as maps, etc. The things listed below are the special facilities needed by the teaching staff. The individual sheets contain a remarks section whereon such requests usually are noted: (a) speech classes need platforms where students deliver their addresses, (b) history courses usually use maps, (c) mathematics
courses need much blackboard space, (d) mathematics 81 needs a demonstrator slide rule, and (e) certain courses need projector service.

3. Seniority: Department heads should be scheduled close to their offices and their professors should be assigned in the better rooms if size is not a determinant factor. Fellows and new instructors are usually sent out to the more distant buildings. The Schedule Committee generally tries to continue older faculty in the rooms in which they have been before unless the room must be used for larger classes.

In the case of laboratories, department requests are usually honored unless a conflict is apparent. In that case, the department head is consulted.

Preparation of Catalogue Copy for Printer: After the final schedule is accepted by the committee, it is typed for the printer. One copy goes to the IBM Office so cards can be cut according to this schedule and one copy to the printer. The IBM copy becomes the file copy.

Records in the Office of the Registrar:

1. Matriculation Register: Each student entering the University is assigned a number. A record of this number is kept on a card with the student's name. These cards are filed alphabetically. A list of the number assigned, followed by the student's name, is kept in a ledger. This is set up in numerical order. The assigned number is used as a means of identifying
the student and as a count of the total number of matriculated students.

2. Permanent Record: For each matriculated student a permanent record card is provided, $8\frac{1}{2} \times 11$ inches in size, containing an academic history of his University career. Every course he carries and the grades he receives are entered on it, as well as admission data, identification data, scholastic failures (probation and disqualification) and achievements (honors and scholarships). This is the most important single record of the student's in the Registrar's Office.

3. Personal Files: A folder is kept for every student enrolled at the University in the regular session. This folder becomes the depository for letters about the student, admission forms, transcripts from other institutions, etc.

4. Registration Card: This is a one-semester record of the student's program from which the permanent record is constructed semester by semester.

5. Adjustments: Provision is made to allow for adjustments in the student's schedule. He may wish to drop one course and add another. The forms for such changes properly signed and approved become part of the student's accumulative record and the changes are entered on the permanent record. If the student's course record does not completely satisfy the catalogue requirements, it may be necessary for him to petition for substitution of one course for another. Or he may ask for a certain requirement to be waived, stating his reasons. Such petitions
must have the approval of the student's major professor, his
dean and favorable action by the faculty of his college. It
is then acted upon by the Advisory Council which may approve
or disapprove the request. Other adjustments by petition are
to be allowed to graduate in absentia, to be reinstated in the
University if disqualified and to receive graduate credit for
courses in excess of Senior requirements.

6. Delinquent and Probation Reports: At the middle and end of
each semester the Registrar prepares a list of students who
are failing in part or all of their course work. This list is
composed of two separate lists: one called the "Probation" or
50 per cent list and the other called the "Delinquent Report."
On the Probation list are given the names of students failing
in more than a limiting percentage of their course units (50
per cent for Freshmen and 40 per cent for Sophomores and upper
division students). This list is examined by the Scholarship
Committee of the several colleges and probation or disqualifi-
cation recommended to the Advisory Council.

The Delinquent list gives names of students who are fail-
ing in less than the limiting percentage for probation or are
on the borderline. These are warned by the Dean of the College
as may be deemed necessary. The Registrar notifies failing
students of any action taken by the Council. Disqualification
means suspension from the University for one semester. Students
are rarely disqualified at midsemester. Record of such action
is kept by the Registrar for each student who is failing. The purpose of such reports is to make the student aware that he cannot afford to neglect his work and expect to remain in the University.

7. Certification for Graduation: The Registrar must check the student's record and certify to the council and faculty that he has met all of the requirements for graduation. For this purpose special clerks are employed who know the requirements of the different colleges and determine whether all requirements have been fulfilled as required by the catalogue under which the student proposes to graduate. When the students have been certified and approved by the general faculty for graduation, the Registrar orders the diplomas to be presented at graduation.

The University Library

Every first-class university must have a library as the source of many kinds of information. As has been wisely said, the library is the heart of any great educational institution.

The University of Arizona library, constructed in 1925, is a three-story building at the main entrance to the campus. The building is completely air-conditioned. A new stack unit and reserve book room were completed in the fall of 1951.

The first floor houses the reserve book delivery room and study halls with seating for 300 students. A typing room is adjacent to the
reserve book delivery area. The second floor is the center of library activity. Here are the circulation desks, card catalogs, reading room and library offices. The main reading room is large enough to accommodate 300 students. The third floor is devoted to class and seminar rooms and rooms housing special collections.

The stack unit has a capacity of approximately 300,000 volumes. In the recently completed stack are 15 enclosed and sound-proof study cubicles for use by faculty members and students by special permission.

On July 1, 1951, the library contained nearly 250,000 accessioned volumes and more than 150,000 pieces of federal government documents. Uncounted are small collections of maps, manuscripts, and pamphlets as well as a collection of newspapers. Approximately 7,000 volumes are added yearly to the general collection. Some 2,000 periodicals and 60 newspapers are received currently.

