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Career Service Opportunities in the United States Department of Agriculture

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Agriculture Handbook No. 45
U. S. Department of Agriculture

CAREER SERVICE OPPORTUNITIES

In the United States Department of Agriculture

Prepared by Division of Employment, Office of Personnel

Agriculture Handbook No. 45
Supersedes Miscellaneous Publication No. 675, entitled "Opportunities Career Service in the United States Department of Agriculture"

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Foreword

This publication has been prepared in response to the numerous requests for information that have been directed to the Department. The material is necessarily in brief form but it is believed that the information on the organization, programs, and activities of the various bureaus and agencies of the Department may be helpful to those desiring it.

The requests for this information have come from colleges and universities, from associations, societies, and many scientific groups, as well as from individuals. The Association of Land-Grant Colleges and Universities has also urged the preparation and dissemination of information which would be helpful in counseling students about employment opportunities in the Federal service in the field of agriculture. As the Department is so constantly in need of trained and competent personnel to do the work in the many functions required by law, I am pleased to offer this publication to those seeking career service in the Department.

T. Roy Reid,
Director of Personnel,
U. S. Department of Agriculture.

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CAREER SERVICE OPPORTUNITIES IN THE UNITED STATES DEPARTMENT OF AGRICULTURE

General Statement

The Department of Agriculture was created by an act of Congress May 15, 1862. However, the first appropriation for agricultural purposes in this country preceded this date by more than 20 years and the work was carried on in the Patent Office without special authorization.

The initial appropriation specifically for agricultural pursuits was made in 1839, when Congress allocated the sum of $1,000 to the Patent Office to be spent mainly in the "collection and dissemination of agricultural statistics and of valuable plants and seeds." This work grew rapidly and in 1849, 10 years later, was transferred to the then new Department of Interior, where it remained until the creation of the Department of Agriculture in 1862.

In 1889 Congress made the Department's head a member of the President's cabinet. From about 1900, the work of the Department has shown unusual growth—many new responsibilities have been added, resulting in new agencies and increased personnel. The Department employs an average of 70,000 persons assigned to its constituent agencies which are responsible for the administration of its various programs.

The functions of the Department of Agriculture are many. The term "agriculture" in this case means more than the literal translation "field cultivation," of the Latin words from which it was derived. "Field cultivation" is only one of the Department's functions. It works on the science of shaping and conserving the land; the preservation of the forests; it deals with the raising and harvesting of crops; it deals with the feeding, breeding, and management of livestock, and it is concerned with the processing, grading, inspection, transportation, marketing, and storage of the many plant and animal products which are useful to man, and with research in all of these fields.

The Department's research program is very comprehensive. It covers research on food, clothing, diseases of man, animals and plants, control of harmful insects, and the many phases of production and marketing. This research has made possible many phases of the improved standard of living, among which are the better health conditions—the protection against disease—the powerful drugs by which quick recoveries from serious illnesses are effected—information on clothing fabrics—the widespread knowledge of food values and the greater production, with less effort, of better agricultural products. Farther on in this publication, specific information is given on the types of research carried on by the various agencies of the Department.

Another field of endeavor in the Department is the work of its credit agencies. These agencies lend money to the farmer to keep him from losing his farm, to help him with needed repairs or to aid him in effecting worthwhile improvements. The credit system has been the pacemaker in introducing farm lending practices better adapted to the farming business. This has included, among other things, the lowering of interest rates, repayment terms adapted to farm conditions, amortized loans, future payment funds, and budgeted loans.

In the pages which follow, there are brief statements about the work and accomplishments of the separate agencies of the Department and of the opportunities for interesting and challenging jobs which the Department affords.

Specialized Positions Described in This Publication

Position	*Described under—*	*Pag*
Accountant	Commodity Exchange Authority	34
	Federal Crop Insurance Corporation	50
Actuary	Federal Crop Insurance Corporation	50
Administrative officer	Federal Crop Insurance Corporation	50
Agent (county extension)	Extension Service	34
Agricultural bacteriologist	Bureau of Dairy Industry	22
Agricultural economist	Farm Credit Administration	38
	Federal Crop Insurance Corporation	50
	Production and Marketing Administration	43
	Bureau of Agricultural Economics	6
	Office of Foreign Agricultural Relations	9
Agricultural engineer	Bureau of Plant Industry, Soils and Agricultural Engineering	30
	Rural Electrification Administration	45
Agricultural statistician	Bureau of Agricultural Economics	6
Agriculturist	Federal Crop Insurance Corporation	50
Agriculturist (foreign)	Office of Foreign Agricultural Relations	9
Agronomist	Bureau of Plant Industry, Soils and Agricultural Engineering	30
Analyst	Commodity Exchange Authority	34
Analyst, records management	Plant and Operations	15
Animal husbandman	Bureau of Animal Industry	20
Appraiser (land bank)	Farm Credit Administration	38
Architectural engineer	Plant and Operations	15
Attorney	Office of the Solicitor	17
Bacteriologist	Agricultural and Industrial Chemistry	19
Bacteriologist (agricultural)	Bureau of Dairy Industry	22
Bacteriologist (foods and nutrition)	Bureau of Human Nutrition and Home Economics	28
Bibliographer	Library	8
Budget reviewer	Office of Budget and Finance	9
Cataloger	Library	8
Chemical engineer	Agricultural and Industrial Chemistry	19
Chemist	Agricultural and Industrial Chemistry	17
	Office of Experiment Stations	32
Chemist (Textiles and Clothing)	Bureau of Human Nutrition and Home Economics	28
Cotton technologist	Agricultural and Industrial Chemistry	19
County extension agent	Extension Service	34
Dairy husbandman	Office of Experiment Stations	32
	Bureau of Dairy Industry	22
Dairy manufacturing technologist	Bureau of Dairy Industry	22
Editor	Office of Information	13
Electrical engineer	Rural Electrification Administration	45
Engineer	Soil Conservation Service	49
Equipment engineer	Plant and Operations	15
Entomologist	Bureau of Entomology and Plant Quarantine	24
	Office of Experiment Stations	32
Farm credit examiner	Farm Credit Administration	38

Position	*Described under—*	*Page*
Farm management supervisor	Farmers' Home Administration	38
Fiscal inspector	Office of Budget and Finance	9
Forester	Forest Service	42
Geneticist	Bureau of Animal Industry	20
Hearing examiner	Office of Hearing Examiners	17
Home economist	Farmers' Home Administration	40
Home economist (food and nutrition)	Bureau of Human Nutrition and Home Economics	28
Horticulturist	Office of Experiment Stations	32
Illustrator	Office of Information	13
Indexer	Office of Information	13
Information specialist	Office of Information	13
Investigator	Commodity Exchange Authority	34
Librarian (field)	Library	8
Librarian (reference)	Library	8
Library assistant	Library	8
Marketing specialist	Production and Marketing Administration	43
Marketing specialist (international)	Office of Foreign Agricultural Relations	9
Motion picture technician	Office of Information	11
Photographer (motion picture)	Office of Information	11
Physicist	Agricultural and Industrial Chemistry	19
Placement officer	Office of Personnel	13
Plant pathologist	Bureau of Plant Industry, Soils and Agricultural Engineering	30
Plant quarantine inspector	Bureau of Entomology and Plant Quarantine	24
Position classifier	Officer of Personnel	13
Poultry husbandman	Bureau of Animal Industry	20
Publication clerk	Office of information	13
Range conservationist	Soil Conservation Service	49
Soil conservationist	Soil Conservation Service	47
Soil scientist	Soil Conservation Service	47
Telephone engineer	Rural Electrification Administration	45
Textile technologist (textiles and clothing)	Bureau of Human Nutrition and Home Economics	28
Training officer	Office of Personnel	13
Veterinarian	Bureau of Animal Industry	20
Zoologist (parasitology)	Bureau of Animal Industry	20

Opportunities in a Job With the Department of Agriculture

The Department of Agriculture has a wide range of positions open to those with agricultural, scientific, and administrative training. For qualified, able persons desiring a career in the Federal service there are many opportunities for interesting work. Applicants must pass a civil-service examination before being appointed to most positions. Examination announcements are issued by the Civil Service Commission as the needs for recruitment arise. Since the authority to employ personnel is decentralized, information concerning employment may be obtained from employment officers of the Department headquartered at locations throughout the country. Employment officers are glad to talk to applicants about employment—to explain the objectives and accomplishments of the individual agencies of the Department and to answer questions that arise in connection with employment possibilities.

It is the policy of the Department to use the skill, qualifications, and experience of each employee to the fullest extent practicable by placing him in the position for which he is best fitted, in which he will be satisfied, and in which he will give his best performance. From the time an employee enters on duty he is aided and encouraged not only to increase his knowledge of his job, but to take advantage of opportunities to supplement his education for the purpose of developing his capabilities to the fullest. In seeking employees who are qualified and eligible for promotion, reassignment, or transfer, the policy is to consider first employees within the immediate office of the agency in which the vacancy occurs, and then in ever-widening circles of jurisdiction, if necessary, such as the region, then the agency as a whole, and finally the Department.

Persons interested in professional or scientific work have ample opportunity to be recognized professionally. The Department publishes a wealth of information about all phases of agriculture, and Departmental publications are distributed throughout the United States and foreign countries. When published, credit is given to the persons responsible for their contents and preparation.

Exhaustive research is conducted by the Department on practically all phases and aspects of agriculture. Professional papers are presented by employees before interested societies; many noteworthy accomplishments are recognized by fellow scientists in this way. Employment by the Department in certain professional or scientific positions qualifies employees for membership in professional societies and organizations. Opportunities are excellent for association with other specialists engaged in similar types of professional work. Employees who are specialists in their fields are often made available to other departments of the Federal service, and even to foreign governments, to assist with particular problems, to train persons, to accomplish new activities or to install new agricultural programs.

There are numerous and varied opportunities for employees of the Department to increase their educational training. Efforts of this character result in widened professional ability of the employee and contribute materially to success in the Department. The United States Department of Agriculture Graduate School was established in 1921 to stimulate and encourage post-entry education and to afford opportunities for the education and training of employees of the Department. Its enrollment in 1951–52 was 5,927 students, practically all from among employees of the Federal Government. The curricula reflecting the interests and needs of the Federal service in various levels and types of work, consist chiefly of courses in the biological, physical, and social sciences, in languages and literature, in mathematics and statistics, in public administration, in Federal clerical and administrative techniques, and in the mechanical arts. While degrees are not conferred, credits toward degrees are recognized by most educational institutions. Many employees are granted periods of leave

without pay from their positions in the Department in order to pursue full-time studies in colleges or universities. This is in line with the Department's desire to assist employees in becoming better equipped for advancement in the career service of the Government.

In Washington, as well as in other headquarters cities throughout the country, schools and colleges offer night courses that allow employees to continue their training after work hours.

Active-service training programs in the Department are conducted for the purpose of fitting employees to perform their duties with understanding and efficiency and to help them accept additional, more responsible duties.

Conditions of Employment in the Department

Salary Schedule

Below is a table showing annual salary rates by grades and schedules, depending upon the type of assignments included in each job. The letters GS and CPC beneath "Schedule and Grade" on the left-hand side of the page are abbreviations for the various schedules as follows:

GS—General schedule which includes clerical, administrative, fiscal, subprofessional and professional, and scientific positions (such as administrators, clerks, fiscal officers, marketing specialists, scientific aids, library assistants, research scientists, engineers, chemists, soil conservationists, etc.)

CPC—Crafts, protective, custodial (including positions as guards, carpenters, mechanics, laborers, etc.)

SALARY SCHEDULES

Schedule and grade	Beginning	Intermediate					Top
GS–1	$2, 500	$2, 580	$2, 660	$2, 740	$2, 820	$2, 900	$2, 980
GS–2	2, 750	2, 830	2, 910	2, 990	3, 070	3, 150	3, 230
GS–3	2, 950	3, 030	3, 110	3, 190	3, 270	3, 350	3, 430
GS–4	3, 175	3, 255	3, 335	3, 415	3, 495	3, 575	3, 655
GS–5	3, 410	3, 535	3, 660	3, 785	3, 910	4, 035	4, 160
GS–6	3, 795	3, 920	4, 045	4, 170	4, 295	4, 420	4, 545
GS–7	4, 205	4, 330	4, 455	4, 580	4, 705	4, 830	4, 955
GS–8	4, 620	4, 745	4, 870	4, 995	5, 120	5, 245	5, 370
GS–9	5, 060	5, 185	5, 310	5, 435	5, 560	5, 685	5, 810
GS–10	5, 500	5, 625	5, 750	5, 875	6, 000	6, 125	6, 250
GS–11	5, 940	6, 140	6, 340	6, 540	6, 740	6, 940	.....
GS–12	7, 040	7, 240	7, 440	7, 640	7, 840	8, 040	.....
GS–13	8, 360	8, 560	8, 760	8, 960	9, 160	9, 360	.....
GS–14	9, 600	9, 800	10, 000	10, 200	10, 400	10, 600	.....
GS–15	10, 800	11, 050	11, 300	11, 550	11, 800	.....	.....
GS–16	12, 000	12, 200	12, 400	12, 600	12, 800	.....	.....
GS–17	13, 000	13, 200	13, 400	13, 600	13, 800	.....	.....
GS–18	14, 800	.....	.....	.....	.....	.....	.....
CPC–1	1, 810	1, 870	1, 930	1, 990	2, 050	2, 110	2, 170
CPC–2	2, 420	2, 490	2, 560	2, 630	2, 700	2, 770	2, 840
CPC–3	2, 552	2, 632	2, 712	2, 792	2, 872	2, 952	3, 032
CPC–4	2, 750	2, 830	2, 910	2, 990	3, 070	3, 150	3, 230
CPC–5	2, 974	3, 054	3, 134	3, 214	3, 294	3, 374	3, 454
CPC–6	3, 200	3, 280	3, 360	3, 440	3, 520	3, 600	3, 680
CPC–7	3, 435	3, 535	3, 635	3, 735	3, 835	3, 935	4, 035
CPC–8	3, 740	3, 865	3, 990	4, 115	4, 240	4, 365	4, 490
CPC–9	4, 150	4, 275	4, 400	4, 525	4, 650	4, 775	4, 900
CPC–10	4, 565	4, 690	4, 815	4, 940	5, 065	5, 190	5, 315

The column entitled "Beginning" shows the entrance salary of each grade. When an individual enters the Federal service, he must initially be paid the entrance salary rate of the grade.

The "Intermediate" salary steps are for the purpose of promotion within the grade. If the employee's services and conduct are satisfactory, he is automatically promoted at regular intervals (once a year if his entrance salary is less than $5,940; once every year and a half if his entrance salary is $5,940 or above) to the next higher salary rate. This continues until the "top" salary rate of the grade is reached, unless, in the meantime, he receives promotion to a higher classification grade; for example, from GS–5 to GS–6.

Hours of Work

In general, employees of the Department have a 40-hour workweek, 8 hours a day from Monday through Friday. For a very small percentage of employees, irregular tours of duty which comprise more than 5 workdays, but not more than 40 hours a week, have been established. This is because of the type of work the agency performs. The 5-day workweek makes it possible for employees to perform their duties with maximum efficiency and still conserve their health by affording ample opportunity for relaxation and rest. If important work is behind schedule, occasional overtime may be necessary. Employees required to work extra hours beyond the 40-hour week either receive additional pay or are granted compensatory time off.

Government employees are given eight national holidays each year. When these holidays fall on Sunday, the holiday is observed on the following Monday.

Compensation and Medical Benefits

If an employee becomes ill or is injured and the cause is found to be attributable to his official duties, he is entitled to free medical attention and hospitalization, as well as compensation benefits, provided by the Bureau of Employees' Compensation.

The compensation benefits become payable if the injury or illness incurred in line of duty necessitates the employee's absence from duty for a sufficient period that he is in a nonpay status from the Department for more than 3 days. Under certain circumstances the employee may later be paid for the 3 days in nonpay status. An employee may be granted all of his allowable sick leave and annual leave and receive full salary for the period of such sick leave and annual leave before receiving the compensation benefits described above, or he may elect to receive the compensation benefits beginning with the fourth day of absence from duty and save the sick leave and annual leave to his credit.

Leave Benefits

The leave benefits of the Federal service are designed to maintain the health, efficiency, and morale of employees at a high level. There are three main types of leave, as follows:

Annual or vacation leave.—Employees earn annual leave on the basis of length of service. Employees with less than 3 years of Federal service earn 13 workdays of annual leave with pay each year. Employees with 3 to less than 15 years of service earn 20 days of annual leave each year. Employees with 15 or more years of service earn 26 days of annual leave each year. This leave is intended for vacation purposes or to permit employees to be absent from duty for personal reasons during the workday without loss of pay. Annual leave may be taken in units of 1 or more hours at a time. If an employee leaves Government service, he does not lose the annual leave he has accumulated, but is paid a lump sum for the amount. No charge is made against annual leave for nonworkdays, such as holidays, Saturdays, and Sundays occurring within a period of annual leave taken.

