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PROFILES OF PH.D.'S IN THE SCIENCES, SUMMARY REPORT ON FOLLOW-UP OF DOCTORATE COHORTS, 1935-1960.

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NATIONAL ACADEMY OF SCIENCES-NATIONAL RES. COUNCIL

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DESCRIPTORS- *DOCTORAL DEGREES, *SCIENCES, *CAREERS, *MALES, *FEMALES, INCOME, FINANCIAL SUPPORT, EDUCATION, FAMILY (SOCIOLOGICAL UNIT), GOVERNMENT ROLE, GEOGRAPHIC LOCATION,

QUESTIONS ABOUT THEIR CAREERS AND BACKGROUNDS WERE POSED TO 10,000 DOCTORATE HOLDERS WHO HAD GRADUATED FROM UNITED STATES UNIVERSITIES IN 1935, 1940, 1950, 1955, AND 1960. THE SAMPLE ITSELF WAS STRATIFIED SO THAT THE MAJOR EMPHASIS WAS ON THE HEALTH RELATED SCIENCES. THE QUESTIONNAIRES REQUESTED INFORMATION ON PRESENT EMPLOYMENT, JOBS PREVIOUSLY HELD, GEOGRAPHIC LOCATION AND MIGRATIONS, DUTIES AND RESPONSIBILITIES, EARNINGS, AND FAMILY AND EDUCATIONAL BACKGROUND. SOME OF THE FINDINGS REPORTED ARE--(1) MOST RESPONDENTS WORK, OR HAVE WORKED, AT COLLEGES OR UNIVERSITIES, (2) THE PERCENTAGE OF DOCTORATE HOLDERS ENGAGED IN RESEARCH HAS, AND STILL IS, INCREASING, BUT ONLY A SMALL PERCENTAGE IS EXCLUSIVELY ENGAGED IN RESEARCH, (3) WORKING WIVES AND THE GOVERNMENT ARE PROVIDING MORE AND MORE SUPPORT FOR PREDOCTORAL EDUCATION, (4) POST-DOCTORAL GOVERNMENT SUPPORT HAS INCREASED, WHILE FOUNDATION SUPPORT HAS DECREASED, (5) GEOGRAPHIC MIGRATION OF WOMEN PH.D.'S IS A FUNCTION OF THEIR MARITAL STATUS, (6) SALARY LEVELS HAVE BEEN ADVANCING STEADILY, AND (7) THE MIDWEST HAS PRODUCED 40 PERCENT OF THE DOCTORATE HOLDERS BUT EMPLOYS ONLY 25 PERCENT OF THEM. SALARY LEVELS HAVE STEADILY ADVANCED WITH EACH NEW GENERATION STARTING AT A HIGHER LEVEL. THIS DOCUMENT IS A NATIONAL ACADEMY OF SCIENCES PUBLICATION 1293, CAREER PATTERNS REPORT NO. 1. (SK)

Career Patterns Report No. 1

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PROFILES OF Ph.D'S IN THE SCIENCES

SUMMARY REPORT ON FOLLOW-UP OF DOCTORATE COHORTS, 1935-1960

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Preface

Advancement of the public welfare and development of all aspects of a modern technological society are intimately bound up with the education of an adequate number of the society's members to the highest levels of which they are capable. Beyond that, the efficient employment of the skills these members have developed is essential. Comparatively little is known, of a quantitative nature, regarding the career patterns of the most highly-trained segment of the populace, and but little more is known about the backgrounds from which it comes. More information on all of these questions is needed if the development of new knowledge is to proceed at an adequate pace, and if this new knowledge is to be translated into accomplishments that can realize the bright promise of modern science and technology. Human agency is required for any of these developments to take place, and human resources are the basic determiner of the rate of development of science, technology, and social institutions generally. This report seeks to throw light on the career patterns of carefully selected samples of the most highly-trained manpower in the country, with particular reference to people in the health-related sciences.