Organization and Staff: The library is administered by a librarian who establishes the policies and regulations governing its operations. The organization of the staff is pyramidal in effect. Responsibility to the Librarian is the assistant who is also head of the acquisitions department. Below him are other departments each with a chief and staff of assistants: cataloging, reference (including documents) and circulation (including reserve book room). As illustrated in the organization chart, Figure 6, the library is organized by departments, of which there are (a) Acquisitions, (b) Cataloging (termed "Technical Service" departments), (c) Circulation, and (d) Reference (called "public service" departments). Each department has a head, and the head of the acquisitions department is also
FIG. 6.—ORGANIZATION CHART—UNIVERSITY OF ARIZONA LIBRARY
the assistant librarian. This group of department heads meets once a week with the Librarian, who is the library's chief administrative officer, to discuss policies and procedures. The Librarian is ultimately responsible for all policy decisions, but the advice of department heads and other staff members is nearly always sought by the Librarian in connection with policy-making.

Chief Functions of the Librarian: (a) Planning - this work must be done continuously. Awareness of curricular and other changes in the University is necessary for effective planning. The service program must be adequate to meet the needs of faculty and students, and all kinds of changes must be surveyed carefully so that if necessary plans can be made for altering or expanding the service program. (b) Organizing - this means the defining of functions and assigning them to appropriate departments or individuals on the staff, and defining the relationships between departments and individuals. (c) Staffing - this involves the employment of new staff members, promotion of staff members, or transfer of staff members from one position to another or from place to place. It also involves providing good working conditions, and good personal relationships. (d) Directing - this includes making decisions and issuing orders. It also involves general supervision of all activities in the library. (e) Coordinating - the Librarian must make certain that the activities of departments are properly interrelated, so that procedures in one department will be consistent with those in others. (f) Reporting - this means keeping the President or the Dean and other administrative officers informed as to the Library's achievements, its problems and its needs. This also means
keeping staff members informed on as many activities as is both possible and appropriate. (g) Budgeting - this involves the continuous appraisal of the needs of the service program, and the formulation of budget requests adequate to meet the needs. When funds are not adequate, it involves wise distribution of available funds for the essential or more important elements of the service program. It also involves control over and accounting for funds appropriated to the Library.

The Acquisitions Department: There are many functions required of this department.

a. To receive (and often initiate) recommendations for book purchases.
b. To check the general catalog and the "orders-out" and "orders-received" files to avoid duplications.
c. To verify bibliographic entries, in order that accurate information can be given to the dealer.
d. To select dealers from whom the books will be ordered.
e. To place orders for books, keeping appropriate records.
f. To receive books supplied, check records and claims for unsupplied items.
g. To process invoices and forward them to the Librarian for approval.
h. To forward books to the cataloging department.
i. To check all issues of journals and other serial publications, forwarding them to the stack or MRR.
j. To receive gifts of books and select those to be added to the collection.
k. To process books for re-binding and journals, magazines and other periodicals for binding.

The Cataloging Department: The Cataloging Department has the following functions:

a. To classify books according to the Dewey Decimal classification.
b. To prepare catalog cards — descriptive cataloging; assigning subject headings, etc.
c. To letter the spines with call numbers; place pocket inside back cover.
d. To forward books to the Circulation Department.
e. To establish entries for serial publications.
f. To add new issues of serial publications.
g. To re-classify and recatalog when necessary.
h. To repair worn copies of books.
i. To file catalog cards, shelf-list cards, etc.

The Circulation Department: The Circulation Department functions during all hours when the library is open. This department performs the following functions.

a. Shelves books in classified order in stacks; maintains that order continuously.
b. Fetches requested books from stack; lends them to the students and faculty.
c. Keeps records of all loans, and of all books located outside
the stack area; books on reserve in Reserve room in Humanities reading room, and books in Chemistry, Physics, and Pharmacy reading room.

d. Recalls books upon request of patron needing books not in stock.

e. Checks on overdue books; sends notices; assesses fines when books are returned.

f. Regularly searches for "missing" books; recommends replacement, if advisable, when books are marked "lost".

The Reference Department: The Reference Department exists primarily to satisfy requests for information from students, faculty, and members of the community. This department has the following functions: It assists students and faculty members in locating information and other materials they need; it selects and recommends the purchase of reference books; it maintains indexes of special kinds of materials; it receives and organizes the collection of government documents; it organizes and services collections of maps and handles all requests for interlibrary loans.

Interlibrary Loans: Such loans are obtained as follows: The faculty member or graduate student fills out a request form, giving author, title, and such other information as is needed to identify the book or journal volume needed. The borrower is expected to verify this bibliographic information before submitting his request to the reference department.

The Reference Department checks the information for accuracy. It then attempts to ascertain to which library the request should be sent.
For certain types of materials, the request is sent immediately to the University of California (Berkeley) Library, in other cases, directly to the Library of Congress. However, the bulk of the requests are sent to the Bibliographic Center at Denver, where a union list of holdings in the Rocky Mountain Region is maintained. This big center then ascertains the library holding the requested volume and forwards the request to that library.

If the volume is available, the lending library sends it to the University of Arizona Reference Department who informs the borrower that the book has arrived, and asks him to come for it. Occasionally the lending library specifies that the volume must be used only in the University of Arizona Library building, and is not to be taken from the building. The Reference Department abides by such instructions. The Reference Department makes certain that the book is returned within the specified borrowing period, and returns the book to the lending library, pays the postage on the return shipment, and reimburses the lending library for original transportation charges.