Sick leave.—Employees earn 13 days of sick leave with full pay each year. Such leave may be taken if an employee is unable to work because of illness. It may also be used for medical, dental, or optical treatment or examination. Unused sick leave accumulates without limit. This affords employees financial protection if they have long illnesses or have to be hospitalized.

Military leave.—Employees who are members of the National Guard or one of the reserves of the Army or Navy are entitled to a maximum of 15 calendar days of military leave each year with full pay (and without charge against annual leave) for the purpose of military training, instruction, field exercises, and so forth.

Leave without pay.—In the Department of Agriculture leave without pay may be granted (provided the employee intends to return to his job) for many reasons—for attending educational institutions if the research or course of study to be pursued will result in increased job ability applicable to the Department's work, for military service in order to retain active

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reserve status, or for various emergencies which may arise. It may be granted in case of an extended illness so that the employee may have time to recover.

Beneficial and Recreational Organizations

For social and recreational activities, groups are active in contributing to the social development and well-being of the participating employees. An Athletic and Recreational Association and a Welfare Association operate in Washington as well as at any headquarters city where sufficient interested employees participate. Dramatic groups are active, and bowling, bridge, and book clubs have been formed. In Washington, there are sufficient members of the American Legion to have their own very active United States Department of Agriculture Post. United States Department of Agriculture clubs have been formed in 80 cities throughout the country and are composed of all Department employees in each city. The Agriculture Beneficial Association, a mutual nonprofit organization, offers insurance to all Department of Agriculture employees at very reasonable rates, regardless of where they are stationed. Various other organizations are concerned with the working conditions and general welfare of all employees.

Credit Unions

Credit Unions have been set up both in Washington and at headquarters cities in the field for the benefit of employees. Members save money by purchasing shares and may borrow if the credit committee approves the loan application. Loans are made for worth-while purposes and are usually repaid by installments due each month, with a low rate of interest.

Payroll Savings Plan

The Department's system of payroll savings makes it easy for employees to save by buying United States Savings Bonds. An employee may designate the amount he wishes to set aside for bonds, and automatically each payday that amount will be deducted from his salary check. If the employee wishes to increase or decrease the amount he invests in bonds, he may do so at any time by notifying his payroll office.

Retirement System

The Federal retirement has always been one of the best of the participating or purchasable systems. On April 1, 1948, it was improved by an amendment to the retirement law. Participation in the Federal retirement system is mandatory for employees serving under permanent appointment.

Among the new provisions of the retirement system are the widows', widowers', and children's benefits. For example, upon the death of a married male employee who has completed at least 5 years of civilian service, if he leaves a widow and children, the widow is entitled to an annuity beginning the first day of the month following the employee's death. This annuity is equal to one-half of the amount that was due the employee at his death and is paid the widow until she dies or remarries. In addition, each child is paid an annuity which continues until he reaches the age of 18. If he dies or marries before reaching the age of 18, the annuity is discontinued.

If an employee is survived by his widow only, she is entitled to an annuity at the age of 50, equal to one-half of the annuity due at the time of his death. The annuity is payable until she dies or remarries.

Before the new law, no annuity provision was made for the family of an employee who died in the service.

Some interesting points of the retirement system follow:

1. Employees may retire optionally as follows:
   At 60 years of age with 30 years of service.
   At 62 years of age with 15 years of service.
   At 55 years of age with 30 years of service (with reduced annuity).
2. Employees are automatically retired at 70 years of age if they have had 15 or more years of service.
3. If employees are disabled because of illness or injury after they have had five or more years of service, they may retire because of disability.
4. If an employee dies in the service after he or she has worked five or more years, annuity benefits are provided for his wife (or her husband) and children, and if there is no widow, widower, or children, the employee's retirement deductions plus interest thereon will be paid his or her beneficiary, estate, or next of kin.

The amount of an employee's annuity is determined by his years of service and the highest average salary for any five consecutive years. There are two formulas for computing annuities. For average salaries of $5,000 or more the annuity is 1½ percent of the average salary multiplied by the years of service. For average salaries of less than $5,000, the annuity is 1 percent of the average salary plus $25, multiplied by the years of service.

The Retirement Act contains a generous "joint-survivorship" option. A husband retiring from the service may take a reduced annuity and thus provide

an annuity for his widow upon his death. The husband will receive an annuity reduced by 5 percent of the first $1,500 of the full annuity due him and by 10 percent of that amount above $1,500. His wife at his death will receive half of his full annuity. If she is younger than age 60 at the time of his retirement his annuity is slightly reduced.

An employee with 30 years of service whose average salary is $5,500 will receive an annuity of $2,475. If he chooses a "joint-survivorship" option he would receive an annuity of $2,302.50. His widow would receive an annuity of $1,237.50 until she dies or remarries.

An employee with 30 years of service whose average salary is $4,890 will receive an annuity of $2,190. If he chooses the "joint-survivorship" plan, he would receive $2,046. At his death, the wife's annuity would be $1,095.

If an employee wishes to have a higher annuity than his deductions and years of service will give him, he may deposit what are known as "voluntary contributions" which will permit him to buy more annuity. Such contributions also earn interest at 3 percent. The amount of annuity purchased in this manner depends upon the age at which the employee retires.

An employee's contribution to the retirement fund is 6 percent of his salary, which is automatically deducted from his pay check. The Government retirement plan gives the assurance of income to take care of the average career employee and his family during the later years of life.

Moreover, it is impossible for an employee to lose the amount deducted from his salary for retirement purposes, because if he leaves the Federal service before becoming eligible for an annuity or prior to completion of 20 years of service all of his deductions, together with interest thereon at the rate of 3 percent compounded annually until date of separation, will be refunded to him upon application.

Social Security System

Employees who are given temporary or other nonpermanent appointments become subject to the social-security system of retirement rather than the Federal retirement system described before.

Summer Employment

One of the advantages open during the summer to students interested in the work of the Department is that of summertime employment. The Department has many seasonal jobs for which applicants are needed for the summer months only. Some of these jobs have to do with planting and harvesting crops, picking fruit, fighting forest fires, irrigation of crops, insect control, assisting Department veterinarians (if the student is in veterinary school), etc. Frequently, such summertime employment gives a student insight into the sort of work he'd like to do and definitely changes his course of study into more suitable channels.

The Department has recently inaugurated a plan whereby civil-service examinations are given undergraduate students. Upon being found eligible for employment, the students selected are given appointments for summer work in the Department. When the Fall school term begins, these employees are placed on educational leave to resume their studies. If these employees do satisfactory work, they will be offered career employment upon graduation without taking any additional examinations.

Work of the Agencies of the Department

In the section which follows are brief descriptions of the agencies of the Department, together with statements of some of their outstanding accomplishments and their specialized jobs. In some instances, a brief organizational setup is given. Wherever possible, a picture of either the over-all function of the agency or an important phase of it has been included.

Immediate Office of the Secretary

The work of the Department of Agriculture is directed and supervised by the Secretary of Agriculture, who is assisted by an Under Secretary and an Assistant Secretary. The Secretary and his assistants aid the agencies of the Department in developing and carrying out over-all agricultural programs to meet national and international situations.

Staff Offices of the Secretary

The staff offices of the Secretary include the following agencies: Bureau of Agricultural Economics, Library, Office of Budget and Finance, Office of Foreign Agricultural Relations, Office of Information, Office of Personnel, Office of Plant and Opera-

tions, Office of the Solicitor, and Office of Hearing Examiners.

The work of these offices is described in the sections that follow.

Bureau of Agricultural Economics

This agency is the primary economic research and statistical agency of the Department of Agriculture. It continuously studies the economic factors affecting agriculture and collects a wide range of farm statistics, which are necessary for the nation to keep informed on agricultural conditions and prospects. By the nature of the task, this work is of daily service to all—in agriculture, industry, commerce, and in the guidance of governmental affairs.

The over-all research program of this agency involves large-scale studies in the fields of marketing and transportation, agricultural finance, farm management and costs, land economics, statistical and historical research, and farm population and rural life.

Activities

Examples of the Bureau's economic research and analyses are the following:

A study of the factors relating to the determination of reserve levels for storable farm products.—This study was made in 1952 at the request of the Committee on Agriculture and Forestry of the United States Senate. The report sets forth facts and questions which must be considered by farmers and others interested in agriculture, including the Congress and the appropriate policy officials of the Government, in arriving at a judgment on the size of storable stocks and reserves, and the terms under which they should be carried.

Analyses by the Outlook and Situation Board of the economic conditions of various agricultural commodities.—These analyses are published in "Situation" reports such as the Demand and Price Situation, Livestock and Meat Situation, Dairy Situation, Wheat Situation, Cotton Situation, and other key-commodity groups.

Studies of the economics of grassland farming.—These studies evaluate the prospective costs and returns from farming systems which emphasize forage and livestock production. These have an important place in the work of the United States Department of Agriculture and the land-grant colleges, especially in their periodic appraisals of the production capacity of American agriculture.

The Bureau's recent studies of consumer preferences, under the Agricultural Marketing Act.—These are of especial significance in the field of agricultural marketing. Studies include surveys of consumers' preferences for selected fabrics, and clothing items, automobile manufacturers' preferences for fabrics and fibers used as interior trim in passenger cars, fabricators' preferences for awning materials, and household consumers' preferences for specific fruits and vegetables. A relatively new line of research is the taste testing of apple juice and citrus juices, as an aid in their marketing.

Key statistics collected and published by the Bureau include:

Monthly and annual crop, livestock, and dairy statistics; data on warehouse stocks; monthly and annual statistics on "prices paid" and "prices received" by farmers, together with parity-price computations; statistics on farm-wage rates, farm employment and related items. The statistics also include data on farmers' cash receipts from farm marketings; gross income; production and living expenses; net incomes; the financial position of agriculture; farm-mortgage debt; land values; farm tenancy and ownership; input-output relationships in farm production; per capita food consumption and supplies; and others. (Statistical series of these types are developed as part of the economic research and analysis work of the Bureau).

In an effort to improve and expand the role of statistics in agriculture, a "master" sample has been developed that will aid those making representative sample surveys. The sample was developed by the Bureau of Agricultural Economics in cooperation with the Bureau of the Census and the Iowa State College of Agriculture at Ames, Iowa.

Specialized Positions

Described below are the duties of several specialized positions, together with a description of typical duties in each:

Agricultural economist.—Employees in these positions are engaged in the gathering, interpretation, and analysis of material relating to one of these fields: Farm management and costs, land utilization and conservation, agricultural finance, farm prices and income, and distribution of farm products in the marketing system. Material is gathered from various sources such as Government reports, State and county records, libraries, and actual surveys. These positions range in grade from GS–5 through GS–13.

Agricultural Statistician.—Employees in these positions collect data concerning the planting, condition, and production of crops and the production of livestock; assemble and interpret data concerning prices of agricultural products, income, and expenditures. The data are obtained by direct contact

Crop Reporting Board of the Bureau of Agricultural Economics preparing monthly crop report for the Nation based on data supplied by State Statisticians.

One of the field libraries of the Department.

with farmers and other sources, by mailed inquiries, and from published material prepared by other Federal and State agencies. These positions range in grade from GS–5 through GS–13.

Organization

The Bureau of Agricultural Economics is divided into four major segments; namely, Production Economics; Prices, Income, and Marketing; Agricultural Estimates; and Farm Population. Each of the major segments is broken down into divisions in accordance with separates lines of work.

Opportunity for Advancement

There is a continuous need in the Bureau for well-trained economists and statisticians. Employees who demonstrate that they have the ability are consequently promoted to more responsible assignments as soon as their development warrants.

Library

The Department Library contains more than 1,000,000 volumes on agriculture and the related sciences, technology, and economics and receives currently more than 20,000 periodical and serial publications each year.

The dictionary card catalog of the Library, containing more than a million cards, is a record of the book resources of the whole Department. It is supplemented by several extensive special indexes. These together form the most comprehensive bibliography of agriculture and the related sciences available in the United States. A Bibliography of Agriculture in printed form is issued monthly by the Library. Miscellaneous bibliographies on special subjects are issued from time to time.

Organization

The Department Library is comprised of the Division of Bibliography, the Division of Reference and Lending Services (which includes the field service) and the Division of Technical Processes. The main Library is located in Washington, D. C. Field libraries are located at Albany, Calif.; Albuquerque, N. Mex.; Asheville, N. C.; Atlanta, Ga.; Beltsville, Md.; Madison, Wis.; New Orleans, La.; Peoria, Ill.; Philadelphia, Pa.; San Francisco, Calif.; and Wyndmoor, Pa.

Specialized Positions

Various types of positions, with brief descriptions are listed below.

Bibliographer.—For the Bibliography of Agriculture, librarians, each working in a particular subject field, scan all the literature received in the Library from all over the world, and index it to make it available to workers in agriculture in this and other countries. Others work on specialized bibliographies. The grade range of these positions is from GS–7 to GS–12.

Cataloger.—These librarians are responsible for classifying and cataloging published literature in the field of agriculture and the related sciences, and for preparing original manuscript from which the Library of Congress prints cards for world distribution. The grade range of these positions is from GS–5 to GS–9.

Reference librarian.—These librarians are responsible for answering all types of requests for information found in the published literature in the field of agriculture and the related sciences and for liaison activities with agency subject specialists. The grade range of these positions is from GS–5 to GS–12.

Field librarian.—Included in the duties of this position are many of the duties enumerated above, as well as selection and maintenance of a suitable collection, issuance of monthly newsletters or accession lists, and circulation of books and periodicals. The grade range of these positions is from GS–5 through GS–9.

Library Assistants maintain the stacks, make additions to serial, shelf-list and other records, check in and route periodicals, etc. These positions range in grade from GS–2 to GS–5.

Activities

The Library has made outstanding progress in the field of scientific management. Through the adoption of scientific techniques, it has trebled its reference and circulation while reducing its staff. In its copying work, through construction of continuous photostating equipment which reduces the cost of supplying photostats to less than one-third the former cost, the Library is able to provide much more service to the Department and the general public at much lower cost. Photocopying facilities are available free of charge to any member of the Department who may need copies of publications for official use. They are available to the general public at the cost of the reproduction.

Office of Budget and Finance

The Office of Budget and Finance advises and assists the Secretary and heads of the operating agencies in the administration of the budgetary, financial, and related aspects of the Department's programs of work. The work of the Office includes the general direction, coordination, and supervision

of the acquisition, allotment, and apportionment of funds for carrying on all work of the Department; accounting; auditing; budgetary and financial reporting; fiscal and procurement organization and management; purchasing, sales, and related activities; formulation and issuance of departmental policies and procedures relating to these activities; and the review and evaluation of the budgetary, financial, and legislative aspects of program proposals. In cooperation with staff and program agencies, the Office provides leadership in the development of improvements in the management and operation of departmental activities. In carrying out the foregoing activities, the Office acts as the Department's central point of contact with the Budget Bureau, General Accounting Office, Treasury Department, the Congressional Committees on Appropriations, and other agencies concerned. The Office coordinates in the field the activities of the Area Agricultural Equipment Committees.

Specialized Positions

Two of the specialized positions, with brief duty descriptions, follow:

Budget Reviewer analyzes budget estimates and justifications of funds and makes recommendations as to needs in relation to agency operations and Department policies; compiles budgetary material for ready review by departmental and other officials; suggests improvements in agency budget procedures; and performs related work. The grade range of these positions is from GS–7 through GS–13.

Fiscal Inspector examines accounting systems in the Department and makes recommendations as to their adequacy and effectiveness; provides technical assistance to agencies on difficult fiscal problems; and conducts studies to find methods of improving fiscal operations. The grade range of these positions is from GS–7 through GS–13.

Office of Foreign Agricultural Relations

The Office of Foreign Agricultural Relations coordinates the foreign work of the Department of Agriculture, keeps close contact with developments abroad affecting United States agriculture, advising the Secretary of Agriculture and United States farming interests regarding them, and serves as a liaison between the Department of Agriculture and other Government agencies with respect to foreign trade and related matters.

Additional responsibilities of the Office include (1) obtaining from United States Foreign Service officers and other sources statistical and other data on foreign agricultural production, trade, and supplies; (2) compiling, evaluating, and releasing information on these subjects; (3) acquiring and evaluating foreign information necessary for national defense; (4) representing the Department of Agriculture in international conferences; (5) representing United States overseas agricultural interests at meetings of interdepartmental and departmental committees; (6) making technical commodity and regional investigations and analyses required by the Department of Agriculture and other Government agencies; and (7) participating in international cooperation and assistance programs.

Organization

The Office of Foreign Agricultural Relations is divided into three major segments—International Commodities Branch, Regional Investigations Branch, and Technical Collaboration Branch, each with its subordinate divisional and sectional operations.