The National Institutes of Health has provided support for this study, since its inception in 1962, as the first in a series of PhD Career Patterns Studies. Within the National Institutes of Health, the Resources Analysis Branch of the Office of Program Planning has furnished program guidance assuring that design and analysis anticipate practical policy considerations aimed at a broader and deeper understanding of the educational processes and career achievements that underlie the development of health resources. The study was based upon and made possible by the previous development of the Doctorate Records file of the Office of Scientific Personnel of the National Academy of Sciences--National Research Council. This file, which comprises the names of all holders of third-level research degrees from 1920 to the present and information about all degrees held by these people, was built up with the support of several public and private agencies, and is currently being maintained by the support of the National Science Foundation and the United States Office of Education. The file has been the starting point for a number of studies of doctorate-holders, including a series of publications relating to doctorate production and baccalaureate origins of doctorates. The present study is the most far-ranging and comprehensive follow-up study based upon the Doctorate Records file, and includes data on the professional careers of 10,000 holders of doctorate degrees, obtained over a quarter of a century. It concentrates on the aspects of these careers that are important for the development of scientific-manpower information and for the guidance of policy of government agencies seeking to improve the nation's scientific and technical resources, both individual and institutional. It is but the first step toward an understanding of these careers that will help make possible the development of programs of maximum efficacy and wisdom with respect to the relations of government and the educational resources of the country. It is hoped that this feed-back of career information may be beneficial to the National Institutes of Health and its associated organizations, to the universities and colleges from which these people came, and to the employers of high-level manpower generally.

The general design of this study is relatively simple, although the detailed data deriving from it are highly complex in their meaning and interpretation. Basically, samples were drawn from the doctorate-graduate populations of each fifth year--samples deemed to be sufficient in size to yield stable statistical results. The members of each graduation cohort, beginning in 1935, were followed up by means of a questionnaire, to determine what they were doing in each fifth year following graduation. Where were they living? For whom were they working? What sort of work were they doing? If in academic settings, what was their status in the academic hierarchy? What were their

earnings? In addition to such questions as these, the questionnaire sought information regarding the backgrounds from which they had come--information now gathered routinely from each new PhD graduate as part of the Doctorate Records, but not gathered prior to 1957. It also sought information with respect to sources of support for predoctoral and postdoctoral study, and for research that these people might now be doing. The fields represented in this study were primarily in the health-related sciences, but there were samples drawn from other fields also, in order to provide a wider context for the interpretation of the data.

This report is divided into a summary of major findings, chapters dealing with several of the important aspects of the careers of these doctorate-holders, and a number of appendixes with additional detailed information for those who wish to examine in greater depth the career patterns of various subgroups. It will be apparent to the thoughtful reader that there is a great deal of important information still to be derived from the data-bank from which the present report was prepared. It is expected, and indeed hoped, that many questions will be raised by the results here described. Comment and suggestions will be warmly welcomed by the author of the report, by the Office of Scientific Personnel, and by the National Institutes of Health.

TABLE OF CONTENTS

	Page
Summary	ix
Figure 1: Relative Importance of Geographic Regions at Successive Career Stages	x
Introduction	1
Origins of Present Study	1
Description of Data Collected	1
The Sample	1
Table 1: Questionnaire Total: Number of PhD's in Follow-Up Sample	2
Questionnaire Procedure	2
Table 2: Return Rate: Numbers and Percentages of Usable Returns	3
CHAPTER 1: EMPLOYMENT AND GEOGRAPHIC MIGRATION OF DOCTORATE-HOLDERS	5
Table 3: Present Employment and Job-Seeking, by Cohort and Employer Category	5
Table 4: Employers of Doctorate-Holders, 1962 Job	6
Table 5: Geographic Location of Doctorate-Holders at Three Career Stages	7
Figure 2: Relative Importance of Geographic Regions at Successive Career Stages, Cohorts 1935, 1940.	8
Figure 3: Relative Importance of Geographic Regions at Successive Career Stages, Cohorts 1945, 1950.	9
Figure 4: Relative Importance of Geographic Regions at Successive Career Stages, Cohorts 1955, 1960.	10
Table 6: Numbers and Percentage Migration from Region to Region at Three Career Stages	12
Figure 5: Diagram of Inter-regional Flow from Doctorate to First Postdoctoral Job	13
Table 7: Geographic Region of Present Job	14

CHAPTER 2: RESEARCH AND TEACHING ACTIVITIES 15
Distribution of Time 15
Table 8: Percentage of Time Devoted to Research, Administration, Teaching, and All Other Functions, by Cohort and by Time Period 16
Figure 6: Changing Pattern of On-the-Job Functions With Career Maturation 17
Table 9: Interrelations of Teaching, Research, and Administration on Present Job, by Decade Cohorts 19
Table 10: Persistence in Teaching from First Postdoctoral Job to Present Job . . . 20
Table 11: Persistence in Research from First Postdoctoral Job to Present Job . . . 21
Support for Research 22
Table 12: Categories of Research Support on Present Job 23

CHAPTER 3: SOURCES OF SUPPORT FOR EDUCATION 25
Table 13: Sources of Support for Graduate Education 26
Figure 7: Graphic Illustration of Fathers' Education Level 27
Table 14: Sources of Support, in Percentage, for First Postdoctoral Fellowship . . . 30
Table 15: Sources of Support, in Percentage, for Second Postdoctoral Fellowship . . 31