**Binding**: When the first issue of new volumes arrives, individual issues of preceding volumes are collected, collated, and processed for binding. A four-part binding slip is typed -- two copies to go to the binder, one kept in the Acquisitions Department, and one copy to go to the Circulation Department for filing in the location file.
The Physical Plant Department

The beginning of the Department of the Physical Plant at the University of Arizona is not too clear as to details. The department started as a one-man organization on completion of the Old Main Building in the late nineteenth century. This first employee was known as the Building Superintendent and his duties consisted of janitorial work, as well as heating and repairs to the building. As the campus grew with the addition first of a women's dormitory and then a men's dormitory, the building superintendent's organization grew with the addition of a janitor and gardener. The head of the department now became known as the Superintendent of Buildings and Grounds, a title which remained with the head of the department until the recent change in 1956 to that of Director of the Physical Plant.

The second era in the development of this department began in 1910 with the appointment of a young carpenter, Mr. William J. Bray, as its head. This man remained the Superintendent of Buildings and Grounds until his death in 1946. Mr. Bray was responsible for laying the groundwork of the present organization. Through his farsightedness the plans he laid down are still being developed with very little change, except as to details. By necessity, the organization has grown with the University until its complexities required highly trained personnel, not only in the category of arts and skills, but those of a technological nature that can be furnished only by a trained engineer. Including its head, the department now employs three professional engineers in the civil and mechanical fields.
Responsibilities: The Department of Physical Plant is charged by the President of the University with the responsibilities of maintenance, operation and repair of all the physical facilities on the University campus. In addition, it is charged with coordination of all future planning of physical facilities and the construction of the same.

Organization: The organization of this department is shown in Figure 7. The Director of the Department of Physical Plant is directly responsible to the President of the University. He is assisted by an Assistant Director who is also a professional engineer and who fills the position of Director in his absence. This assistant's main responsibilities are the design, plans, specifications and supervision of construction on all minor new construction, alterations and special projects. The six working sub-departments, each headed by a foreman, can be divided into two categories: (a) Operation and (b) Maintenance, repairs and new construction. The mechanical department is a combination of both categories. The boiler fireman and mechanics operate the central heating and refrigeration plant, as well as the equipment in the buildings. The plumbers and steam fitters are used mainly on repairs and new construction.

The electrical department, paint, and carpenter department confine their work entirely to maintenance, repairs and new construction of buildings and equipment of the campus. The grounds department is also divided into the two categories mentioned above. The custodians who are charged with clearing the buildings are an operating unit, while the functions of the upholsterer, locksmith and furniture repairman, mechanics and machinists work on maintenance, repair and new construction of equipment and installations.
FIG. 7.- ORGANIZATION CHART OF THE DEPARTMENT OF PHYSICAL PLANT, UNIV. OF ARIZONA.
Another function of the Department of Physical Plant is to maintain the security of the campus. This phase is handled by a nine-man police force who handle traffic, the opening and closing of buildings, night patrol and the keeping of peace, law and order. This police work is under the dual authority provided by the Board of Regents and the Pima County Sheriff's Office. The administrative records, payrolls, cost accounting and work orders are handled by an office manager who is assisted by a stenographer-secretary and payroll clerk.

Duties of the Director: The Director of Physical Plant is responsible for the maintenance, operation and repair of all physical facilities of the University campus. He is also responsible for the security, fire protection and coordination of all future planning of the physical facilities. He also acts in a consulting capacity to the Agricultural Experiment Station with regard to physical facilities on the University farms and Experiment Stations. The duties of the Director of Physical Plant are mainly of an administrative nature as there are assigned to him a staff of competent engineers and skilled craftsmen. In order to carry out the technical work required of this department, it is necessary that the Director have an engineering background; he should be a graduate engineer.

Transportation: Although not a part of the physical plant department, transportation is the responsibility of the Director. The University garage although operated on different funds, comes under the supervision of the Director of Physical Plant. The personnel consists of a garage manager who has charge of the direct supervision of the department and is respon-
sible directly to the Director of the Physical Plant. To help him he
has a dispatcher who takes all requests for transportation and assigns
the vehicles, keeps all administrative records and requests all supplies.
One full-time auto mechanic and helper maintain all vehicles. Student
chauffeurs are used to operate the buses and large trucks. All university
departments that do not require the full-time use of the vehicles
draw their transportation from the University Garage on a trip basis.
The expenses of this department as well as the purchase of new equipment
is financed by the rental of vehicles on a mileage basis to the various
University departments. The mileage rates range from 8 cents per mile
for passenger sedans to 30 cents per mile for buses. The garage operates
a total of approximately 70 vehicles, including passenger cars, station
wagons, buses, pickups, trucks and scooters. Departments of the University who have cars for full-time use maintain their own vehicles.

Funds: The principal source of funds to run the Physical Plant Depart-
ment are funds appropriated by the State Legislature. The majority of
such funds are budgeted directly to the Department of Physical Plant,
while approximately one-third are derived from special work orders from
other University departments.

**Student Housing**

It has already been mentioned in an earlier section that there is
a Director of Residence who is in charge of the administration of student
housing. See Figure 4.
Scope: Housing is provided at present for 1,049 men in nine halls and 816 women in six halls. There are two women's halls to house 368, and men's halls to house 364, now under construction. They will be ready for occupancy for the 1957-58 year. There are temporary housing units in Polo Village for 218 married veterans and their families.