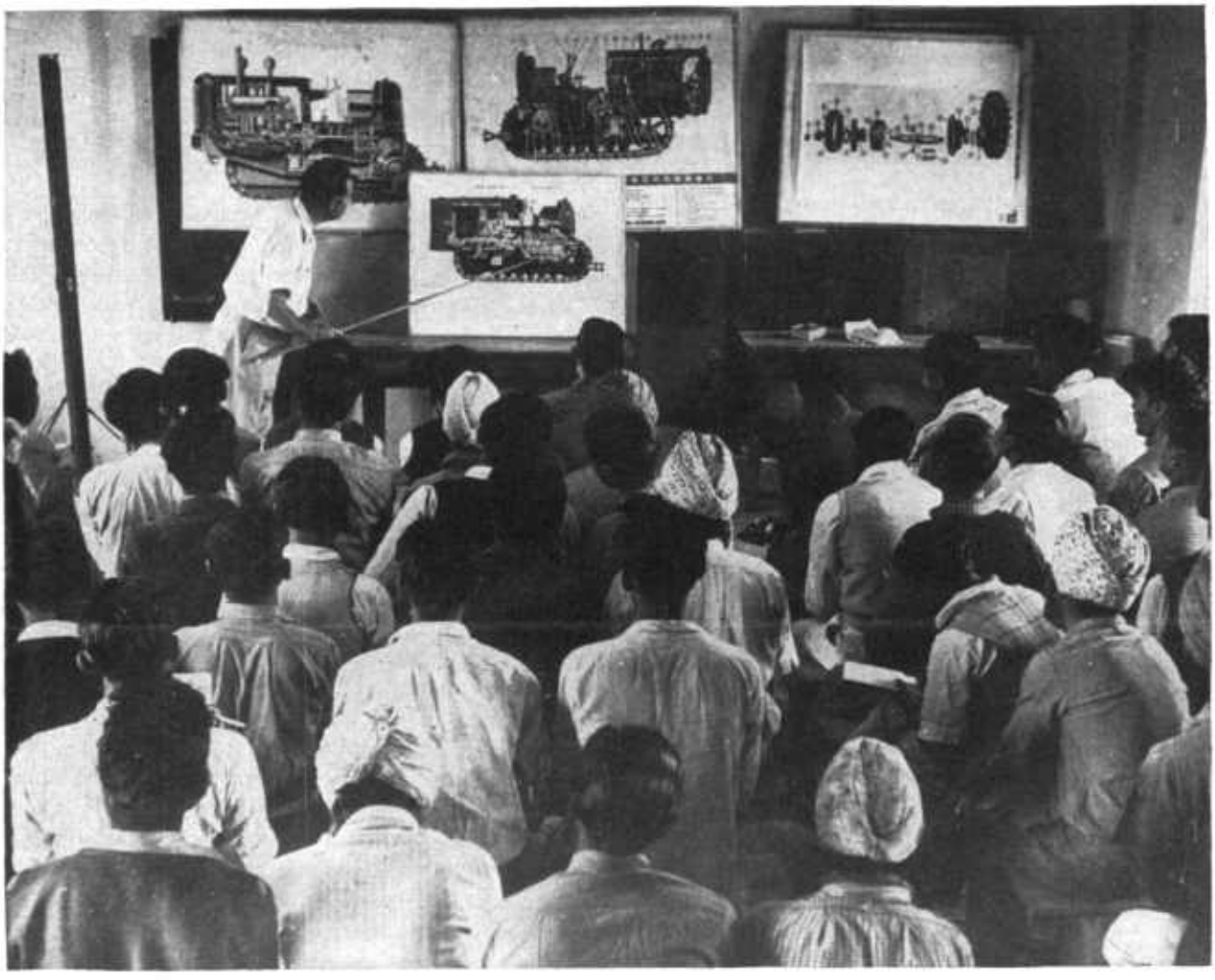
Specialized Positions

Professional positions in the Office of Foreign Agricultural Relations fall principally into the following categories.

Agricultural Economists, who make analyses and interpretations of economic data on foreign agricultural developments. These economists perform work from either the commodity or foreign-area standpoint. The result of their work is made available to the public through regular publications of the Office, to congressional committees, and to other interested agencies and individuals.

International Marketing Specialists, who travel abroad for the purpose of developing foreign markets for United States agricultural products in plentiful supply. As specialists on particular agricultural commodities, they conduct extensive surveys in foreign areas and advise United States and foreign trade organizations, as well as governmental agencies, on marketing problems abroad. The grades of these positions are from GS–5 through GS–13.

Foreign Agriculturists, who are assigned to technical cooperation projects abroad. Their work involves technical training of foreign nationals in such public-service fields as agricultural research, extension, and education. It some cases the work is centered at agricultural stations; in all cases it is designed to assist a government in the development of agricultural and related industrial methods and services suitable to the needs of the particular area. These positions range in grade from GS–5 through GS–13.



In India, Earl K. Rambo, agricultural engineer for the Office of Foreign Agricultural Relations, teaches a class for tractor operators under the Point Four Program.

Activities

Activities of the Office during the past year include the following:

Representing the United States farming and farm trade interests at the following: (1) the 8th Session of the International Wheat Council in London, April 17–May 9, 1952, at which renewal of the International Wheat Agreement was discussed; (2) the 11th Plenary Meeting of the International Cotton Advisory Committee in Rome in May 1952; (2) the World Tobacco Congress in Amsterdam in September 1951: (4) the International Rice Commission meeting in Bandung, Indonesia, in May 1952; and (5) the sessions of the International Sugar Council in London in March 1952, which discussed a possible international sugar agreement.

Cooperating with the Food and Agriculture Organization of the United Nations and with the Economic Cooperation Administration and its successor, the Mutual Security Agency, in giving technical agricultural assistance abroad; and participating directly in the Technical Cooperation Administration's technical assistance programs under Point Four in Latin America, the Near East, Africa, Asia, and the Pacific.

This cooperation involved giving assistance in various ways: (1) With the help of the land-grant colleges and universities, making available United States resources of technical knowledge of agriculture; (2) providing trained personnel for agricultural programs; (3) working with local agricultural representatives and experts in carrying out specific agricultural projects abroad. Such projects include improving production of coffee, cacao, and natural rubber in several Latin American-countries, developing a new burlap-fiber industry in Cuba, promoting bamboo production to yield pulp for the Western Hemisphere paper industry, and controlling a mosaic disease of abaca in the Philippine Islands; giving technical guidance to cooperative locust-control efforts in the Middle East; and giving guidance and leadership in many countries for setting up or strengthening public services in agricultural research, extension, and training. Assistance also includes participating with farm organizations, private commercial agricultural institutions, land-grant colleges, and various agencies of the Department of Agriculture in providing educational courses and contacts for foreign professional agriculturists who come to the United States at a rate of 3,500 a year for special training.

Publications

The office makes its foreign agricultural information publicly available through the following published periodicals: Foreign Agriculture (monthly); Foreign Agricultural Trade (annual—both fiscal and calendar year—and monthly); Foreign Crops and Markets (weekly); and U. S. Foreign Trade in Farm Machinery and Supplies (monthly). It also publishes at irregular intervals Foreign Agriculture Circulars, devoted to specialized commodity subject matter, Foreign Agriculture Reports, and various bulletins and monographs covering a variety of foreign agricultural subjects.

Office of Information

This office is divided into four major segments. Brief statements on the work of each part are given as follows:

Agricultural Publications.—This office handles all matters connected with publications of the Department. Through several series of technical and popular publications, it makes available, to farmers and the public generally, information concerning food and fiber needs, and results of research, conservation, regulatory, and service work of the Department.

Agricultural Exhibits Service.—Through production and display of educational exhibits and through correlation of exhibit activities of the Department, this office places before farmers, homemakers and the rural public, information on currently important agricultural situations and subjects, and especially the results of research.

Press and Radio Releases.—The Office of Information cooperates with the press and with radio stations in disseminating useful information concerning food-production programs, as well as other important programs of the Department, in an effort to help farmers reduce production costs, conserve the soil, improve the quality of their products, and widen their markets. The national radio networks and more than 500 radio stations daily donate broadcasting time to the Department for this purpose.

Motion Picture Service.—The Office of Information, through this office, produces and distributes motion pictures designed to interpret, to farm people primarily, problems and programs for agriculture and to guide and instruct them in the production and disposition of the food, fiber, and oil crops.

Specialized Positions

Some of the specialized positions with brief duty descriptions are as follows:

Motion Picture Technicians and Photographers assist in the production of both color and black-and-white motion pictures; assist in sound recording, maintenance of sound equipment and projection of motion

In El Salvador, Ford Milam, agronomist for the Office of Foreign Agricultural Relations, works with Salvadoran scientists under the Point Four Program at the cooperative agricultural station at Santa Tecla, taking soil samples to determine seasonal changes in fertility.

pictures; develop and print all types of motion picture film. The range of these positions is from GS–3 to GS–9.

Information Specialists prepare or assist in the preparation of articles, reports, or manuscripts for reporting to the general public and specialized groups general and scientific agricultural information through publications and the press; prepare radio and motion-picture scripts on special agricultural programs and accomplishments. The range of these positions is from GS–7 to GS–13.

Editors edit material intended for publication to make it conform to prescribed standards of service, accuracy, clarity, and style in the interest of the reader and to effective use of printing funds in making the information available for use. The range of grades for editorial positions is from GS–7 to GS–12.

Illustrators check and adjust publication manuscript charts, graphs, pictures for good printing reproduction, and prepare original illustrations for Department agencies. Grade range of these positions is GS–5 to GS–12.

Publication clerks fill requests for publications and general information, and after several years' training handle telephone calls for information about the Department and its research and other work. Grade range of these positions is GS–2 to GS–7.

Activities

Activities of this Office are:

Editorial review, check, and preparation for printer of agency manuscripts.

Examination of articles prepared by Department workers and submitted for delivery as speeches or for publication in outside periodicals.

The handling of around 900,000 requests for information (including publications) received from farmers, the general public, and Members of Congress. Publication of the Agriculture Yearbook.

Complete production of motion pictures for the Department; furnishing motion picture laboratory and production facilities for other Government agencies; supervising the distribution and exhibition of Department films to an estimated 14,000,000 people.

Display of Department exhibits at about 28 State and interstate fairs, attended by an estimated 6,500,000 people.

Furnishing of special and weekly information on Department activities to editors of women's magazines, editors of farm trade journals, and radio farm-program directors.

Participating in several regular network broadcasts and supplying information for special broadcasts.

Office of Personnel

The Office of Personnel directs all phases of personnel management within the Department to aid officials in making the most effective use of their human resources. It assumes, as a major duty, responsibility for integrating the personnel program with the research, technical, regulatory, inspection, and administrative programs of the Department. It develops and promulgates personnel policies and establishes and directs the maintenance of standards for organization, position classification, salary administration, recruitment, placement, transfer, promotion, training, employee relations, safety, health, and investigations. It also acts as liaison office on matters of personnel administration with all governmental or private agencies concerned with the work of the Department. Bureau personnel offices are responsible for the personnel programs within the various bureaus.

Specialized Positions

Several of the specialized positions in the Office of Personnel, with brief duty descriptions, are as follows:

Placement Officer sees that the best qualified people within the Department are selected to fill vacancies; surveys and reviews the requirements of the various agencies to determine their personnel needs and locates eligibles both within and outside the Department; establishes lists of qualified individuals available for promotion, reassignment or transfer; aids in the development and administration of training programs for agency officials engaged in placement activities; develops training material covering improved placement and interviewing techniques, writes informational material regarding employment opportunities, and sets forth qualifications requirements for various positions in order to locate recruitment sources. These positions range in grade from GS–11 through GS–13.

Training Officers develop policies, objectives, and procedures for training courses which are department-wide in their application; conduct institutes for the training of training officers, administrators and supervisors; conduct studies of the needs in the Department for pre-service training; initiate collaboration between the agencies of the Department and schools and universities in establishing courses and training to supply future employees of the Department. These positions range in grade from GS–11 through GS–14.

Position Classifiers investigate, review and analyze positions; conduct studies on delegation of classifi-

An exhibit preparer in the Agricultural Exhibits Service, Office of Information, adjusts placement of a magnifying glass in front of a model of the corn borer in the moth stage. The exhibit shows the life cycle of the corn borer, typical damage to corn, and how this pest can be controlled.

cation authorities to the agencies of the Department; approve classification sheets describing positions; study position coverage, problem areas and occupational groups in Washington, D. C., and elsewhere; supervise the training of position classifiers in the agencies of the Department, and advise agency officials on classification prior to, or during reorganization. These positions range in grade from GS–9 through GS–13.

Office of Plant and Operations

The Office of Plant and Operations is responsible for the housing of departmental activities; records management services and programs; technical advisory services where engineering principles are involved in the acquisition, utilization, and maintenance of equipment; general coordination of technical operations in connection with departmental mapping projects; administrative and budgetary service functions for the Office of the Secretary; and certain departmental services in the District of Columbia, including telephone and telegraph, photographic, duplicating, addressing and mailing, central storage and distribution of supplies and forms, motor transport and service garage, and Department post office.

Specialized Positions

Architectural Engineers make technical surveys of housing accommodations for the Department; analyze agency programs and work requirements as they affect the Department's space requirements in Washington, D. C., and elsewhere; prepare space plans, lay-outs, cost estimates, and justifications; conduct studies of employee efficiency under varying working conditions in order to develop acceptable standards of heating, lighting, sound reduction, ventilation, air-conditioning, etc.; design, supervise the installation of, and test special building and laboratory facilities for the Department; investigate and report on structural hazards and building maintenance practices, and work out correct measures. These positions range in grade from GS–11 through GS–13.

Equipment Engineers assist Department agencies in the development of policies and solution of problems incidental to the selection, acquisition, operation, maintenance, and repair of laboratory, scientific, farm, optical, automotive, and other mechanical equipment. These positions are in grades GS–11 and GS–12.

Records Management Analysts serve as advisors to agencies of the Department in the formulation, organization, operation, and coordination of records management programs. This involves the furnishing of assistance to the agencies in the development and application of policies, procedures, and techniques in connection with the creation, maintenance, use, preservation, and disposition of records. These positions are in grades GS–11 and GS–12.

Office of the Solicitor

The Solicitor is the chief law officer of the Department. The Solicitor also represents the Department in administrative proceedings for the promulgation of rules having the force and effect of law and in quasi-judicial hearings held in connection with the administration of various programs. He also represents the Secretary in proceedings before the Interstate Commerce Commission involving freight rates on farm commodities and in appeals to the courts from the decisions of the Commission. The Solicitor is general counsel for the Commodity Credit Corporation and the Federal Crop Insurance Corporation.

The Solicitor issues both formal and informal opinions on legal questions arising in the administration of the Department's programs and performs a variety of other legal services, such as the preparation and review of administrative rules and regulations applicable to the public, the drafting of proposed legislation, the preparation and interpretation of contracts, mortgages, leases, deeds, and similar documents, the prosecution of patent applications for the Department and its employees; the examination of titles to lands to be acquired by the Department or accepted as security for loans, and the disposition of claims by and against the United States arising out of the Department's activities.

Organization

The Solicitor is assisted by a Deputy and five Associate Solicitors. By special assignment of the Attorney General, the Associate Solicitor on Litigation represents the Department in certain classes of cases before the courts of appeal. Civil litigation affecting the Department is under the direction and control of the Department of Justice, with the Office of the Solicitor assisting in the preparation and trial of such cases.

There are 10 legal divisions in the Office of the Solicitor in Washington, D. C., under the direction of the Deputy Solicitor and four Associate Solicitors. There are 10 regional offices and 8 branch offices performing all types of legal work within their respective geographic areas, 9 regional offices being in the United States and 1 in San Juan, P. R.

Panoramic view of Agricultural Research Center.

Positions in the Office of the Solicitor

A brief statement of duties of attorneys in the Department of Agriculture follows: Attorneys perform legal services in connection with the administration and enforcement of the various laws pertaining to the work of the Department. These duties involve research, interpretation and application of laws, court decisions, and other legal authorities. Attorneys also prepare pleadings, motions and briefs; render legal opinions and memoranda of law; review and approve contracts; agreements, and evidence of title to property acquired by the Government or offered for Government loans; and review, approve and interpret rules and regulations for the various agencies of the Department. Attorneys cooperate with and assist the Department of Justice and United States attorneys in court actions affecting the Department.

Office of Hearing Examiners

The hearing examiners hold hearings, make reports, recommend decisions, and perform other duties required by the Administrative Procedure Act and the statutory provisions, regulations, and rules of practice applicable to the various matters under their jurisdiction. Such matters include complaints by the Department of Agriculture against those who are believed to have violated the laws and regulations, the administration of which is vested in the Department; petitions by private parties for relief from rulings of the Department or its agents; and hearings required in rate and other rule-making proceedings. Under the standards established by the Civil Service Commission, applicants for hearing examiner positions in the Department must, in general, have had at least six years' experience in a judicial position or in conducting hearings of a governmental regulating body or in the presentation or preparation of cases before courts or governmental regulatory bodies.