CHAPTER 4: SOCIAL MOBILITY 33
Table 16: Education of Father 34
Table 17: Education of Mother 35
Figure 8: Educational Level of Fathers of Doctorate-Holders 36
Figure 9: Educational Level of Peers of Fathers of PhD's, by Doctorate Cohort . . . 37
Table 18: Occupational Level of Father—Percentage in Each Category 39
Figure 10: Changing Occupational Sources of Doctorate-Holders 40
Table 19: Relation of Education of Father to Category of Present Employer, All Fields Combined 41
Table 20: Relation of Education of Mother to Category of Present Employer, All Fields Combined 42
Table 21: Relation of Occupation of Father to Category of Present Employer, All Fields Combined 43
Table 22: Relation of Family Background Factors to Present Employer Category . . . 44

CHAPTER 5: JOB MOBILITY AND FIELD CHANGES 47
Table 23: Job Stability: Percentage of Doctorate-Holders with No Job Changes During Successive Five-Year Work Periods 47
Table 24: Number and Percentage of Doctorate-Holders with Varying Numbers of Job Changes in Each Five-Year Period Following Graduation 48
Table 25: Field-Retention Rates from Doctorate to Present Job 50
Table 26: Field-Switching from Doctorate Degree to 1962 Job 51

CHAPTER 6: WOMEN DOCTORATE-HOLDERS 53
Table 27: Employers of Women Doctorate-Holders 53
Geographic Location and Migration 55
Table 28: Regional Distribution of Doctorate-Holders at Three Career Stages; Total of Men plus Women, Married Women, and Single Women 55
Table 29: Net Change in Doctorate Population by Geographic Area as a Result of Migration from Region of Doctorate to Subsequent Jobs 56
Table 30: Percentage of Women Remaining in Each Geographic Region at Two Career Choice Points, by Decade Cohort 57
On-The-Job Functions 58
Table 31: Time Distribution Among Teaching, Research, and Administrative Functions for All Doctorate-Holders, Single Women, and Married Women, by Cohort 59
Table 32: Interrelations of Teaching, Research, and Administration on Present Job Women Doctorate-Holders, by Decade Cohorts 60

CHAPTER 7: EARNINGS OF DOCTORATE-HOLDERS 63
Table 33: Geometric Mean of Salaries on Present Job, by Major Function Performed, Fields, and Cohorts 64
Table 34: Geometric Mean of First Postdoctoral and Present Salaries by Field of Doctorate 66
Figure 11. Geometric Means of Salaries, by Cohort, All Fields Combined 67
Conclusions 68

APPENDIXES

71

Descriptive List of Appendix Entries 71

Appendix 1: Career Patterns Questionnaire 75

Appendix 2: Number of Presumed Living PhD's in Each Field and Cohort 77

Appendix 3: Numbers of Returned Questionnaires, by Field and Cohort 78

Appendix 4: Category of Present Employer, by Field and Cohort 79

Appendix 5: Geographic Region of Present Job 82

Appendix 6: Shift in Function from First Job to Present Job -

A. From Teaching to Research. 85

B. From Teaching to Administration 86

C. From Research to Teaching. 87

D. From Research to Administration 88

Appendix 7: Numbers of Cases with Various Categories of Present Research Support . 89

Appendix 8: Sources of Support for Graduate Education, in Percent 92

Appendix 9: Sources of Support for First Postdoctoral Fellowship 95

Appendix 10: Duration of First Postdoctoral Fellowship 98

Appendix 11: Education of Father 101

Appendix 12: Education of Mother 104

Appendix 13: Occupational Level of Father 107

Appendix 14: A. Relation of Education of Father to Category of Present Employer, Biological Fields 110

B. Relation of Education of Mother to Category of Present Employer, Biological Fields 111

C. Relation of Occupation of Father to Category of Present Employer, Biological Fields 112

Appendix 15: Field-Switching from Doctorate Degree to 1962 Job, All Cohorts Combined . 113

Appendix 16: Employers of Women Doctorate-Holders 117

Appendix 17: Geometric Mean of Salaries on Present Job, By Major Function Performed, Fields, and Cohorts 118

Summary

Ten thousand doctorate-holders were asked about their professional careers. They were graduates of United States universities in the years 1935, 1940, 1945, 1950, 1955, and 1960. A carefully stratified sample was included in the study, placing major emphasis on the health-related sciences, but including all fields, arts and humanities as well as sciences. They were asked about the jobs they hold and have held, their geographic migrations, functions performed on the job, earnings, and about their family and educational backgrounds. The major findings may be briefly summarized as follows:

- Most of them now work, and have worked in the past, in the nation's colleges and universities. However, as careers mature, there is a net shift away from university employment to other categories. The more recent graduates have had less academic employment, but also shift less to non-academic jobs later in their careers.
- The Midwest produced 40 per cent of the doctorates, but at present employs only 25 per cent. The South produced 12 per cent of the doctorates, and currently employs 24 per cent. New England produced one doctorate out of eight, and employs 1 in 14. The West produced 12 per cent of the doctorates, and employs half again as many. The Middle Atlantic states produced just about as many as they employ.
- The percentage of doctorate-holders engaged in research, and the average time spent in research, have been going up steadily. Still, the percentage who do research exclusively is rather small; a healthy balance of research and teaching, or research and administration, or all three together, is the rule.
- There have been significant changes in sources of support for predoctoral education over the past quarter of a century. Family support has tended to shift from parents to working wives; the government has assumed a much larger role; and the students' own earnings are a decreasing percentage of the total.
- There has been a marked increase in postdoctoral fellowship support by government agencies, and a relative drop in foundation support. Duration of such fellowships has not changed markedly in 25 years.
- Each new student generation has been drawn from a broader social base than its predecessor. As education has become more general, the lower socio-economic groups have produced more doctorates. The professional portion of the population, although still the predominant source, has declined relatively as the lower-income groups have achieved more education.
- Job mobility, both as to number of job changes and as to changes from field to field, was accelerated by World War II, but has declined as the postwar era has passed into history. Field-switching is most characteristic of the less-specialized fields, in spite of the fact that the more general fields allow greater latitude before a shift is registered as a category change. Those who become deeply immersed in research shift less than do the others.
- Women doctorate-holders are employed primarily in colleges and universities, and principally in teaching positions. They do less research, far less administration, and tend to be more polarized between research and teaching than are the men; fewer of them have a balanced combination of responsibilites.
- Geographic migration of women PhD's varies according to marital status, as wives move with their husbands' job opportunities. New England loses a smaller percentage of women than of men; the South gains fewer. The West gains more single women but fewer married women.
- Of those PhD's who spend half or more of their time on research, about half are supported by private resources, half by government sources. Support for the younger researchers comes more from government; in the bio-sciences, the Public Health Service is the sole research supporter of twice as high a proportion of the graduates of the most

recent decade as of the graduates of the earliest decade.

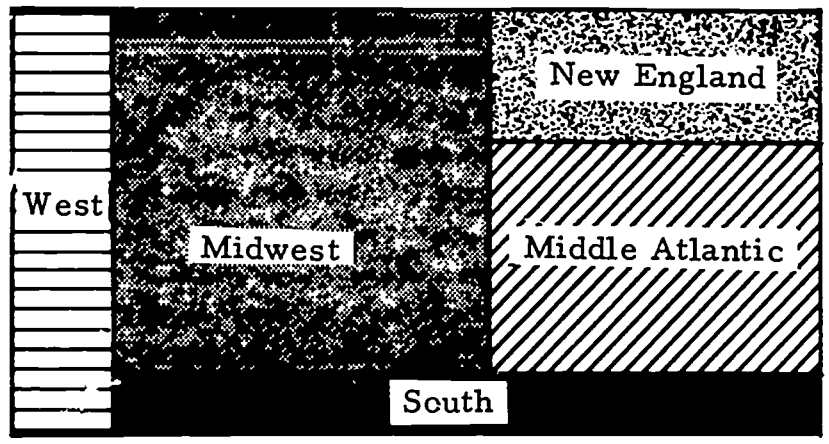
- Salary levels have been advancing steadily, with each new generation of graduates starting at a higher level and advancing more rapidly than the earlier cohorts. Salary varies more by function performed on the job than by field, although there is interaction between these factors. Administrators obtain the highest salaries, teachers the lowest, across almost all fields and all ages of graduates.