Responsibilities: The Department of Student Housing is responsible for the business management and maintenance of all of the dormitories. The Dean of Men and the Dean of Women are responsible for the welfare, discipline, and counseling of the dormitory residents in the men's halls and women's halls, respectively.

Room Assignments: Upon admission to the University, the prospective student is sent dormitory applications along with other materials. If the student desires to live in a dormitory, he (or she) fills out the form and mails it with a $10.00 room deposit to the student housing office. When received the application is dated and a receipt sent to the student. A very accurate count is kept of the number of applicants according to classification, that is, resident, non-resident, and new or old students. After the deposit has been processed the women's applications are sent to the Dean of Women who makes the room assignments. The men are assigned by the Department of Student Housing. Beginning with 1957-58, all men students will be required to sign room contracts for at least one semester. These contracts will be mailed with the notice of assignment and must be returned, signed by the student and parents within 15 days.
Persons who do not move into their assigned quarters and do not cancel their reservations by September 1st will forfeit the $10.00 room deposit.

Checking In: Prior to the opening of the halls, a triplicate card form is made up for each student and sent to the appropriate hall. When the student moves into the hall he signs for all items of furniture and equipment given him on one of the cards. That card is kept by the head resident of the hall until the student moves out of the hall. At that time any shortages are marked and the student turns the card into the cashier for a refund of the deposit, less any shortages or damages due. The No. 1 card is sent to the Dean of Men or Dean of Women's office as their record of where the student is living. The No. 3 card is given to the student to present when he pays his rent.

Hall Organization: Each hall has a head resident in charge of all activities within the hall. In the women's halls a full-time, salaried woman is appointed who is responsible to the Dean of Women. She has one student assistant who receives the use of a room in return for her services. In the men's halls a married faculty member performs the duties on a part-time basis in exchange for a furnished apartment in the hall. There are several student assistants, usually one per corridor who receives a room in exchange for services. Each hall also has a full complement of elected officers to handle self-government and social affairs.

Facilities: Most of the dormitory rooms have the same basic furnishings, beds, dressers, closets, desks, study chairs, desk lamps, etc. Sheets
and pillowcases are provided and are laundered by the University weekly. Students must provide their own blankets, bedspreads, and towels. All halls have lounges, some have study rooms and the girls' halls have kitchen facilities for snacks and hall parties. Each hall has a telephone switchboard with student pages to answer calls and greet visitors. The women's halls have older full-time women as desk-hostesses in the evenings. One women's hall and two men's halls, as well as the ones under construction, are fully air-conditioned.

Rates: The standard room rents for double occupancy for one semester are:

- Graham, Greenlee, Coconino, and new halls (air-conditioned) $116.00
- Yuma and Gila 100.00
- Maricopa and Yavapai 92.00
- All other men's halls and Pima hall for women 88.00

The rent is usually payable in advance for the entire semester, but arrangements may be made to pay monthly. Rents are paid at the cashier's office and are posted on a rent record card which is maintained in the office of the student housing for each hall resident.

Finances: The dormitories are built, furnished, and maintained entirely from the rent collected. Salaries for all office help in student housing, part of the salaries for head residents in the women's halls and all wages for student help, maids, janitors, and desk-hostesses are also taken out of the dormitory income. New dormitories are constructed with money
borrowed from the Housing and Home Finance Agency of the Federal Government and from private investors.

**Student Health Service**

The student health service of the University of Arizona is maintained to look after the well-being of the resident students. Under the regulations of the University, no student is admitted who is afflicted with a contagious or infectious disease. Thus, this service is important in safeguarding the University against possible outbreak of disease epidemics.

**Health Fee:** Every student must pay a $1.00 health fee per semester. For this fee the student is given the complete physical examination at registration and medical and surgical care in less serious acute illnesses. House calls are made only in emergency cases. If an illness requires the service of an outside physician or a consultation is advised, the cost must be borne by the student.

Students who are ill are given infirmary care free for a period not to exceed three days each semester. After the third day, a charge of $3 per day is made. If the type of illness is such that the infirmary cannot take care of it, the student is sent to one of the hospitals and the student must pay all the expense incurred.

**Services:** The infirmary takes care of University students at any time their health requires it during the regular daytime hours, Monday through Saturday, and at other times in case of emergency. Also, there is in the
infirmary a registered nurse who is always on duty and in communication
with the physicians.

**Physical Examination:** Every new student, except members of the armed
forces and school teachers, who re-enter after an absence of one year or
longer, is given a complete physical examination, including an X-ray of
the chest, and other important laboratory tests. During the fall regis­
tration, a speech and hearing clinic on the campus is conducted which
makes a screening test of hearing of all incoming students. At the begin­
ning of the second semester a speech examination is added. A study and
correlation of the findings resulting from the examinations are carefully
evaluated in order to determine the student's physical ability to pursue
a chosen course of study and engage in the required military and physical
training.

**Treatment:** Students who report to the infirmary are given treatment.
Those found suffering from illnesses or injuries of sufficient severity
are offered bed care in the infirmary which has a capacity of twenty beds.
Students found to be suffering from any serious illness or injury, includ­
ing those requiring major surgery, are transferred to outside hospitals
and placed under the care of private physicians of their choice.

During the school year 1955-56, 3,32h complete initial physical
examinations and laboratory tests were made on new students. Fifty-seven
men students and fifty-four women students withdrew from the University
for health reasons. There were 11,433 treatments given in the clinic.
There were 451 patients who received bed care. However, many students
who were offered bed care refused, chiefly because of their desire to
attend classes regularly, or placed themselves in the care of private
physicians.