The grade of these positions is GS–14.

Agricultural Research Administration

The Agricultural Research Administration of the Department of Agriculture directs and supervises most of the scientific research activities of the Department. It determines research objectives and plans, and it develops, coordinates, and directs research programs. The agencies of the Department under this Administration are: Agricultural Research Center; Bureau of Agricultural and Industrial Chemistry; Bureau of Animal Industry; Bureau of Dairy Industry; Bureau of Entomology and Plant Quarantine; Bureau of Human Nutrition and Home Economics; Bureau of Plant Industry, Soils, and Agricultural Engineering; and Office of Experiment Stations.

The work of these bureaus is outlined in the section that follows.

Agricultural Research Center

The Office of Operations provides for the general supervision of the entire plant and the development and operation of all common facilities required by the organizations of the Department engaged in fundamental agricultural research at the Agricultural Research Center, Beltsville, Md. These services include furnishing of electricity, water, heat, telephones, building maintenance, roads, mechanical shops, granary, guards, mail service, safety and health and raising of feed crops for animals.

The Agricultural Research Center comprises an area of approximately 11,700 acres on which scientific, research, and experimental activities are conducted by 10 agencies of the Department.

Bureau of Agricultural and Industrial Chemistry

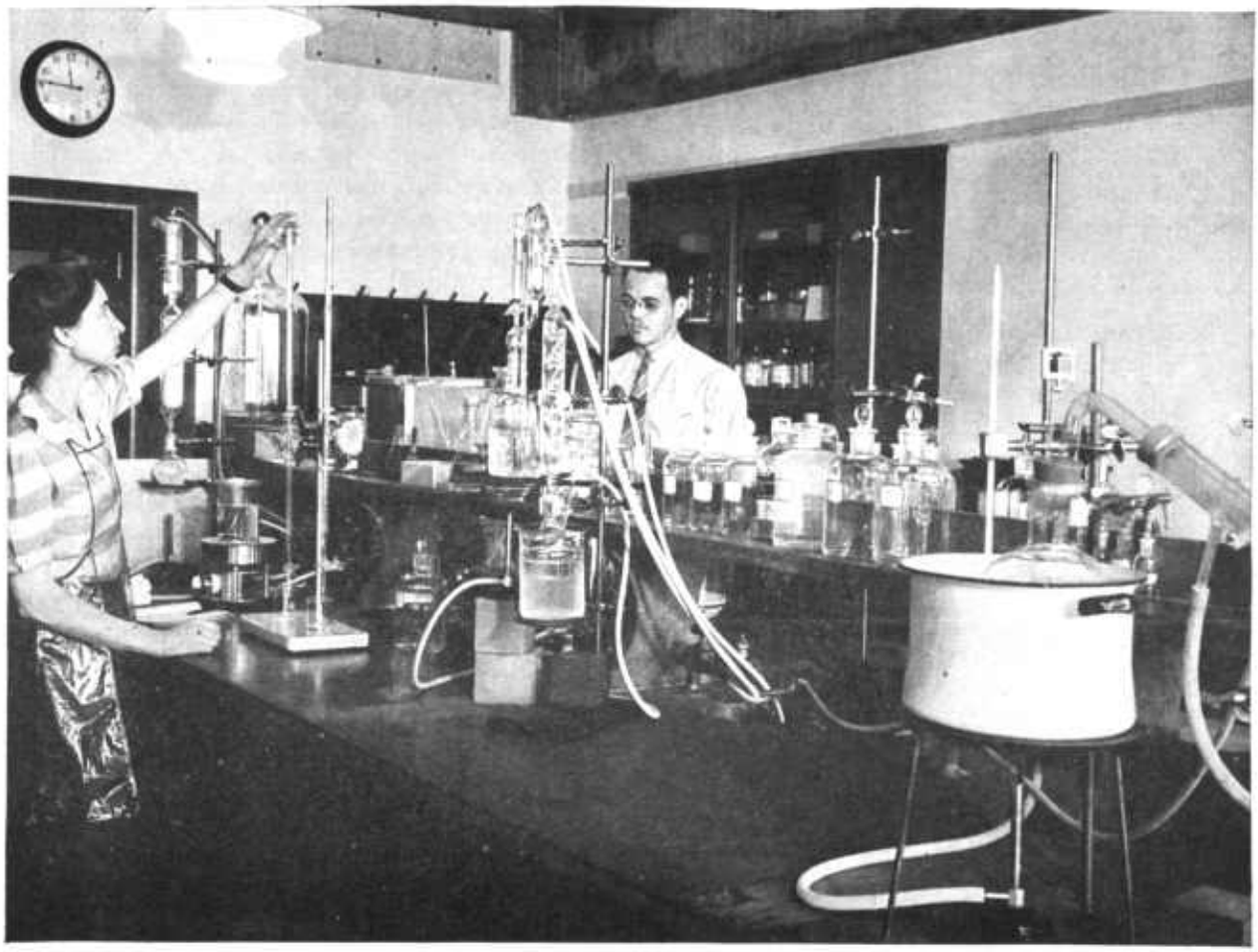
The Bureau of Agricultural and Industrial Chemistry conducts research on the utilization of farm commodities to help expand industrial markets for agricultural products. Investigations by Bureau scientists are directed toward such objectives as improving canned and frozen goods, finding better ways to process cotton, leather, naval stores, and oilseed crops, developing new synthetic fibers, rubber, and plastics from agricultural materials, and discovering wider industrial uses for wheat straw, vegetable leaves, and other crop residues.

This work is done in the Bureau's four Regional Research Laboratories—at Albany, Calif. (Western Research Laboratory); Peoria, Ill. (Northern); Wyndmoor, Pa. (Eastern); and New Orleans, La. (Southern)—and in a number of other laboratories and field stations in various parts of the country.

Specialized Positions

Among the specialized positions in the Bureau are those of chemist, chemical engineer, bacteriologist, physicist, and cotton technologist. Their duties are:

Chemists apply the principles of analytical, organic, physical, and inorganic chemistry, and biochemistry to research problems involved in the development of new and the improvement of existing methods and techniques for the processing of food products and the wider industrial utilization of farm products.



Separating starch granules. Department of Agricultural scientists are carrying on numerous experiments in the realm of starches from various farm crops. This is a corner in the Northern Regional Research Laboratory, Peoria, Illinois.

Chemical Engineers adapt chemical-laboratory methods and techniques to pilot-plant or full industrial-scale operations, and they work with research chemists in determining practical application to industry of new methods or techniques developed in the laboratory.

Bacteriologists study and investigate the role of bacteria and other micro-organisms in the production, storage, transportation, and processing of agricultural products, as well as their role as agents in decomposition, fermentation, and industrial processes.

Physicists conduct physical tests of agricultural products and through the utilization of physical laboratory equipment such as spectrographs and related apparatus, carry out studies on important trace elements affecting the quality of agricultural products and byproducts.

Cotton Technologists conduct research and laboratory investigations on the development, improvement, and utilization of cotton as an industrial product. They develop new cotton fabrics and test them for heat conductivity, strength, wearing qualities, etc.

Opportunity for Advancement

Advancement in position is attained in many instances through the individual research worker's demonstrated abilities in a specialized field. Promotions also depend, of course, on the availability of vacancies in higher grade research positions. As a matter of general policy, vacancies are filled by promotion of employees already within the Bureau or in the particular laboratory where the vacancy occurs.

Activities

Described in brief below are four recent achievements of this agency, one from each laboratory.

Western Laboratory.—A major contribution to new methods of food preservation is "dehydrofreezing," a process in which fruits or vegetables are partially dehydrated and then quick-frozen. The drying step reduces weight and volume, and thus lowers packaging, transportation, and storage costs, without affecting the flavor and food value of the product.

Northern Laboratory.—Early in World War II, this laboratory found ways to increase production of penicillin and make this vital drug available in large quantities. Because of the laboratory's use of higher yielding strains of molds and improved production methods, the wholesale price dropped from $20 to 60 cents per 100,000 units. The laboratory's research also increased from 3 to 18 months the length of time penicillin can be stored without losing its strength.

Eastern Laboratory.—Rutin, a new drug made from green buckwheat plants has been made available through the work of this laboratory. Rutin strengthens weak capillary blood vessels and helps to prevent certain types of hemorrhage. It also reduces the severity and speeds the healing of X-ray burns. Medical tests over a period of two years have shown that rutin restores weakened capillary walls to normal in 85 percent of the cases.

Southern Laboratory.—This laboratory has found ways to improve cotton yarn, cord, and fabric by chemical finishing methods which give cotton superior rot-and-weather resistance and other desirable properties. Laboratory scientists developed a highly satisfactory process for "partial acetylation" of cotton to make it virtually rotproof and mildewproof. This process changes the chemical structure of the fibers but does not alter their feel or appearance.

Bureau of Animal Industry

This bureau conducts scientific investigations of the cause, prevention, and treatment of diseases of domestic animals, fur animals, and poultry, and investigates the existence of such maladies and directs or aids in their suppression. Among these infectious maladies are tuberculosis, brucellosis, anaplasmosis, scabies, hog cholera, swine erysipelas, anthrax, rabies, equine sleeping sickness, fowl paralysis, etc. The Bureau also conducts field and laboratory studies on parasitic diseases of livestock, including the effects of drugs on host animals and their parasites. Other experimental work deals with the breeding and feeding of domestic animals, and with improving the quality and usefulness of their products. Such investigations include the development of superior strains and crossbred types of beef cattle; types of sheep that are most efficient in producing high-quality meat and wool; strains of hogs with capacity for rapid growth and economy of gain, high fertility, and quality of carcass; and strain of chickens and turkeys that excell in egg and meat production. A number of regulatory acts are administered by the Bureau including the Federal Meat Inspection Act, the Animal Quarantine Acts, the 28 hour law, the Diseased Animal Transportation Acts, and the Virus-Serum-Toxin Act. An exceedingly interesting and important agency program is the one involving cooperation with the Republic of Mexico in controlling an outbreak of foot-and-mouth disease in that country.

Organization

The activities of the Bureau of Animal Industry are distributed among 13 divisions, 9 of which are

research or regulatory divisions. These are the Animal Foods Inspection Division, Animal Husbandry Division, Brucellosis and Tuberculosis Eradication Division, Inspection and Quarantine Division, Interstate Inspection Division, Meat Inspection Division, Pathological Division, Virus-Serum Control Division, and the Zoological Division. The other divisions have charge of administrative and informational matters.

Specialized Positions

Some of the specialized positions in this agency are: Zoologist (Parasitology), Poultry Husbandman, Animal Husbandman, Geneticist, Veterinarian.

Zoologist (Parasitology).—Employees in these positions participate in investigations on parasites of livestock and poultry. The work may involve studies on the mode of transmission and life history of animal parasites, including studies of the free-living stages of parasites in relation to the environment; studies of the biology and life history of intermediate hosts; experimental infections of farm animals and poultry or laboratory animals with specific parasites to note the development of symptoms of disease; determination of effects of parasites on growth of animals and birds; testing under controlled experimental conditions or on the farm and range, control measures for parasites of livestock and poultry. It may involve tests with chemicals to discover and develop treatments for the destruction and removal of parasites from livestock and poultry. These positions range in grade from GS–5 through GS–14.

Animal Husbandman, Poultry Husbandman, Geneticist.—Since these three jobs are somewhat related, they are described together. The animal husbandry position involves professional and scientific work dealing with research in the breeding, feeding, and management of the various classes of farm livestock. This research is designed to secure families, strains, breeds, or combinations thereof of animals for the purpose of increasing or improving the quantity and quality of livestock, animal products, or desired traits or to determine the feed and nutritional requirements for efficient production. The general duties of the poultry husbandry position are similar to the foregoing except that the work is conducted with poultry and poultry products. The animal husbandman, poultry husbandman, or geneticist, performs professional work associated with the breeding, feeding, or management of such animals as cattle, horses, swine, sheep, goats, or fur animals. Such positions involve working directly with the experimental livestock and poultry for a considerable portion of the time, the accumulation of data and their analysis, compilation of reports, and similar duties. The grade range for the first position is from GS–5 through GS–14; for the other two, the range is from GS–5 through GS–13.

Veterinarian.—Such employees are engaged in various animal disease control and eradication activities; in Federal Meat Inspection; in the control and supervision of the production of veterinary biological products; and in research in animal diseases and parasites. These positions range in grade from GS–7 through GS–16.

Vacancies in the positions described above are filled from time to time at the following locations:

Zoologist (Parasitology).—Agricultural Research Center, Beltsville, Md.; Georgia Coastal Plain Experiment Station, Tifton, Ga.; United States Regional Animal Disease Research Laboratory, Auburn, Ala.; at the New Mexico Agricultural Experiment Station near Las Cruces, N. Mex.; and in Chicago, Ill.

Animal Husbandman, Poultry Husbandman, Geneticist.—Agricultural Research Center, Beltsville, Md.; Experiment Stations of the Animal Husbandry Division located at Dubois, Idaho; Miles City, Mont.; Glendale, Ariz.; Jeanerette, La.; Fort Reno, Okla.; Fort Robinson, Nebr.; Front Royal, Va.; or Brooksville, Fla.

Veterinarians.—At most of the field stations of the Bureau located throughout the country.

Activities

The Bureau of Animal Industry has gained worldwide recognition for its many accomplishments which have contributed so largely to the protection and improvement of the livestock industry of the nation. One of its most notable achievements is the organization and development of the Federal meat inspection service to its present high degree of efficiency in safeguarding consumers against unhealthy or unwholesome meat and meat food products distributed through interstate commerce. A few of the Bureau's accomplishments are cited below:

Hog Cholera Conquered by Serum-Virus Treatment. The research of Dorset, McBryde, and Niles who first discovered the cause of hog cholera and a successful immunizing treatment.

Phenothiazine, Versatile Drug for Controlling Livestock Parasites. A highly effective practical means of reducing heavy losses caused by internal parasites of horses, cattle, sheep, and swine.

Protecting Man Against Trichinosis. Research

Drawing sample of blood for Bang's test at Beltsville, Maryland.

work that underlies the modern practices of cooking pork well both in homes and industrially, as a health safeguard.

Sanitation System Controls Swine Roundworms. A research achievement that annually saves swine growers millions of dollars, through a simple practical method of protecting pigs against roundworms, one of the worst pests of swine.

Small-Type Turkey Successfully Developed. A result of research, dealing in the field of genetics, having broad appeal to turkey producers and consumers alike, due to small families and small ovens.

Protection Against Foot-and-Mouth Disease. Veterinary studies illustrating the manner in which scientific findings provide a basis for sound legislation and regulations.

Effective Drug Treatment for Hookworms. Bureau scientists combined their knowledge of chemistry, parasitology, and biology to evolve a treatment for hookworms, useful in both veterinary and human medicine.

Catalogue of Animal Parasites of the World. Several Bureau scientists evolved an extensive card catalogue that is virtually a rogues' gallery of dangerous parasites.

Bureau of Dairy Industry

The Bureau of Dairy Industry conducts research to improve the economic welfare of the dairy industry. Its research deals with the problems of breeding, feeding, and management of dairy cattle to improve their producing efficiency; with the nutritional requirements of dairy cattle for maintaining the highest levels of usefulness and the value of feeds, feed constituents, and feeding regimes as sources of nutrients; the nutritional value of milk and the effect of nutrition of the cow upon the milk produced, and the physiological factors affecting the general economic usefulness of dairy cattle; with the improvement of the quality of dairy products and methods of manufacturing new dairy products; with problems of utilizing the byproducts of dairy manufacture more efficiently, including methods of incorporating byproducts on their constituents in foods for human use. It maintains and analyzes production records of all cows in dairy-herd-improvement association herds for the purpose of identifying sires and determining their breeding value. The Bureau also supervises the sanitary inspection of process butter factories.

Work Locations

The research work relating to dairy products is carried on in laboratories in Washington, and at Beltsville, Md., and from time to time agency specialists conduct demonstrations in commercial plants to introduce new or improved methods of manufacture. The research pertaining to dairy cattle breeding, nutrition, physiology, feeding and management problems is conducted principally at the Agricultural Research Center, Beltsville, Md., but investigations and demonstrations in dairy production are also conducted at other field experimental stations, mostly in cooperation with the State agricultural experiment stations located at Huntley, Mont.; Mandan, N. Dak.; Woodward, Okla.; Jeanerette, La.; Lewisburg, Tenn.; and Willard, N. C. The Bureau also maintains cooperative work with each of the 48 State Agricultural colleges.