Finance: The capital investment for the health service during the past
ten or twelve years has been limited in scope and expense. However,
according to reliable information, the facility will be expanded during
the next ten years to take care of an anticipated 100 per cent increase
in the student population. In this connection, rough plans for this pro­
posed expansion have been submitted to the President of the University
for his consideration. During the school year 1955-56, there was no cap­
ital investment in the facilities of the Department of Health.

Private Medical Care: The student is entirely free to receive any or all
medical care from an outside physician, except for the entrance examina­
tions and laboratory tests. However, under such circumstances, students
will not be admitted to the University infirmary for treatment or care of
the ailment being given treatment by an outside physician.

Freshman and Transfer Students: Every new student is given a complete
physical examination including X-ray of the chest and certain important
tests during registration. This examination is repeated in the case of
any former student who has been absent from the University one year or
more and upon the return of any student who has withdrawn for reasons of
health. In each case completion of registration is subject to the appro­
val of the University physician.
The Arizona State Museum

A museum is a repository for historical material of all kinds. Every educational institution should have a well-organized museum for display of such material. It can be of great value for students in certain courses and of general educational interest to the public.

The Arizona State Museum had its beginning in territorial days. In 1893 "an act to create a territorial museum" was introduced in the State Legislature by George W. P. Hunt, at that time Representative from Gila County. This Act provided for "a territorial museum for the collection and preservation of the archeological resources, specimens of mineral wealth, and the flora and fauna of the territory." The Act further provided that the "museum be established at the territorial University in Tucson, and that it be under the control of the Board of Regents of the University."

The University of Arizona Register for 1901-2 contains this description of the territorial museum then in its first decade: Donations of specimens and collections were then and are now received and acknowledged with thanks, but no special provision has yet been made by the Legislature for the support of this department, aside from a small appropriation for the salary of a curator.

The Arizona State Museum may be said to fall into three general periods coinciding with the terms of office of its three Directors. The first period, under Herbert Brown, was the pioneer period when the ground was broken for those to come. During this time, the public interest in
the museum was not great, and it was only through the determination of
Mr. Brown that the museum continued to exist in anything more than theory.

The second period, during Dr. Cummings' directorship, was the
period of development and expansion. The third period, that of today,
under the direction of Dr. E. W. Haury, is one in which the museum can
make use of the heritage left by its former Directors and continue to
grow and develop on the firm base provided by them. The problem of inter­
preting the State of Arizona to both winter and summer visitors, of pro­
viding service to the schools throughout the state, and of interpreting
for the layman the scientific work of the University are some of the many
fields to which the now firmly established Arizona State Museum can con­
tinue to devote its efforts.

Collections: Acquisitions and dispositions are controlled by policies
established from time to time: Permanent acquisitions (other than those
collected by the Museum or Department of Anthropology). Anything of
value is acceptable as an outright gift. Unwanted objects are referred
to organizations where they will serve a better purpose. Temporary
acquisitions (loans) are only accepted if material is exceptional and
will serve a special purpose. Special exhibit material is received on
short-time basis, and for a special purpose. It is not catalogued but
photographed only. Cataloging is a routine procedure by type or class
of material. The materials are kept in a place and manner to preserve
them.
Exhibits: In the Museum routine the materials are prepared to show the materials to the public (like the school cases circulated by the Tucson Public School System) through loans determined individually but not for commercial use.

The Director: The Director of the Museum is the person who carries the responsibility to direct, administer and control his staff and office. He is the one through which all research should be cleared. The Director has assistants who help him in his work: a curator, a preparator, an attendant, an archaeologist and a secretary. The Director has the following specific functions: he prepares the budget, determines policies and directs the staff. He maintains public relations through talks, lectures and private contacts with individuals, and he carries on research. The organization of the Museum is shown in Figure 8.

Curator: His main duty is to have charge of collections, cataloging and storage or exhibition. He must protect the material against damage from moths, etc. He is the officer of public contact. He plans exhibits and carries on research on the material from excavations under special study.

The Preparator: The preparator has the following tasks. He designs exhibits, prepares labels, installs permanent exhibits, and plans and puts up temporary exhibits.

The Attendant: Safeguards exhibits and is on the floor at all times. He is in charge of the sales desk and gives out information to the public.
FIG. 8.- ORGANIZATION OF THE ARIZONA STATE MUSEUM
The **Archaeologist**: Supervises the archaeological salvage program, visits sites and conducts research on excavated materials.

The **Assistant Curator**: Catalogs specimens, films and documents and keeps records. He works with city school teachers in developing loan collections that go out to the schools and performs other miscellaneous duties as a public contact agent for the Museum.

**Program**: The Museum prepares programs other than the permanent exhibits. It sets up special exhibits using alcove and adjoining glass cases and smaller, movable cases if necessary. This special exhibit program runs from January through June, although special exhibitions may be held at other times of the year.

The Museum also has a special program for other museums by loaning materials on special request, individually determined. This is limited to replaceable materials only. A moving picture program, using documentary or high-class popular films, runs from October through early December. Every Tuesday night programs are given in conjunction with affiliated societies of the Museum.

**Budget**: The Director of the Museum is the only person who has the authority to set up the budget. It is primarily a problem of administration, for which suggestions may be called for from the staff.