Specialized Positions

Three specialized positions in this Bureau with brief duty descriptions are listed below:

Dairy Husbandman advises on, administers, supervises, or performs research studies and investigations in the breeding, nutrition, management, housing, growth, body form, physiology, and anatomy of dairy cattle. This includes research on establishing sound breeding programs; finding better and more economical methods of feeding and managing herds of dairy cattle; and reporting results of investigations in writing. These positions range in grade from GS–5 through GS–11.

Dairy Manufacturing Technologist advises on, administers, supervises, or performs research work related to studies of dairy manufacturing operations involved in processing milk and its by-products to produce butter, cheese, concentrated milks, ice cream, market milk, process butter, and other related food and nonfood products. These positions range in grade from GS–5 through GS–11.

Agricultural Bacteriologist performs general bacteriological work i. e., makes bacterial counts, prepares special media, identifies bacteria, studies effect of environmental factors on growth, etc., with special emphasis on lactic acid bacteria and other microorganisms associated with dairy products. These positions range from grade GS–5 through GS–11.

Locations of Positions

The positions of Dairy Manufacturing Technologist and Agricultural Bacteriologist are located in the Dairy Laboratories in Washington, D. C., or at the Agricultural Research Center, Beltsville, Md. The positions of Dairy Husbandman may be at Beltsville, Md., or at any one of the field station locations.

Exhibit of registered Holstein cattle on farm operated by Bureau of Dairy Industry, during a tour by farm paper editors. Among the cows shown were several class leaders of the Holstein breed. The herd is milked thrice daily and no effort is made to push the individual cows for high production. The cows are stabled throughout the year with no pasture afforded them. This is done to maintain better control of environment factors.

Opportunity for Advancement

Opportunities for advancement are favorable for those who demonstrate on the job their ability for handling the duties of a higher grade position.

Activities

This agency has many outstanding accomplishments to its credit. Several are described below:

It has demonstrated through research the effectiveness of the proved sire theory of breeding for improving milk and butterfat production in herds. The influence of proved sires and sons of proved sires is now being spread more widely through artificial breeding.

The agency has developed a simple, practical, and successful method of making silage from crops that ordinarily are grown for hay. The new method, known as the wilting method, is easy to use and it saves both the cost and labor involved in adding such materials as mineral acids, molasses, or ground corn-and-cob meal.

It has developed a process for making a synthetic textile fiber with certain wool-like properties from the casein of skim milk.

The commercial production of lactic acid by fermenting the milk sugar in whey began in the United States in 1935 as the result of research conducted in the agency.

Bureau of Entomology and Plant Quarantine

The Bureau of Entomology and Plant Quarantine conducts research investigations on insects to determine how to control or eradicate harmful insects and utilize beneficial insects. Studies are made concerning the classification, anatomy, physical habits, and responses of insects under normal and artificial conditions. It develops information on how insects which are injurious to agriculture animals, annoy or injure man, or infest human habitation or industry, may be eliminated. The Bureau conducts chemical investigations to develop new insecticides and provides research to improve methods and equipment for their application. It conducts control programs directed toward the control or eradication of economically important harmful insects and plant diseases in cooperation with Federal, State and local agencies. The Bureau is responsible for the enforcement of Federal plant quarantines and regulatory orders to prevent the spread of plant pests in the movement of plants and plant products into this country from foreign countries and in interstate commerce within the United States.

Organization

The Bureau of Entomology and Plant Quarantine maintains its headquarters at Washington, D. C., with 5 regional administrative offices and approximately 500 laboratories or stations located throughout the United States and in Alaska, Hawaii, Puerto Rico, Mexico, France, and Egypt.

Specialized Positions

Two of the specialized positions in this agency are Plant Quarantine Inspector and Entomologist. These positions range in grade from GS–5 through GS–14. A brief description of duties follows:

Plant Quarantine Inspectors participate in planning and carrying out a program for protecting the nation from the entry and spread of foreign plant pests by enforcing the provisions of pertinent legislation, and orders, quarantines, and regulations issued thereto. They examine incoming carriers and cargoes, baggage, and mail for restricted or prohibited plant material. They inspect, treat, and otherwise safeguard importations of plant material for injurious plant pests.

Entomologists plan and conduct investigations on the development of control measures against insects affecting crops, stored products, man or animals; and the utilization of beneficial insects. Investigations include studies in insect biology, ecology, morphology, and taxonomy; research to determine the abundance and distribution of insects; and the development of cultural control, mechanical control, biological control, chemical control, plant resistance to insect attack, and insect transmission of plant diseases.

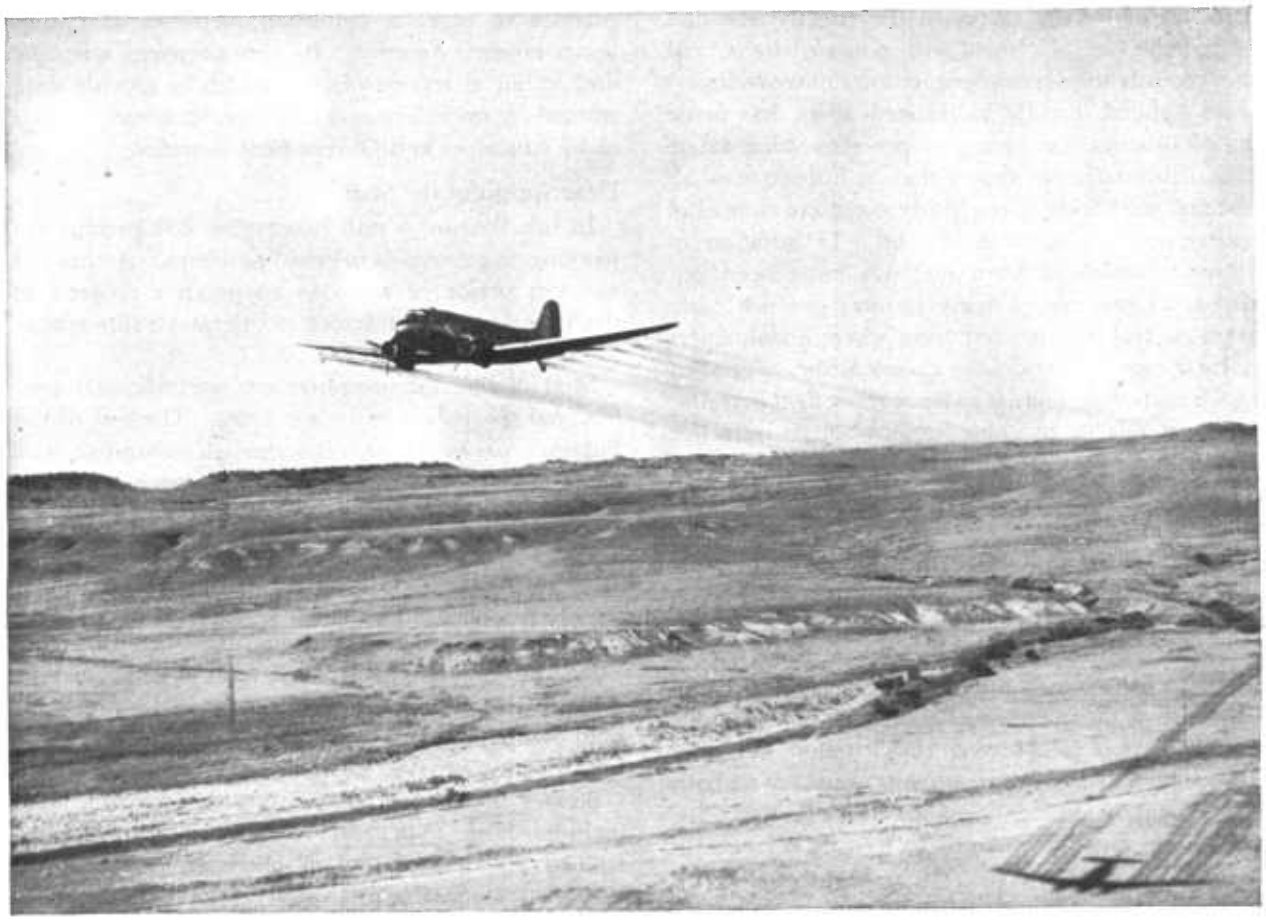
Opportunity for Advancement

The Bureau of Entomology and Plant Quarantine follows a promotion-from-within policy. Therefore, persons appointed at grade GS–5 are in line for promotion to higher grades on the basis of need and individual abilities.

Activities

A few of the agency's outstanding accomplishments are described in brief below.

Hornfly control on cattle.—The use of the newer chemicals to control hornflies on beef and dairy cattle is credited with increasing meat and milk production valued at $45,000,000 in 1948, the first year this new technique resulting from Bureau research was widely employed by the Nation's livestockmen. Currently more than one-third of all the cattle in the United States are being treated one or more times for the control of this pest. It is estimated that 5 cents



C–47 plane spraying the new high-powered insecticide, Aldrin, for the control of a grasshopper outbreak in the grasslands of Wyoming.

worth of insecticide provides $10 worth of extra beef. Experiments conducted by the Illinois Experiment Station prove that the control of hornflies on dairy cattle increases milk production as much as 20 percent.

Improved grasshopper control.—Bureau research since 1948 has so advanced grasshopper control methods that scientists of this agency have become internationally renowned, and have been called on by several foreign countries to assist in the control of grasshopper outbreaks. Research in the use of new chemicals materially increased the effectiveness and lowered the cost of control with poisoned baits, and more recently the development of low dosage chemical sprays applied directly to infested areas, has made control practical on even low per-acre value range lands. Research has shown that as little as one-half ounce of insecticide gives nearly complete control of grasshoppers on an acre of land. In addition to control materials, control methods have been improved, so that today many farmers practice early season control in restricted areas where grasshoppers lay their eggs. Low dosage chemical sprays applied to such undisturbed areas as fence rows, field margins, and roadsides at hatching time result in effective control, and avoid the problem and cost of spraying entire fields to control adult grasshoppers.

New screw-worm smear developed.—The development by Bureau scientists in 1950, of a new remedy to be used as a wound treatment for controlling the screw-worm on livestock and fleece-worms or wool maggots on sheep has provided farmers and ranchers with a more effective remedy that is easier to use. Because of the use of the chemical, lindane, in EQ–335, this new smear has long-lasting toxicity that not only reduces the frequency of treatments necessary on both infested and noninfested wounds but kills the adult screw-worm flies that attempt to feed or lay eggs in wounds.

Aerosol bomb.—The development of the aerosol bomb during World War II is an outstanding achievement of this agency. The use of the bomb by the military forces greatly reduced the incidence of malaria, dengue, and other insect-borne diseases among troops. During the war more than 35 million aerosol bombs were used to protect the armed forces against mosquitoes and other disease-carrying insects. "Aerosol" is the scientific term for a smoke or fog. The aerosol is made by dissolving an insecticide in a liquid gas held under pressure in a container. The container has a valve which, when opened to release the pressure, causes the insecticide to be dispersed into the air in extremely small particles, which form the aerosol. Aerosol is widely used in homes, in greenhouses, and to some extent for the control of certain types of agricultural pests under field conditions.

Bureau of Human Nutrition and Home Economics

The Bureau of Human Nutrition and Home Economics is the chief government agency conducting research on behalf of the Nation's 33 million homemakers. For this group the Bureau provides scientific facts for everyday living—facts that can be put into practice to make a better-fed, better-clothed, and better-housed America. It also prepares scientific and technical reports of its research to provide data wanted by manufacturers and merchandisers, as well as by educators and Government agencies.

Description of the Staff

In this Bureau, a staff numbering 250 persons are working on a dozen or so broad problems. Additional research personnel work on cooperative projects at the State Agricultural Experiment Stations throughout the United States.

Most of the staff members are scientific and professional specialists, and their aides. The rest of the Bureau's personnel provides the administrative and other services needed to keep the wheels of research running smoothly.

As might be expected, many of the scientists are home economists with training that makes them useful in some particular field of research. Most of them have studied home economics, with a major or minor in some allied specialty, such as experimental cookery, nutrition, textiles, clothing, housing, household equipment, and many have a plus in chemistry, bacteriology, physics, statistics, economics, sociology.

Besides these home economists, the research staff includes both men and women who are highly trained and experienced as chemists, physiologists, physicists, bacteriologists, and economists who now enjoy applying their specialized knowledge to some practical household or consumer problem.

Since the research job is not done until the findings are presented in usable form for various groups, on the Bureau's staff are editors, writers, and others versed in preparing material for use by the public. The results of such research are then made available to the public in popular bulletins, technical and scientific bulletins, articles and reports, pictorial charts, motion pictures, and slide films, press releases, and radio scripts.

Work Locations

The Bureau's research divisions which require laboratories are situated at the Agricultural Research

Research to learn more about nutritional contributions from the fat and lean of meat.

Center near Beltsville, Md. These are the Divisions of Food and Nutrition, Textiles and Clothing, Housing and Household Equipment.

The Family Economics Division works in the Department's headquarters in downtown Washington. This division sends out interviewers to gather its basic figures from families in many parts of the country. Also at headquarters are the information division and administrative offices.

Specialized Positions

Some of the specialized positions in this Bureau, together with brief descriptions of typical duties, are given below.

Home Economist (Foods and Nutrition) works on problems concerning the preservation of poultry, fruits and vegetables. These positions range from GS–5 through GS–14.

Bacteriologist (Foods and Nutrition) works on the bacteriological problems concerned with the processing, preparation, and preservation of foods. Determinations are made of the degree and type of bacterial contamination. In some investigations, experimental animals are inoculated with toxic products of food poisoning microorganisms and the pathological findings recorded. The grade range of these positions is from GS–5 through GS–13.

Textile Technologist (Textiles and Clothing) applies physics to determine the mechanical properties of textile materials such as shrinkage and stretch, elastic recovery, warmth properties, abrasion resistance, breaking strength and elongation. Equipment used in these laboratory investigations include breaking-strength machines and other machines and apparatus to measure such qualities as elasticity, air permeability, thermal-transmission and abrasion. After completion of the experiments, the textile technologist prepares reports, including tables, charts, and graphs for publication. These positions range in grade from GS–5 through GS–13.

Chemist (Textiles and Clothing) conducts research on the laundering and dry cleaning of fabrics. Typical duties consist of preparing solutions, treating fabrics with various soiling mixtures under specific conditions. After the treated fabrics have been laundered and/or dry cleaned, laboratory tests are made to determine the chemical and physical changes that have occurred. These positions range in grade from GS–5 through GS–13.

Activities

Some of the Bureau's outstanding achievements are noted below.

Pioneered in designing functional work clothes for women's comfort, efficiency, and safety in farm, factory, and household work.

Conducted intensive research which has put home canning on a more scientific basis, so that homemakers may combine safety with better products.

Translated human needs for calories, protein, minerals, and vitamins, as defined by nutrition standards, into family food plans at different cost levels.

Issued comprehensive tables of food composition, based on review of the world's scientific literature. These tables giving figures on 11 nutrients and energy value in terms of calories, are regarded as authoritative both here and abroad.

Bureau of Plant Industry, Soils, and Agricultural Engineering

This agency conducts research on the production and improvement of farm crops, fruits, vegetables, and other plants; plant diseases, including diseases of forest and shade trees and forest products; soil management, irrigation, and fertilizers; and the application of engineering principles to agriculture. Research with plants is designed to reduce the hazards of production and improve the yield and quality of all crops. Soils investigations seek toward the determination of systems of soil management and irrigation that will increase soil fertility and give most efficient crop production. Soil studies also deal with the improvement of fertilizers and liming materials, and the classification and mapping of soils by cooperative soil surveys. Investigations of agricultural engineering problems are concerned with the improvement of farm machinery for planting, cultivating, fertilizing, spraying, dusting, and harvesting crops, the development of improved equipment and facilities for processing and storing farm products, the design of improved farm buildings and houses and the development and application of electrical equipment to farm use.

Organization

The Bureau of Plant Industry, Soils, and Agricultural Engineering is organized into four groups or divisions engaged in research on (1) field crops, (2) agricultural crops, (3) soils, and (4) agricultural engineering.

Specialized Positions

Some of the specialized positions in this agency are: Agricultural Engineer, Agronomist, and Plant Pathologist. The grade range of these positions is from GS–5 through GS–16. Brief duty descriptions follow:

Breeding for resistance is usually the most effective and permanent method of combating virus and other destructive diseases of crop plants.

Agricultural Engineers plan and conduct research and investigations in farm machinery, farm buildings and their equipment, farm electrification, the processing of farm products, drainage, irrigation, and the engineering phases of soil conservation.

Agronomists conduct research in the application of the fundamental principles of plant, soil, and related sciences to the problems of field crop improvement (including breeding, production, and culture); conservation crop and turf establishment and management; propagation and seed production; ground maintenance; and plant adaption and varietal testing. This work involves research in cereals and grain grasses, legumes and forbs used for forage, hay, green manure, or conservation purposes; tobacco; cotton and other fibers; rubber plants and shrubs; sugar plants; and plants used for drugs and medicinal purposes.