**Public Relations**: The Museum facilities are made available to all qualified persons. The qualifications are decided on an individual basis. The Museum activities are slanted toward the layman. Individuals and
groups are given every possible assistance in making use of the Museum at all times. Guide service for groups is provided upon request.

**Information Desk:** Information and Guard—An attendant is at the desk at all times (including weekends) whenever anyone is in the Museum. Any inquiry requiring expert information is referred to the Museum Archaeologist or the Curator. The Museum services are extended through the sale of merchandise of related nature, such as pictures, postcards and booklets.

**Publicity:** Publicity is a very important aspect of every museum. It includes routine announcements of special exhibits, new permanent exhibits, etc., and preparation of material for folders.

**Research:** All research must be cleared through the Director of the Museum. Permanent labels are checked by as many different staff members as convenient -- always by someone in addition to the original writer. The use of all Museum materials by students must clear through the Department of Anthropology staff and access to storage by contact with Museum staff.

**Regulations:** There are some regulations which have been issued by the Director of the Museum in order to preserve the exhibit materials. For instance, there are in the Museum a dark room, a shop and a laboratory to be used (other than staff members) only by permit. There are strict regulations about smoking. Museum visitors allowed to smoke at tables where ashtrays are provided, but the staff is not permitted to smoke when
they are working with negatives, records, etc. Smoking is not allowed in the storage rooms.

Museum Office: The Museum contact with the public is provided through the Information Desk, by answers to inquiries concerning the exhibits.

Material Acquired by the Museum: Material may be acquired by the Museum through the following ways:

1. Gift - this is the most common way of receiving material.
2. Expeditions by the Museum and University staff through summer archaeological or paleontological excavations and week-end field trips.
3. Exchanges - objects received from persons or institutions in exchange for something the Museum has given them.
4. Purchase - either through regular Museum channels or by special means.
5. Loans - loans are accepted only if the material has definite value to the Museum for study or display. Usually a loan is accepted for a term of 10 years. The material becomes the property of the Museum at the end of this period unless called for before the expiration date. The material which has been acquired by loan may not leave the building unless the owner is first contacted and permission granted. Also, if it is on loan, the object may not be shown to groups of school children for fear it might be damaged. Material acquired by gift,
expedition, exchange or purchase is treated as a permanent Museum acquisition and may be used in any manner desired or may be sent out for a permanent loan.

The Student Union

Every American University has a center for the extra curricular activities of its students. The writer considered this to be unique in land-grant institutions and of sufficient interest to include in this thesis.

Big plans were afoot at the University of Arizona in the spring of 1950 as the construction of the Student Union Memorial Building was started. In May of 1951 the dining hall was first opened to students for limited use.

The road to building a student union was a long and difficult one. In November 17, 1951 the dedication ceremony took place with the unveiling of the eight-foot bronze plaque bearing the names of Arizona's 283 war dead of World War I and World War II. On the front of the building is the Student Union mural sculpture. This sculpture is a symbol of strife and turmoil, with a touch of the endless waiting and sadness of war.

Administration: There is a special committee for the administration of the Student Union. This committee supervises the work of the Student Union activities board office for all committees such as letters, questionnaires, forms and entry blanks. It keeps on file a record of all student union activities. The office is open from 10:00 a.m. to 4:30 p.m.
on weekdays and on Saturdays until noon. There is a secretary on duty in the office at all times. The Student Union is organized according to the chart, Figure 9.

**The Student Union Director and His Functions:** The Director is the guiding hand who supervises all services, facilities and functions. He is the administrative officer in charge of the operations within the building. The primary duty of the Director is to see that the student union is serving all members of the college family, students, faculty, administration, alumni and guests in the best possible manner. To accomplish this, competent department heads must be secured to handle the various operations. In actual operation of some of the departments — food service, post office, games room, maintenance — they are given much freedom in their procedure. They do their own hiring of employees, purchasing of supplies, and setting up of work schedules. The Director hires the administrative and financial staff and they work closely with him.

The Director is the liaison between the Student Union and the college community. All matters such as scheduling of events, lending and renting of equipment, hours of operation, complaints and suggestions, are first cleared through the Director's office and then passed on to the department heads.

In the programming and students activities within the building, the Director is the advisor to all these functions. He meets weekly with the Student Union Activity Board to plan coming events and to secure student viewpoints on the operation of the Student Union.
FIG. 9 - ORGANIZATION CHART OF UNIVERSITY OF ARIZONA STUDENT UNION.
He coordinates the departments. For information, weekly staff meetings of department heads are held. Thus, the Director keeps informed of problems within each area and helps in their solution. The final area of administrative decision comes from the Student Union Policy Board. This board is made up of faculty, administration, students and alumni. It makes up the board's general policies which determine such things as room charges and which groups might use the building and how often.

The Committees: Actually the Student Union is a combined activities, recreational and social center for all University students. The students organize the activities in the Union through the Student Union Activities Board. The members of this board are carefully chosen once a year in the spring from applicants who are interviewed by the Activities Board. The Administrative Committee takes care of all the administrative problems of the Student Union.

Besides the Administrative Committee there are many committees which carry duties and responsibilities such as:

1. The House Committee which has the following duties: (a) Making monthly building inspections of the Union and its facilities, (b) Planning the official decorations for the Student Union, (c) Checking decorating plans of organizations using the Union. Each organization is required to submit a plan of their decorations to the House Committee at least one week in advance of their dance, and (d) In general, it is responsible for seeing that the building is in good condition.
2. Recreation Committee. The Recreation Committee is responsible for scheduling all games, room tournaments, arrange for bridge and dancing lessons, and in general, plan recreational programs for the students.

3. Special Events Committee: This committee is head of the travel bureau, sponsors a photography contest, and is, in general, the committee which takes on special activities sponsored each year by the Activities Board.

4. Arts and Music Committee. The Arts and Music Committee plans and takes charge of the following activities: School and outside art exhibits, lariat theatre productions, student reading, hour speech recitals, programming of the TV set, buying of records and programming of music for the music listening room, magazine subscriptions and books for the browsing library.

5. Relations Committee. The Relations Committee of the Student Union forms the connecting link between the Activities Board, the public, and the students of the University. This committee is the official host of the Union to all visiting groups and guests. The Relations Committee strives to understand the students' needs at all times during the semester. Surveys are made which strengthen the link between the students and their needs which the Union strives to fulfill. The Relations Committee also plans the tours through the Union during Freshman Week.
6. **Bulletins and Records Committee.** The job of this committee is to put out for the Student Union Activities Board publications such as information pamphlets, calendars of events, and similar printed material. The committee also has the responsibility of recording the permanent picture history of the Student Union Building and the Activities Board in a scrapbook.

7. **Social Life Committee.** This committee is a member of the Student Union Activities Board and is expected to provide the students with a complete social calendar by coordinating Student Union activities with other campus functions. The Social Life Committee also sets the social code which is a standard of social conduct for University students.

8. **Publicity Committee.** The work of the Publicity Committee is to publicize the Student Union and Associated Students events. It also offers assistance to all student organizations. The means of publicity at its disposal include: the faculty blue sheet, sent to all fraternities and sororities; releases given to the Wildcat, town newspapers, and radio and television programs; banners, posters and mimeographed sheets distributed on campus.

9. **Assembly Committee.** This committee plans, organizes and presents all Student Union and Associated Student assemblies. Most of the talent comes from the University students themselves.
Post Office of the Student Union: The University-owned and operated post office offers 883 postal boxes to dormitory students free of charge. Students need only to inquire at the window for information about postal service.

The Alumni Association

An important aspect of every American University is its Alumni organization. The institution depends upon its graduates through this organization to assist in promoting its growth through legislation and other means.

The Alumni Association of the University of Arizona was established in 1897 as an incorporated association with the approval of the President of the University and the Board of Regents of the University.

Purposes of the Alumni Association: The objectives and purposes of this corporation and the general nature of the business to be transacted thereby are as follows:

1. To promote the interest and general welfare of the state.
2. To promote the cause of education.
3. To promote the objectives of the University of Arizona through the establishment and maintenance of contact between the University, its graduates, and its students — present, former, prospective, and otherwise.
4. To promote effective interest in and loyalty to the University on the part of its alumni and the public in general by promoting the general welfare and the best interests of the University.
5. To foster and encourage good scholarship by offering awards and appropriate means of recognition for excellence in scholarship athletic, literary, and all forms of educational endeavors, and awards to students, alumni, faculty and friends of the University for endeavors of various kinds contributing to the welfare of the University.

6. To acquire, hold, and dispose of in any manner, all kinds of real and personal property or interest therein.

7. In general, to carry on any business in connection with and incidental thereto, not forbidden by the laws of the State of Arizona and with all the powers conferred upon corporations by the laws of the State of Arizona.

The Alumni Association is not organized to make money or profit for any of its members. There is no capital stock issued by the association. All former students of the University of Arizona are eligible to membership and may become active members upon compliance with by-laws, rules and regulations of the association. Other persons may become members of the association as may be declared eligible to membership therein by the by-laws.

Alumni Fee: A charge of $10.00 life membership fee of the Alumni Association is made as part of the graduation fee since 1935.

Under the new plan, each student at the University pays $1.25 into the Alumni Association during first or second semester registrations. This makes a total of $10.00, the same amount previously paid at graduation,
for eight semesters. Summer school students are not required to pay the fee.

The Management: The affairs of the Alumni Association are conducted by a Board of Directors consisting of not less than ten or more than twenty-five persons. The Board of Directors each year shall determine the number of directors to be elected for the following year. The directors elected at each annual election serve for two years. Any vacancies occurring during a term of office may be filled by the President, subject to the approval of the Board to complete such term.

Geographic Alumni Clubs: Any group of alumni may unite geographically and constitute themselves as an Alumni Club of the association by:

1. Organizing in any manner they deem advisable and expedient to fit their geographic location and needs, including the selection of a president, two vice-presidents, a secretary and a treasurer, and such other officers as may be deemed advisable.