Plant Pathologists study the cause, nature, prevalence, and severity of parasitic, non-parasitic, and virus diseases attacking economic plants; experimentation in or the establishment of methods for the prevention or control of such diseases; and the effects of these diseases on the planting, cultivation, transportation, and storage of plants or plant products.

Opportunity for Advancement

The research positions in this agency range in grade from GS–5 through GS–16. Advancement depends upon such considerations as the individual's productiveness, the quality of his research, his ability to plan and organize research investigations, his ability to cooperate with his coworkers and employees of other Government and State agencies and the advancement of his training for research work.

Activities

Since its organization in 1901, scientists of the Bureau have had a hand in the improvement of all of the major crops grown in the United States. Plant breeding continues to be a principal activity. It is carried on in cooperation with workers at the Agricultural Experiment Stations of 44 States and, in the case of certain studies, with foreign countries.

Plant explorers of the Bureau comb the world in their search for wild and cultivated plants carrying desirable germ plasm. The agency maintains living collections of breeding material of important crop plants. For example, the world wheat collection contains more than 10,000 varieties of wheat. This material is screened for resistance to dominant crop pests under a wide range of conditions. Then through careful breeding techniques, the germ plasm with resistance to disease and insects, cold, and drought, is combined with other desirable characters. The resulting crosses are also widely tested. Each new variety released is the equal in all respects and superior in many features to varieties previously available.

Much of the agency's research today is concerned with agricultural uses of chemicals. One of the most dramatic developments along this line—the use of growth-regulating compounds to control weeds—was first suggested by a Bureau scientist in the early 1940's. Since 1946 these materials have been used increasingly as selective herbicides and are now applied to millions of acres each year. The Bureau carries on studies in the fundamental nature of growth-regulating compounds and related chemicals, methods of application, and the effects of the chemicals on crops and weeds.

Beginning in 1930 Bureau workers screened thousands of chemicals for their fungicidal properties and demonstrated that certain new organic compounds were superior for this purpose. The agency carried on continuous research in the evaluation of new fungicides and methods of application.

One of the major objectives of soil chemistry has been to develop chemical methods for estimating the nutrient or fertility status of soils.

In the past few years radioactive isotopes have become a valuable tool in soil investigations. With an electronic device such as the Geiger counter it is possible to trace radioactive elements through the soil, into the roots, and through the plants. The new technique is providing specific information on where and how fertilizer should be placed to give plants the greatest benefits and what kinds of fertilizers work best on the country's varied soils.

The efficiency of fertilizers is being greatly improved through studies on fertilizer placement and new developments in fertilizer-distributing machinery.

Agricultural engineers of the Bureau also seek to devise better ways of harvesting, conditioning, and storing crops. For example, a shift in emphasis from row crops to grassland farming underscores the need for efficient machinery to harvest grass and legume seed. Research in the nutritive value of hay has shown the advantage of barn-curing over field-drying.

Research on new farm applications of electricity includes studies on the use of electric traps for insect control, bactericidal radiation for the control of poultry diseases, and the design of short-time electric milk pasteurizers. Exploratory research is in progress to find farm applications of ultrasonic energy.

View of the chemical wing of the administration building of Federal Experiment Station in Puerto Rico.

Office of Experiment Stations

The Office of Experiment Stations serves as a liaison agency between research administrators and professional personnel in the State agricultural experiment stations and similar personnel in the Department of Agriculture in the development of cooperative research and better integration of research at the national and local levels in all fields of agricultural science. In the administration of Federal-grant funds, technical specialists work closely with personnel in the States on the planning, development, and evaluation of research. They also review and pass upon the merits of each new research project proposal involving use of Federal-grant funds, take active part in technical planning conferences, and visit a number of State agricultural experiment stations each year to review research programs in progress.

Organization

This agency has three divisions, as follows: the Division of Administrative Services, and the Division of Grant-Fund Administration which are located in Washington, D. C., and the Federal Experiment Station located at Mayaguez, P. R. The first two serve as a staff agency in the coordination of research and the administration of Federal-grant funds. The Puerto Rico station serves as a tropical outpost of the Department for conducting experiments, primarily in the plant field, which can best be conducted in a tropical environment.

Specialized Positions

Professional positions in Washington carry the title of *Experiment Station Administrator* and are, for the most part, in grades GS–12 and GS–13. Personnel in these positions must be specialists in one field of agricultural science, such as entomology, dairy husbandry, horticulture, etc., since these employees are responsible for proper administration, planning, and development of research in their fields of agricultural science conducted at the State stations, and since they must deal directly with highly trained personnel located in all states, Hawaii, Alaska and Puerto Rico.

At the Federal Experiment Station in Puerto Rico, professional positions are mostly in grades GS–9, GS–11, and GS–12 in the fields of entomology, chemistry, or some branch of plant science. Such personnel act as project leaders in conducting research on tropical crops.

Activities

For a period of over 60 years the Office has worked with the agricultural experiment stations in the development of a great program of agricultural research which the Federal-grant funds have supported to a considerable extent. Today the closely coordinated efforts of the Departmental research agencies and state experiment stations represent an efficiently functioning national research program. While the Federal-grant funds and State-appropriated funds are so intermingled in the support of the research programs at the individual experiment stations that it is difficult to separate the accomplishments of either program, the Federal-grant funds have, to a large extent, supported much of the basic fundamental research underlying the great volume of applied research, results of which are now in practice on the farms throughout the Nation.

Specific accomplishments of the Federal Experiment Station in Puerto Rico are here indicated.

The Station introduced and developed disease-resistant varieties of sugar cane which virtually saved the industry on the island.

The Station developed a sweet corn adapted to the tropics which was used extensively by the armed forces during the war.

The present program is concerned with research on insecticidal crops, vegetable crops, drug crops, grasses and legumes, weed control, vanilla, and plant introduction.

Commodity Exchange Authority

The Commodity Exchange Authority administers the Commodity Exchange Act. Its activities involve Federal regulation of all commodity exchanges which conduct futures trading in any of the following commodities: Wheat, cotton, rice, corn, oats, barley, rye, flaxseed, fats and oils (including lard, tallow, cottonseed oil, peanut oil, soybean oil, and all other fats and oils), cotton seed meal, cottonseed, peanuts, soybeans and soybean meal.

Its functions and procedures are designed to prevent commodity price manipulation and corners; prevent dissemination of false and misleading crop and market information to influence prices; protect hedgers and other users of the commodity futures markets against cheating, fraud, and manipulative practices; insure the benefits of membership privileges on contract markets to cooperative

Trading Floor of a Board of Trade. Futures trading on the principal commodity exchanges is supervised by the Commodity Exchange Authority to insure fair practice and honest dealing.

associations of producers, insure trust-fund treatment of margin moneys and equities of hedgers and other traders and prevent the misuse of such funds by brokers; and provide information to the public regarding trading operations on contract markets.

Organization

The Commodity Exchange Authority has four divisions as follows: Compliance and Trade Practice Division, License and Rules Division, Segregated Funds Division, Trading and Reports Division. These divisions are headquartered in Washington, D. C. There are also field offices in Chicago, Kansas City, Minneapolis, New Orleans, and New York.

Specialized Positions

Three of the specialized positions of this agency with brief duty descriptions are given as follows:

Investigators search for alleged or apparent violations of the law and accumulate legal evidence as a basis for administrative or criminal action. They also conduct trade practice surveys which are investigations of all trading in a certain commodity on one or more markets during a specified period of time, and appear as expert witnesses in administrative hearings and court cases. These positions range in grade from GS–7 through GS–12.

Accountants carry out the audit program of the Authority which involves the examination of books and records of brokers for the purpose of assuring compliance with the segregation provisions of the act; they conduct audits to confirm the accuracy of reports filed with the Authority; and conduct accounting investigations and compile legal evidence and appear as expert witnesses in administrative hearings and court cases. These positions range in grade from GS–7 through GS–12.

Analysts compile, analyze, and evaluate basic data on futures and cash commodity activities; they prepare reports for administrative use and furnish factual and statistical material for use in administrative activities and prosecutions. These positions range in grade from GS–7 through GS–12.

Activities

A few of the accomplishments of this agency are given below.

The activities of the Commodity Exchange Authority have protected producers, consumers, and the general public against excessive speculation and manipulation of prices of important agricultural commodities.

The agency has helped to prevent fraud and dishonesty in the execution of commodity futures transactions. Through its audit and investigatory work it has safeguarded the funds of producers' cooperative associations, merchandisers, processors, and other traders.

Investigations of fictitious transactions in commodity futures have resulted in the issuance by the Bureau of Internal Revenue of instructions which will mean assessment of millions of dollars of additional income tax liabilities. These revenues would otherwise have been lost to the Government.

Extension Service

Extension work in agriculture and home economics is a cooperative on-the-ground educational undertaking of the United States Department of Agriculture, the land-grant colleges, and groups of rural people within the respective counties. The Federal Government's share of this work is carried on by the Extension Service. Through cooperative relations with the colleges, programs are undertaken among men, women, and youth so that they may use agricultural knowledge and information coming out of Departmental and State experiment station research in practical application to real-life situations. Much of the service is also increasingly directed at helping urban groups of people in connection with problems arising in the fields of gardening, nutrition, and consumer marketing.

Organization

Approximately 13,000 Federal, State and county cooperative employees conduct the cooperative extension program. The services of professional personnel are strengthened and augmented by over a million unpaid volunteer local leaders—men, women, and older youth—who act as leaders in assisting county extension agents. County agricultural, home demonstration, and 4-H Club agents are located in nearly every agricultural county of the United States.

Specialized Positions

Since county extension agents play such a prominent part in the work of the Extension Service, an informal description is given below of their duties.

A county agent's job is probably one of the most complex ever encountered. When Norman Rockwell recently trailed a county agent for several days while on his round of duties, he admiringly remarked, "He's a farm expert, educator, organizer, diplomat and trouble shooter." The job of the county agricultural agent is primarily educational.

In good times and bad times, the county agent is a welcome visitor on farms throughout the nation. He brings a helpful hand and a fund of scientific information. Almost before the blow was over which leveled the barn on this Wisconsin farm, County Agent Baker called on the discouraged farm family with a book of plans and sketches which would eliminate some of the disadvantages of the old barn.

He aids farmers in setting up and maintaining self-teaching programs for better farming and living. Since he is employed jointly by the Department and by the state in which he works, he has two sources of information for carrying on his activities. The cooperation of farmer committees and volunteers in adult-education and youth-club work is necessary to the effectiveness of his program.

The county extension agents help with practically any and everything. They may give tips on farm cooking and canning, how to cull chickens or test soil, what characteristics to look for in a good calf, how to exhibit produce at the fair, and what to exhibit. The agent especially encourages the efforts of the young people on the farm, whether they are attempting to raise a bigger crop, grow a fatter pig, or build a better fence.

Last year one of the Department's county agents drove 20,000 miles, visited more than 800 farms, advised more than 3,800 farmers who came to his office and attended more than 300 meetings, at which he either presided or took part.

Activities

A few of the accomplishments of this agency in helping farm people are here set forth.

Applying the findings of research on their farms and their homes through demonstrations, meetings, individual help, publications, and other ways.

Solving problems through group action.—Helping farm people understand the value of organization and helping them understand problems and work effectively as a group in meeting those problems best met by group action.

Mobilizing rural people to meet emergencies.—This has been abundantly revealed in times of drought, flood, hurricanes, fires, ravages by insects and diseases, and in wartime when problems of food production and meeting farm labor shortages were uppermost.

Improving family diets.—Through careful study and understanding of food values and nutrition, extension's home economics program has helped make it possible for homemakers to provide better diets, and hence, improved health and happiness for their families.

Working with rural youth.—Through the medium of 4–H Clubs, more than 15 million boys and girls have engaged in organized group activities, in which they carried on projects related to farm, home, and community life. These activities help youth develop skill, pride in farm life, and confidence in themselves.

Developing rural leadership.—Perhaps the greatest achievement of extension has been its contributions to the development of the leadership capacity in rural people themselves.

Farm Credit Administration

The Farm Credit Administration supervises a cooperative credit system which provides long- and short-term credit to farmers, stockmen and farmer cooperatives throughout the United States and Puerto Rico. It also conducts research and educational work related to problems of marketing, purchasing, and business services for farmer cooperatives.

Organization

The headquarters of the Farm Credit Administration and the Central Bank for Cooperatives are in Washington, D. C. In each of 12 Farm Credit districts there is a Federal land bank, a Federal intermediate credit bank, a production credit corporation, and a bank for cooperatives. Long-term mortgage loans and short-term operating loans are made through 1,200 local national farm loan associations and 500 production credit associations respectively. Loans to farmers' marketing, purchasing, and business service cooperatives are made by the 12 district banks for cooperatives and the Central Bank for Cooperatives. Farmer-members who borrow from the national farm loan associations own all of the capital stock of those associations. These associations in turn own all the stock of the land banks. The member-borrowers own most of the stock of the production credit associations and the borrowing cooperatives own part of the stock in the banks for cooperatives. Their respective farmer-members elect the directors of the national farm loan associations and the production credit associations. In further carrying out the principle of cooperative control, each of the 12 Farm Credit districts is governed by a board of directors, of which part of the members are elected by the local associations and by cooperatives borrowing from the banks for cooperatives.

Loan funds used by this cooperative credit system are obtained principally by selling securities to investors in the investment markets. These securities, backed by farmers' and cooperatives' notes and mortgages and other collateral do *not* carry any Government guarantee.

A cooperative research and service division in Washington, D. C. conducts research studies and carries on educational work relating to farmers' cooperatives.

Locations of District Offices

The headquarters of the 12 district offices are as follows: Springfield, Mass.; Baltimore, Md.; Colum-

Employee explaining help available to farmers from Farm Credit Administration.

bia, S. C.; Louisville, Ky.; New Orleans, La.; St. Louis, Mo.; St. Paul, Minn.; Omaha, Nebr.; Wichita, Kans.; Houston, Tex.; Berkeley, Calif.; and Spokane, Wash.

Specialized Positions

Some of the specialized positions in this agency are listed below with brief duty descriptions.

Land Bank Appraisers make appraisals of farms offered as security for long-term mortgage loans. These positions range from the equivalent of GS–3 through GS–13.

Farm Credit Examiners examine regularly the books and records of the banks, corporations, and associations under the supervision of the Farm Credit Administration. These positions range from GS–7 through GS–13.

Agricultural Economists carry on research work in the fields of marketing, purchasing and business services as they relate to farmer cooperatives. The grades of these positions are from GS–5 through GS–15.

Activities

A few of the agency's accomplishments are briefed below.

Farmers and their marketing and purchasing cooperatives have borrowed over 20 billion dollars through this credit system since 1933, when the Farm Credit Administration was established, of which they share the ownership and control. Currently they have loans outstanding from these credit co-ops of about 2.3 billion dollars.

These credit cooperatives have set the pace in the farm lending field by introducing methods of lending that particularly suit the needs of farmers and ranchers who have a sound basis for credit. The loans from the credit cooperatives—production credit associations and national farm loan associations—have been of great assistance to hundreds of thousands of farmers in building up sound farm businesses and becoming the owners of them. Loans by the banks for cooperatives and the research and educational program of the Cooperative Research and Service Division have played an important part in rapid development of strong, efficient farmer marketing, purchasing and business service cooperatives during the past 25 years. The 10,000 farmers' marketing and purchasing co-ops alone now have memberships totaling over 5,000,000 and do nearly 9 billion dollars a year business.

Farmers' Home Administration

The Farmers' Home Administration provides small farmers with credit to improve farming operations or become owners, and supplements its loans with individual guidance in farm and home management when necessary. For farmers unable to obtain the credit they need at interest not exceeding 5 percent from banks, cooperative lending agencies or other local sources, the following types of assistance are authorized: operating loans for buying livestock, seed, fertilizer, equipment, supplies and other operating needs, and for subsistence; 40-year farm ownership loans to buy, improve or enlarge family-type farms; mortgage insurance for loans advanced by private lenders for the same purposes as direct farm ownership loans; loans to build or repair farm dwellings or other farm buildings; loans to continue farming operations in designated areas where farmers have suffered widespread production disasters; and loans for water facilities in the 17 Western States.

Organization

The organizational structure of this agency includes a National Office, in which the Administrator, with the assistance of a technically trained staff, plans, directs and executes under powers and authorities delegated to him, all functions of the agency. There are Area Examination Offices which plan and conduct the audit and investigations of the agency's activities within assigned areas, and Area Finance Offices which plan and execute finance and accounting functions within a designated area.

State Office.—Each State office has a State Director who is responsible to the Administrator. Assisted by technically trained staff and a State Advisory Committee, he plans, coordinates, and directs all activities of the agency in one or more States.