2. Notifying the executive-secretary at the Alumni office of the University of Arizona of the selection of the club president. The clubs may become affiliated with the University of Arizona Alumni Association, by furnishing the names of actual members, their current addresses and identification as to their college and class year. Upon receipt of the above, a charter is issued by the Board of Directors and sent to the designated alumni club president by the executive-secretary.
The Alumni Association promotes the interests of the University in different ways. Many of the graduates of the University are in positions of prominence in all walks of life. They are in a position to render useful service to the institution in time of need.
CHAPTER VII

AGRICULTURAL ASSOCIATIONS AND THE LAND-GRANT PROGRAM

There are several organizations in the United States which support and encourage the work of the Land-Grant Colleges. (3)

The American Farm Bureau Federation

The American Farm Bureau Federation is the largest single farm organization in the world. It started in 1911 with the first Farm Bureau in Browne County, New York. It is an organization of the farmers in the counties and states of the nation for group action. It has played an important part in the development of the agricultural extension program of the United States. The County Farm Bureau is the organization through which the county agent at its meetings can discuss farm problems. He can present results relating to the local agriculture, and he can inform the farmer on new methods of control of insects, fertilization, plant diseases, and irrigation problems which are of urgent importance at any particular moment. The Farm Bureau is powerful enough in its influence to bring about legislation in the State Legislatures and the Congress for the improvement of agriculture and the prosperity of the farmer.

The National Grange

In 1867, an organization known as the National Grange was formed, which has played a part in the advancement of agriculture in the United
States. It aims to bring the farmer and consumer into direct commercial relations and thus make it easier for the farmer to market his products.

American Association of Land-Grant Colleges and State Universities

Another organization is the American Association of Land-Grant Colleges and State Universities. It was organized in 1878 and includes the land-grant institutions of all the states and territories of Hawaii, Alaska and Puerto Rico. Its purpose is to maintain the standards of instruction, research and extension at the highest level possible. It promotes the passage of laws through the Congress for the progress and growth of these institutions. It sets up the standards for all phases of instruction in undergraduate and graduate work and seeks to improve the quality of instruction and training of its graduates for service in the many fields of agriculture, home economics and mechanic arts.
CHAPTER VIII

CONCLUSION

Possibility of Application of the Land-Grant System to Agriculture in Iraq

Iraq is one of the richest of the Arab countries in comparison with its area and population. It has a large amount of agricultural land, an abundant water supply for irrigation from three rivers, the Tigris, Euphrates and Diyala, and other natural resources which are not fully utilized yet.

The area of Iraq is 116,600 square miles. About one-third of the land belongs to private persons and two-thirds to the Government (amiriyah land). In Arizona about 16 per cent of the land is privately owned and 84 per cent is public land.

The land in Iraq has not been utilized to best advantage because the Iraqi farmer has not been trained in agriculture and extension work is still new. It seems that if the Land-Grant system could be established in Iraq, the agricultural production of the country could be greatly increased.

When the Land-Grant system was established in America, there were no colleges of agriculture. Therefore, to start these colleges the United States Government had to give land to the states. In Iraq a start has already been made by the government by giving land to the
Agricultural Directorate, about 27 years ago, in order to establish an Experiment Station at Abu Ghraib. In 1936 the Government granted land to the Ministry of Education to establish a secondary school of agriculture at Abu Ghraib. In 1952 more land was given to the then Ministry of Agriculture to build the College of Agriculture at Abu Ghraib. Some progress was made in agricultural teaching and research. At the same time, the Government started to appoint the graduates of the secondary school of agriculture as Supervisors of Agriculture in the different parts of Iraq. These supervisors helped the farmer. They might be called the first "extension" workers in Iraq. So we may say that Iraq already has a Land-Grant system of education.

The extension workers in Iraq today are under the administration of the Directorate of Social Service under the Ministry of Social Affairs, while the College and Experiment Station are under the Ministry of Agriculture. This arrangement does not promote the close cooperation which exists in the United States between their services.

The best way to serve the agricultural population of Iraq would be to coordinate the three services — the college, the experiment station, and the extension service — under a single administrative head. In this way they could handle the problems of agriculture through cooperation and help the farmer to do a better and more efficient job.

The simplest way to start would be to combine the College and the Experiment Station since they are so close together (only one Kilometer apart) and the farms are next to each other.
The advantage of such a combination would be that the Experiment Station staff could be used for teaching some courses and the College staff could handle some experiment station problems. In fact, most of the staff members would hold their position in both the College and Experiment Station. The libraries could be combined into one large and efficient library that could be used by students and the staff of the College and the Experiment Station. Also, the equipment could be used by both staffs.

In field-plot experiments it would eliminate needless duplication. The combination of scientific ability and exchange of ideas through discussion would result in better experimental work and better methods in agricultural practice. It would also make sure that the recommendations given to the farmers would be more uniform.

Extension work should also be combined with the College and the Experiment Station so that their staffs would have more chance to discuss agricultural problems. Extension agents can bring their problems to the College and Experiment Station to find out how to solve them. Through conferences of the entire teaching, research and extension staffs, all can learn from each other. Much good could be done in this way. The agricultural agents could invite the farmers for a meeting at least once a month in his county (or Liwa, in Iraq) to discuss their problems with them and teach them the newest scientific methods of agriculture.

The Land-Grant idea is a practical one and should be easy to put into operation in Iraq since a start has already been made. In America it has required ninety-five years from the time the Land-Grant Bill was
signed until today to develop the Land-Grant Colleges. It has been a slow development. One should not expect Iraq to make such a fundamental change in its administration of agriculture in the short time of only a few years, but Iraq may well start working in that direction. With the combined efforts of its college, experiment station and extension personnel, Iraq may well expect some of its most serious problems of agricultural production, soil salinity and drainage, animal and crop improvement to be solved. Perhaps then Iraq will once again become the Garden of Eden which it once was!
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