County Office.—The typical county office is composed of a Farm Management Supervisor, GS–7, a Farm Management Supervisor, GS–5, and a Clerk-Typist, GS–3. The GS–7 Supervisor, assisted by his staff and a county committee, exercises, within delegated authorities and established policies, full responsibility for the making or processing and the servicing of all types of loans authorized under the agency; provides supervisory assistance to the agency borrowers to insure their progress; maintains adequate records of all activities and operations, and keeps the community informed of agency activities and services.

Specialized Positions

Two of the specialized positions in this agency are given below, with a brief description of duties.

Farm Management Supervisor performs professional work in the field of supervised agricultural credit in State or county office. The work involves planning farm operations with individual and eligible low-

Farmers' Home Administration Supervisor advising with borrower about applying water to potatoes.

income farm families, analyzing their problems, farm organization and management. This is accomplished through the use of record books, a farm plan and supervision of the problems on the farm. It includes the making of production loans for the purchase of livestock, seed, feed, fertilizer, farm equipment and supplies, the making of loans for the purchase or enlargement of family-type farms, the making of loans for the improvement of farm-housing and the servicing of all such loans and collections when they come due. These positions range in grade from GS–5 through GS–12.

Home Economist performs professional work in the field of home economics; or serves as home management supervisor for a county or a group of designated counties; or performs related work. One example of specific duties would be to study and analyze living problems of borrower families in an assigned area as related to nutrition, health, clothing, housing, furnishings, and equipment, financial management, care of children, education and community interests, and give technical guidance to families in the solution of these problems. These positions range in grade from GS–5 through GS–12.

Opportunities for Advancement

It is the policy of the Farmers' Home Administration to promote from within the organization whenever possible and reassign employees to positions where they can perform more efficiently. Accordingly, when vacancies occur, first consideration is given to filling them by promotion or reassignment of employees of the agency.

Activities

Approximately 275,000 family-type farmers were achieving improved living and efficient production during the 1951 fiscal year with production and subsistence, farm ownership (direct and insured), farm housing, and water facilities loans, and credit to continue farming operations in disaster-loan areas. Nearly 120,000 families obtained loans during the year.

Records of operating-loan borrowers who paid off their loans in 1951 and continued farming showed an increase of 66 percent in value of farm production, even though the average borrower came on the program 3.5 years earlier, or in 1947 when prices were higher than in 1950. When they came on the program, 39.5 percent were owners, but 48.6 percent were in that class when they paid off. They improved their tenure as well as their production while operating their farms with supervised credit.

More than half of the fiscal year 1951 farm ownership loans were for making farms more efficient and productive through development and enlargement. About 84 percent of all the farm ownership funds loaned during the year went to veterans.

Over 5,000 farm owners constructed or repaired farm homes or other buildings with farm housing credit in 1951. Water facilities loans went to 1,145 individuals and 30 incorporated associations. Over 13,000 farmers in disaster-loan areas were able to continue with farming operations by means of disaster loans.

Forest Service

The Forest Service is charged with the responsibility for promoting the conservation and best use of the Nation's forest lands, aggregating approximately a third of the total land area of the United States. The three major fields of activities of the Forest Service with brief descriptions of the work in each follow.

The administration of the national forests. The Forest Service administers 152 national forests. These forests are in 40 States and Alaska and Puerto Rico. They comprise 180,000,000 acres. The Service improves them, protects them from fire, insects, and disease. Technical methods of forestry are applied to the growing and harvesting of timber. Livestock grazing is scientifically regulated. Water from protected watersheds is used in the country and in cities, for domestic, agricultural, and industrial purposes. Provision is made for simple, inexpensive forms of outdoor recreation.

Forest research. The agency conducts investigations in the entire field of forestry and wild land management. It is conducting a forest survey of the United States, which is a study of the Nation's present and potential forest resources. This research is carried on in the forest and range experiment stations and in the Forest Products Laboratory.

Cooperation in forestry. States and private owners of forest lands receive cooperation from the Forest Service in the application of sound forest-management practices, in the maintenance of organized protection of forest lands against fire, and in the distribution of planting stock.

Organization

Regional Offices of the Forest Service are maintained in Missoula, Mont.; Denver, Colo.; Albuquerque, N. Mex.; Ogden, Utah; San Francisco, Calif.; Portland, Oreg.; Philadelphia, Pa.; Atlanta, Ga.; Milwaukee, Wis.; and Juneau, Alaska. In

Scaling logs for timber sale. Payette National Forest, Idaho.

addition, the Forest Service has 12 regional forest and range experiment stations and a Forest Products Laboratory at Madison, Wis.

Specialized Positions

One of the specialized positions in the Forest Service is that of Forester the grade levels of which extend from GS–5 through GS–16. The first grade level of this position, GS–5, is used as an orientation and training assignment. Vacancies in higher grade positions are usually filled by promotion from within the agency. Recruits are assigned as assistants to District Rangers, project leaders, or research workers. These are field assignments and nearly 100 percent of the time of GS–5 Foresters is devoted to work in the National Forests or at the Forest and Range experimental stations. They are not ordinarily permanent assignments insofar as headquarters are concerned. Frequent moves from one locality to another are the general rule. The young forester is apt to have his headquarters shifted frequently, somewhat like the civil engineer. If he is an able man, he may ultimately advance to a position which will give him more permanent headquarters and greater opportunity for home life.

The character of the work which foresters are called upon to do varies greatly. For many in the higher positions, the work is in large part administrative—conducting timber sales, supervising range use, organizing and maintaining a fire-control organization, and handling various other operational jobs involved in the management of a forest area. Some men spend the greater part of their time in such work, as determining the amount and rate of timber growth on given tracts, or working out the best methods of cutting to obtain a second crop without recourse to planting. Problems relating to forage on the ranges and the determination of grazing capacities and systems of range management that will improve and perpetuate this resource constitute another field. Other men deal with wildlife and its management. Special aptitudes or interests may lead some men permanently into research, flood control or soil conservation work; and others may find openings in connection with various forest, watershed, and land surveys, recreation work, wildlife management, and in the extension of sound forestry practices in agriculture and industry.

Opportunity for Advancement

The Forest Service has a comprehensive career and promotion plan based on training on the job and periodic checks on accomplishment. While no within-service promotion examinations are held, advancement is based on competition. Higher grade positions, except for a few specialized positions in research, are filled by promotion.

Activities

Described below are a few of the outstanding accomplishments of the Forest Service.

At the present time the Forest Service is cutting more than 4 billion board feet of timber a year, and moving it through productive channels to meet important needs.

The Service grazes 9,000,000 head of livestock on the national forests, ranges and maintains extensive habitats for wild game.

The Forest Service provides outdoor recreational facilities which the agency's records show are used by literally millions of people. The 1950 record indicated that more than 27 million visits had been made to national forests for recreational purposes.

All of the above activities are handled with special consideration for the yield of usable water from drainages within the national forests. Many of the national forests are at high altitudes both in the East and in the West and therefore guard the headwaters of streams which provide water for industrial, agricultural, and domestic purposes.

At the Experiment Stations of the Forest Service, problems are being worked on both in management of the national forests and for the needs of States and private owners throughout the country. Since the inception of World War II, many economic and other studies have been carried on for the purpose of assisting timberland owners and users in making the most productive use of critical materials.

Only about one-fourth of all of the forest land in the country is within the national forests and the production from these lands amounts to only about 10 percent of the total lumber production of the United States. From this it is self-evident that improvement of productivity on private forest land is of primary importance. The Branch of State and Private Forestry of the Forest Service cooperates with States and through various media with private owners, large and small, including farm woodlot owners, in forest fire protection and in applying forestry practices that will assure maximum sustained production both as to quantity and quality from this major source of necessary forest production.

Production and Marketing Administration

The Production and Marketing Administration manages a large number of activities affecting the production, marketing, and consumption of agricultural commodities. These activities are as follows: (1) The defense food program; (2) agricultural conservation; (3) adjustment, including acreage allotments and farm marketing quotas; (4) price support; (5) foreign supply; (6) foreign purchase; (7) surplus removal; (8) stabilization of sugar production and marketing; (9) International Wheat Agreement; (10) school lunch; (11) marketing research; (12) marketing services, including market news, standardization, grading, inspection, and classification; (13) marketing regulation, including marketing agreements and orders; and (14) transportation and warehousing.

Personnel and facilities of the Production and Marketing Administration are utilized in the administration of Commodity Credit Corporation programs.

Organization

The agency has a number of commodity branches as well as branches and offices responsible for specific programs or functions. The commodity branches are: Cotton, Dairy, Fats and Oils, Fruit and Vegetable, Grain, Livestock, Poultry, Sugar, and Tobacco. Branches and offices carrying on programs or functions relating to all commodities are: Agricultural Conservation Programs Branch, Fiscal Branch, Food Distribution Branch, Marketing and Facilities Research Branch, and the Transportation and Warehousing Branch, and Office of Materials and Facilities, Office of Requirements and Allocations, Office of Price, Office of Information Services, Office of Audit, Office of Administrative Services, Office of Budget, Office of Compliance and Investigation, and Office of Personnel Management.

Specialized Positions

One major group of specialized positions includes *marketing specialists* who formulate, develop, or modify programs, policies, procedures, reports, and analyses regarding (1) the production, grading, marketing, processing, distribution, utilization, purchase, pricing, and storage of certain assigned commodities and (2) regarding regulations, price reporting, costs and incomes, loan subsidy, diversion and sales programs relating to these commodities. They also prepare and analyze reports containing data used in estimating future yields and prices; analyze dockets, contract agreements, and forms for program use relating to the assigned commodity or commodities. Some of the commodities dealt with in these positions are poultry, fats and oils, livestock, meat, and wool. Some of the marketing specialists' positions deal entirely with food distribution. The grade range of these positions is from GS–7 through GS–14.

Another major group includes positions of *agricultural economists* who conduct research into assigned economic projects on the basis of personally developed or specified types of studies, surveys, or investigations. These positions range in grade from GS–5 through GS–14.

Activities

A few of the outstanding accomplishments of the Production and Marketing Administration in recent years are as follows:

The Price Support Program.—Price support, carried on since 1933, is now mandatory for corn, cotton, wheat, tobacco, rice, peanuts, wool, mohair, tungnuts, honey, and milk and butterfat. Prices of other commodities may also be supported if certain requirements laid down in price support legislation are met.

Experience over the years has proved that price support benefits both farmers and nonfarmers.

In terms of a living standard, price support has meant—for the farm family—proper medical and dental attention; additional education; electric power; a telephone; the repayment of old debts. The income security provided the farmer also has made it possible for him to increase the productivity of his farm—to conserve the soil; to purchase labor-saving machinery; to improve herds and flocks; to erect new or repair old farm buildings.

Price support, by removing farmers' fears of drastic price breaks, has encouraged the abundant production required by nonfarmers. Because the price support program has maintained farm income at fair levels, farmers have been eager purchasers of the goods and services made available by urban businessmen—farm purchases totaling $25,000,000,000 in 1950. This farm market, in addition to providing profits, has helped to maintain nonagricultural employment, accounting, in 1950, for about 15 percent of total nonfarm employment.

Price support has not been carried on without cost to the taxpayer, of course. But in relation to all the benefits derived from this program, the cost has been small. In the more than 18 years—from 1933 through 1951—net realized losses from price support totaled a little over a billion dollars. That is an average of about $55,000,000 per year.

The National School Lunch Program.—The Production

PRODUCTION *and* MARKETING ADMINISTRATION

PRODUCTION | COMMODITY CREDIT CORPORATION | MARKETING

1 *With knowledge, skills, and finance cooperates with farmers, processors, and distributors to provide consumers with standard commodities at fair prices to all*

FROM FARM TO CONSUMER

2 *Has a part in administering 42 congressional acts related to the production and marketing of farm crops and conservation of natural resources.*

and Marketing Administration provides assistance to public and private schools, of high school grade or under, operating nonprofit school lunch programs. This assistance takes two forms: Funds provided to schools on the basis of their need for assistance and number of meals served—the Federal funds being matched by funds from sources within the States; and donations of food acquired directly for school lunch use or acquired indirectly under surplus removal programs. In addition to providing lunches to children, thus improving their nutritional status, the program also provides a highly useful outlet for surplus foods that might otherwise be wasted.

In the fiscal year 1951, a total of 8,600,000 children participated in the national school lunch program—a record. A Federal appropriation of $83,500,000 for school lunch operations was more than matched by an estimated total contribution of $280,000,000 from sources within the States.

Standardization and Inspection of Agricultural Commodities.—This is one of the most vital phases of the operation of the Production and Marketing Administration. It develops yardsticks of quality by which commodities may be bought and sold the world over. For example, in the fiscal year 1951, over a million cars of fresh fruits and vegetables and 150,000,000 cases of fruits and vegetables were inspected by Federal and State officials. Prior to the establishment of standards and inspection by the Department, the farmer and the fruit and vegetable industry found it practically impossible to carry on long distance dealings satisfactorily. Without official standards, there was no yardstick for measuring differences in quality, no intelligible basis for advertising, making loans, settling disputes between buyers and sellers or quoting market news prices.

Marketing Research Work.—Two projects illustrate the value of this work. An experiment on the shipment of cantaloups in railroad cars with crates standing on their ends instead of in the usual lengthwise position showed that refrigeration space was saved, breakage of crates was reduced two-thirds, and bruising of melons reduced by one-half. The project demonstrated that over a million dollars could be saved a year by this simple change in the method of loading.

A study of the different methods of receiving apples (unloading, moving to the stacking point and stacking) in 15 plants, showed that costs ranged from highs of $9.58 and $6.75 per thousand boxes to a low of $1.93 per thousand boxes. A survey of 252 apple packing and storage houses showed that 83 percent of the plants were using the two least efficient methods and equipment. Significant savings were made possible.

The following are a few of the research activities of PMA:

Twenty-two projects for planning and promoting the construction of satisfactory wholesale market facilities were active during the year. Development of a new crate for shipping lettuce reduced losses materially, and the crate is being widely used by the produce industry. A method for quickly measuring the break-baking qualities of wheat was developed, and a detailed description of the method and apparatus was issued for use of the industry.

A soybean marketing study showed that producers can increase net returns on soybeans most years by storing their crops on the farm at harvest time for later sale. At the end of the year over 23,000 retailers or their employees had been given instruction in improved methods of merchandising fresh fruits and vegetables.

Analysis of storage methods for shelled corn revealed defects in design and construction of some types of bins. A number of changes were made in Quonset-type structures and ventilation ducts were improved significantly.

Rural Electrification Administration

The Rural Electrification Administration makes loans to finance construction of rural power lines and to finance improvement and expansion of rural telephone service. Electrification loans are made principally to farmer-owned cooperatives. REA provides help to co-ops in planning systems to make electricity available to all rural people, helps rural people make effective use of electric power, and offers counsel and advice on construction, management, and operating problems. REA has recently expanded its telephone staff to provide comparable help in the telephone field to its increasing number of telephone borrowers.

Specialized Positions

The positions in which this agency is especially interested are those of Electrical, Telephone and Agricultural Engineers from GS–5 to the GS–11 level. The GS–5 positions are trainee positions. During the 1-year training period, engineers at the GS–5 level work in Washington, D. C. In order that they may become familiar with REA policies, procedures, and methods of operation, trainees are assigned to several different offices of the Agency to become familiar with the various activities of the program. During these assignments the trainees perform work which will give them an understanding of the major procedures of that particular division or

Linemen work through heavy snow to keep Rural Electrification Administration financed co-op power lines in service, assuring dependable electric service to farmer members.

area activity as well as of the over-all program. Trainees also make inspection trips to nearby electric or telephone borrowers' systems and, time permitting, are assigned to a co-op for a period of about a month.

Opportunity for Advancement

Agricultural engineers who complete their training period successfully are promoted at the end of the year to grade GS–7 and are assigned full time to field work in power use activities. Electrical engineer trainees who successfully complete their training will be assigned to electrical engineering duties in the electric power generation, transmission, and distribution fields, or to telephone engineering duties in the design and appraisal of telephone plant facilities. In addition to office positions, field assignments may be made to any section of the country, and the needs of the program and the desires of the employees are considered in selecting field locations. There is ample opportunity for promotion beyond the GS–7 level as agricultural, electrical, and telephone engineers acquire additional experience.

Activities

When Rural Electrification Administration was created, only about one farm in ten had electric service. Now more than 85 percent are served. This program has required the investment of more than 2½ billion dollars of Federal funds, which is being repaid with interest ahead of schedule. The new power lines which may be credited to the Rural Electrification Administration have added to the Nation's strength. They have permitted more than 3,500,000 American families to increase farm production and better their social and economic positions.

When Congress authorized the Rural Electrification Administration to undertake a rural telephone loan program to meet the great need of rural people for adequate telephone service, fewer farms had telephones than in 1920. The demand of rural people today for telephones corresponds to their demand in the early thirties for electric service. As this booklet went to press, loans had been made to 102 commercial companies and 68 cooperatives in 38 States. The first REA-financed rural telephone facilities went into service in Virginia in September 1950.

Soil Conservation Service

The basic purpose of the Soil Conservation Service is to aid in bringing about good physical adjustments in land use. This is being done to better human welfare, conserve natural resources, establish a permanent and balanced agriculture, and reduce the hazards of flood and siltation. Some of the more common soil and water conservation practices are contouring, strip cropping, terracing, land leveling, crop rotation, and conservation management of range, woodland, and wildlife. The Service also conducts research in soil conservation, which helps solve operational problems, determines efficiency of practices, and finds new and better methods for the Soil Conservation Service to use in its field work. The technicians of the Service work directly with farmers and ranchers in soil conservation districts organized under State laws and operated under farmer direction. The Service promotes the application of tested soil and water conservation practices.

Organization

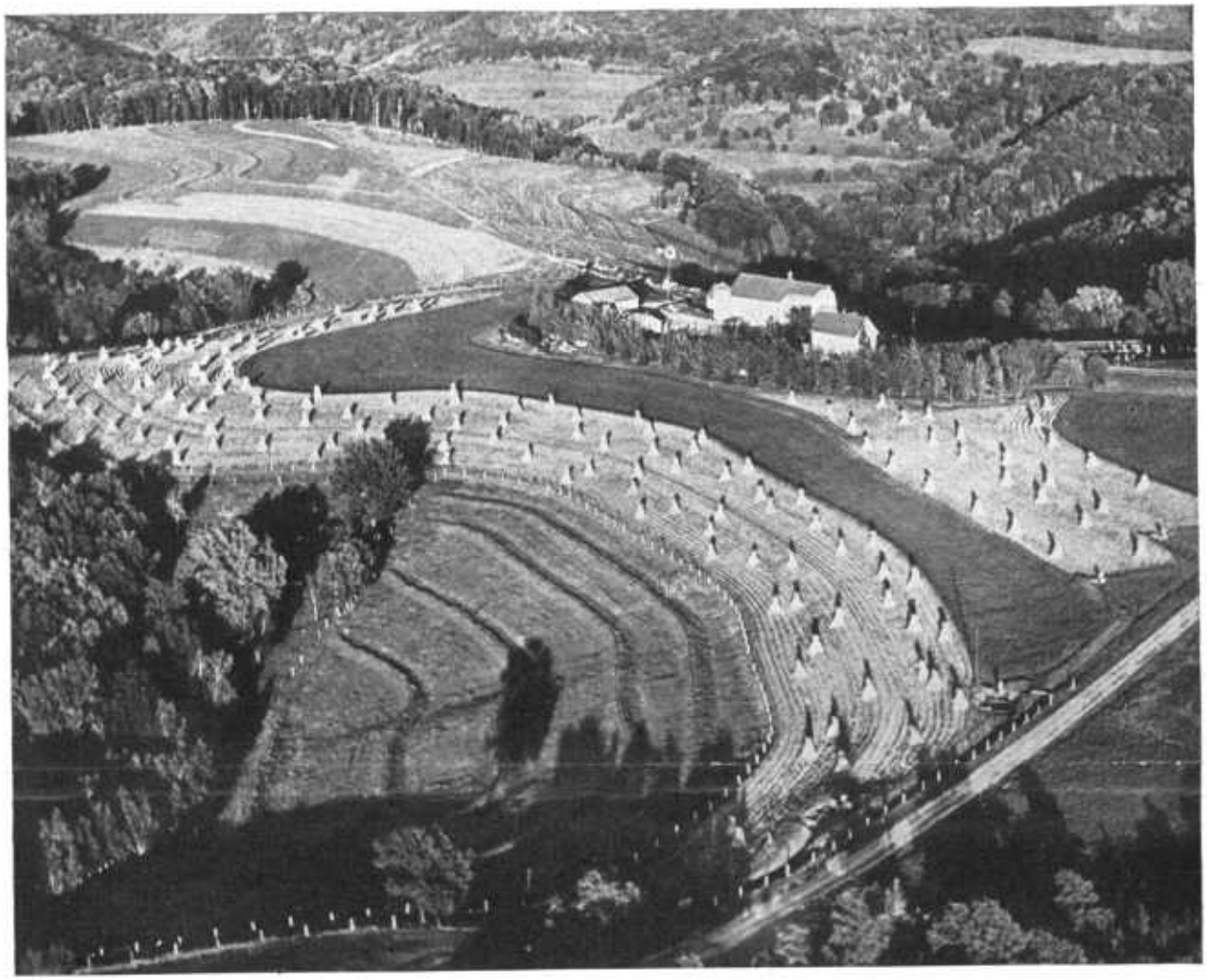
The Soil Conservation Service is organized on a regional basis with its main headquarters in Washington, D. C. It has about 3,500 offices located in every State in the Union and also in Hawaii, Puerto Rico, and Alaska. The headquarters of the regional offices are located in Upper Darby, Pa.; Spartanburg, S. C.; Milwaukee, Wis.; Fort Worth, Tex.; Lincoln, Nebr.; Albuquerque, N. Mex.; and Portland, Oreg.

Specialized Positions

Some of the specialized positions in this bureau, together with brief duty descriptions, are as follows:

Soil Conservationist.—The principal job of the Soil Conservationist is to work with farmers and ranchers who cooperate with soil conservation districts. He helps them to analyze their farming and land use problems and works out with them ways and means of planning and installing soil and water conservation practices that will provide a profitable operation of the farm enterprise. He must be able to deal effectively with rural people both individually and in groups. He must also be able to interpret from maps such physical information about the land as the kind of soil, degree of erosion, slope, degree of wetness, and the condition of ranges and pasture and other land use information so that the capability of the land for continuous production without impairment can be determined. These positions range from GS–5 through GS–15.

Soil Scientists collect physical data on which conservation farm planning is based. Those whose major experience and training have been in soils and closely related subjects and who understand the relationship of soils and plants to each other, find opportunities for work in the field of soil science. The range of these positions is from GS–5 through GS–13.



The Soil Conservation Experiment Station is a proving ground for the conservation practices needed to combat soil and water losses on a watershed. Effects of erosion on slopes of varying characteristics are scientifically measured, and the control methods are tested under practical field conditions. The results prove invaluable in conservation farm planning.

That portion of the station seen in this photo shows how a conservation farm plan fits the land like a tailor-made suit of clothes. In this strip cropping system long winding rows on the contour cling to curves on the slopes. Bands of close-growing grasses between the corn and grain crops slow the water run-off and hold the soil. Where the grade becomes steeper and longer, in the foreground toward the left, terraces break the slope into a series of short slopes. Water is further retarded to soak into the ground and to deposit its soil content. Note the contour fence below the corn strip.

Pasture and woodland occupy land that is too steep or otherwise undesirable for cultivation. The trees around the building serve as a windbreak. Small uncultivable areas are planted to wildlife cover.

Engineers solve problems of safe water disposal and utilization through the use of various mechanical and vegetative measures. Agricultural and civil engineers whose training and experience have been directed toward the solution of drainage and irrigation problems or in planning, designing, and constructing various types of hydraulic projects involving earth-moving and reinforced concrete construction are needed in soil conservation work. These positions range in grade from GS–5 through GS–13.

Range Conservationists advise with farmers and ranchers on plans for stocking, grazing, and managing their ranges and pastures in accordance with good conservation practices. These positions range in grade from GS–5 through GS–13.

Opportunity for Advancement

The Soil Conservation Service is a career-service organization whose activities have expanded in the past few years. As such, its policy is to employ people in the lower grades and promote them to positions of higher responsibility in the organization as they gain skill and experience.

Activities

The Service has made detailed conservation plans for more than 920,000 farms and ranches in the United States that cover about 255 million acres, and all of the conservation treatment has been completed, according to plan, on about 150 million acres. This treatment included the making of all needed changes in land use and the application of those conservation practices needed to keep the land continuously productive. The treatment was planned acre by acre in accordance with the capabilities of the land as determined by soil conservation surveys previously made. By all reasonable standards, this work is of a permanent nature.

The Service has developed many new techniques in the science and art of land conservation through research and field studies. It has become the acknowledged world leader in the technology of soil and water conservation as evidenced by the increasing number of nations that are sending specialists and scientists to the United States to study the American conservation system under Soil Conservation Service technicians. During 1951, 237 officials, representing 42 different foreign countries, spent time with the Service studying the conservation methods and techniques.

This agency has been mainly responsible for awaking the people of this nation to the seriousness of soil erosion problems and for making them conscious of the need for a national conservation program. Not only farmers, but industrial, educational, and civic leaders and the public in general are now increasingly aware of the dangers of continued erosion and soil wastage and they are expressing their interest in numerous ways.

The Service has sponsored and helped to bring about the Soil Conservation districts movement that has spread to every State of the Nation since 1937. There were more than 2,400 of the farmer-organized, farmer-operated districts in the United States and its possessions by 1952. They cover about one and a third billion acres and include more than 80 percent of the farms of the Nation. They are organized under State laws and are probably the most effective and democratic means yet devised for administering a comprehensive land use and soil conservation program on a Nation-wide basis without resort to State or Federal regulation. The soil conservation district is a completely democratic institution, strengthening local autonomy, and placing responsibility for soil conservation and decision on the farmers themselves.

Federal Crop Insurance Corporation

This agency of the Department develops and administers programs providing farmers with insurance against the loss of crop investments which occur when growing crops are damaged or destroyed by causes beyond the control of those who produce them. Federal crop insurance operates like other forms of insurance: the farmer pays a premium for the protection offered, and collects an indemnity when his crop is severely damaged or destroyed. The premium is based on the crop loss experience of the farms within a county, and the insurance offered covers losses from all natural hazards to growing crops—unfavorable weather, insects, and plant diseases. This all-risk protection is not available to farmers from any other source.

Crop insurance programs are now in effect in nearly a third of the Nation's 3,000 counties. The crops covered under single crop contracts include wheat, corn, cotton, tobacco, flax, and dry beans. Multiple crop insurance, which provides combined protection on a variety of crops is also available in some counties. An experimental program on citrus crops is operating in one county. The crop insurance program is expanding gradually, and as additional data become available, new programs covering new crops will be added to those now in operation. The long-range goal of this program is the extension of crop insurance on a sound business basis to all farmers at a reasonable cost. The Federal Crop Insurance Corporation is a

nonprofit organization, and premiums collected from farmers are expected to balance over a period of years with indemnities paid to insured farmers.

Since premiums paid by farmers are used only to pay losses, the program represents, in effect, a county-mutual plan under which farmers develop their own program of protection against crop hazards. Administrative costs of the program are paid by appropriations, as a service to agriculture.

Organization

Federal Crop Insurance operations include four administrative levels. A county office makes direct contact with the farmers in taking applications for insurance, making acreage reports, collecting premiums, and relaying notices of loss to the State Director's Office which handles the adjustment of losses, accepts or rejects the applications for insurance, issues policies, and generally supervises and audits the work of the county offices. The Branch Office in Chicago is the central "business office" of the Corporation where the business files are kept, statistical data are compiled, premiums calculated, loss claims audited, and indemnities paid. The "home office" of the Corporation in Washington, D. C., has general supervision over the work of all field offices, develops the programs and operating procedures, establishes the actuarial basis—coverage and rate—for each county, and handles the budget and accounting on both administrative funds and capital stock.

Specialized Positions

Specialized positions in this agency include actuary, agriculturist, agricultural economist, government accountant, and administrative officer, with duties as follows:

Administrative Officer.—These positions range in grade from GS–11 to GS–15 depending upon the responsibilities involved, and in duties from specialized assignments in fiscal, procedure, audit, personnel, and sales work to general supervision of all phases of the program in the field by District Supervisors, State Directors, Area Directors, and Assistant Managers.

Government Accountant.—Grades in this position range from GS–9 to GS–14. The work includes planning and directing the program and administrative accounting activities; formulating fiscal policies; coordinating fiscal operations; devising, installing, and maintaining accounting systems; maintaining journals, general ledgers, and other related fiscal records for program and administrative accounting operations; preparing and installing fiscal procedures and other controls designed to effect uniform and efficient fiscal operations; analyzing expenses to determine operating unit costs; examining, certifying, and scheduling vouchers for payment; maintaining necessary fiscal records, preparing regular and special financial statements and other fiscal reports.

Agricultural Economist.—The grades for these positions range from GS–7 to GS–14. This work includes research studies based on a thorough background knowledge of the commodity, economic, statistical, and insurance factors involved, for the purpose of developing new crop insurance programs or discovering the strength and weakness of programs in operation; preparation or supervision of the preparation of plans for insurance on different commodities; and appraisal of the economic results of insurance programs. The primary difference between agricultural economic work in the crop insurance field and other agricultural fields is the integrating of crop insurance principles into the economic and statistical factors of the commodity being insured.

Actuary.—The grades of these positions range from GS–5 to GS–12, with the GS–5 grades primarily trainee jobs. This work involves the development of actuarial techniques to be used in computing appropriate coverages and adequate premium rates for the crop insurance program. It also involves the collection, compilation, tabulation, and analysis of insurance statistics which are the actuarial basis of the insurance program. Actuarial techniques must be developed to utilize fully the insurance statistical data available.

Agriculturist.—The grades for these positions range from GS–5 to GS–14. The work involves the relating of knowledge on cultural practices, crop hazards, soil types, production costs, and crop yields in the different farming areas of the United States to the risk assumed under the insurance contract. The agriculturist aids in formulating and testing statistical techniques required for computing crop coverages, premium rates, and premium reserves for the commodities insured. He assists State and county Production Marketing Administration Committees in developing the actuarial structures for local county crop insurance programs. The agriculturist also analyzes provisions of the insurance contracts, policy, regulations, and procedures for the development of underwriting data for fixing coverages and premium rates commensurate with liabilities assumed under terms of the insurance contracts.

Opportunity for Advancement

Federal crop insurance is an expanding program, with considerable experimental work being done or

How Crop Insurance Works....

1 Farmer buys insurance– 2 Pays premium

3 If crop is lost – 4 Farmer is paid indemnity

being planned to extend it to additional crops and to areas not now covered. Growth of the program would quite naturally provide expanding job opportunities, opening the way for individuals of ability and experience to grow with the program.

Since crop insurance is a relatively new field of agricultural work, there is considerable opportunity for advancement by employees who display unusual aptitude for meeting the administrative or program problems which an expanding, developing activity such as this must face.

Activities

Real progress has been made by this agency toward the development of a sound crop insurance program. It has pioneered in an uncharted field, with only the failures of private companies in short-lived ventures into the all-risk crop insurance field available as background when Federal Crop Insurance operations were started in 1939 with wheat insurance.

Valuable experience has been obtained that has resulted in crop insurance policies which offer protection of the investment in a crop instead of protection of both the investment and a profit as provided in most of the contracts prior to 1948.

Major refinements of the program and the actuarial basis for each insured commodity have resulted from experience gained since wheat was first insured in 1939. In some years heavy losses have resulted while in other years losses have been moderate and premium reserves have accumulated. Since the adoption in 1948 of the more conservative approach to some of the basic problems of insurance on growing crops, the combined national results have been much more satisfactory than in earlier years with premiums for the 1948–51 period exceeding indemnities by approximately $2,000,000.

Through the thousands of indemnities paid annually to farmers who have suffered severe crop losses, the program has eased the shock of crop loss for individual farmers, business communities, and the national economy. Crop insurance has kept many farmers from being driven out of business by crop failures that struck when their finances were at "low ebb" and many others from suffering severe financial reverses due to crop losses.

List of Additional Positions in the Department

Some of the positions not described in the separate sections on the bureaus are listed below:

Adjustor, loss
Biological aid
Bookkeeper
Bookkeeping machine operator
Botanist
Budget clerk
Cartographer
Cereal technologist
Civil engineer
Commodity exchange supervisor
Commodity futures analyst
Commodity marketing specialist
Dairying extension specialist
Draftsman
Duplicating machine operator
Editor of periodicals
Ecologist
Employee relations officer
Extension educationist
Extension food preservation specialist
Farm ownership specialist
Fire control aid
Fire prevention aid
Fiscal analyst
Fisheries research biologist
Foreign supply program liaison officer
Glass blower
Household equipment specialist
Housing specialist
Hydrologist
Illustrator (scientific)
Instrument maker
Legislative reference assistant
Market news reporter
Meat technologist
Microanalyst
Microbiologist
Mycologist
Nutritionist
Passenger rate clerk
Payroll clerk
Personnel technician
Pharmacologist
Photogrammetric engineer
Photographic chemist
Pier inspector
Plant physiologist
Printer
Procedure analyst
Procurement analyst
Project field auditor
Purchasing officer
Range expert
Rural sociologist
Seed technologist
Social science analyst
Statistical assistant
Sugar technologist
Tobacco inspector
Transportation specialist
Warehouse examiner
Water facilities specialist
Wool technologist

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