Figure 1

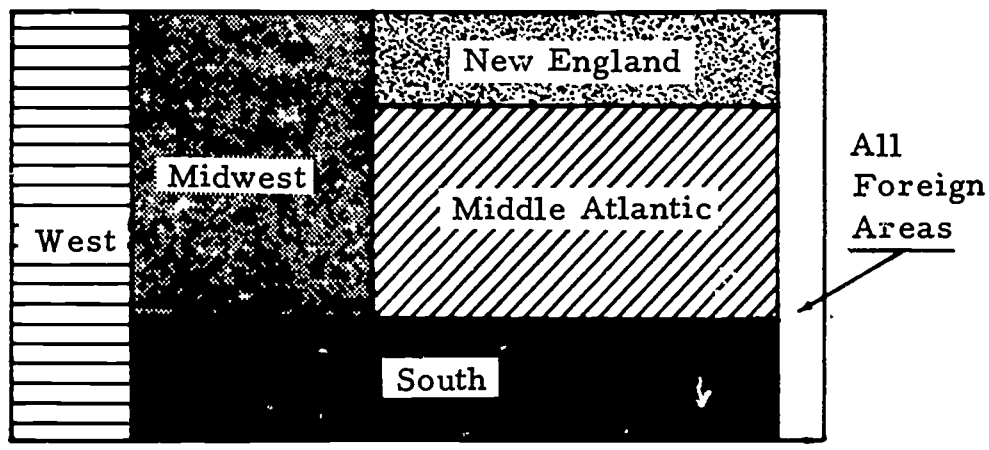
Relative Importance of Geographic Regions at Successive Career Stages

Total, All Cohorts

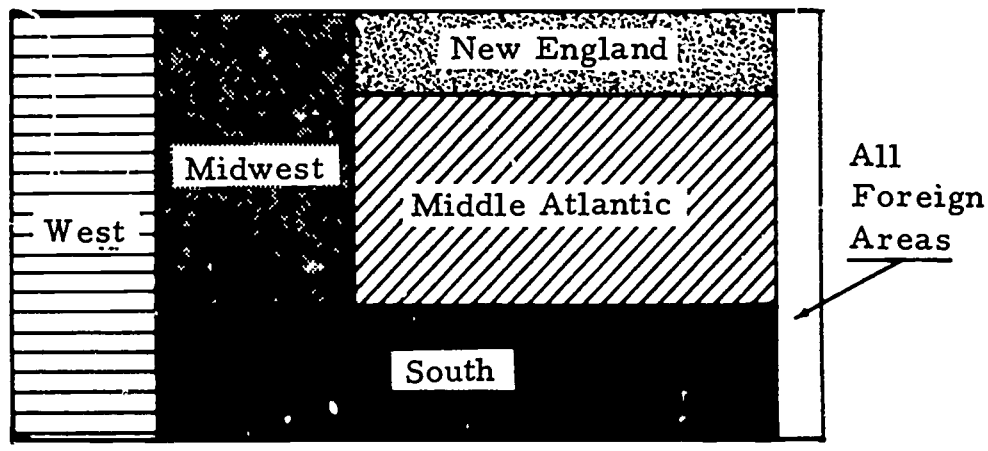
Region of PhD



Region of First Postdoctoral Job



Region of Present Job



PROFILES OF Ph.D'S IN THE SCIENCES

Introduction

Origins of the Present Study

The present study originated in an interest shared by the National Institutes of Health (NIH) and the Office of Scientific Personnel. Both offices have been concerned about manpower problems for many years, in particular with respect to high-level personnel. The Office of Scientific Personnel had accumulated, with the help of several private and public agencies, a comprehensive file of the names of doctorate-holders from United States universities, dating back to 1920. This is known as the Doctorate Records File, collected through a continuing Doctorate Survey. The National Institutes of Health is concerned with the educational processes that produce doctorates in the health-related sciences, and with the utilization of these people after they achieve the doctorate degree. The Office of Scientific Personnel has an interest in both educational processes and utilization, and the possibility of productive feed-back of postdoctoral-experience data into the educational process. Because the common interest between the two agencies was so extensive, arrangements were made to canvass the postdoctoral careers of systematic samples of doctorate-holders. The National Institutes of Health provided financial support and program guidance; the follow-up study of careers and data analysis have been done by the Office of Scientific Personnel. Progress and preliminary reports have been prepared over the past two years; the present report is the first comprehensive account of the study and findings.

General Description of Data Collected

Each person included in the study was asked to complete a questionnaire, the first items of which had been filled in from the machine records of the Office of Scientific Personnel. The respondents were asked to check the accuracy of this pre-recorded information and to provide a number of items of information about jobs held at each five-year interval following the doctorate degree. In addition, they were asked to provide certain items of background information. Questions asked regarding jobs included the name and location of employer; the field of specialization; the percentage of time devoted to teaching, to research, to administration, and to other activities; and annual professional income. If the respondent was employed by a college or university, information was sought regarding academic rank and status as faculty or non-faculty, dean or department chairman.

Background information included occupational category of father, educational level of father and mother, number and ages of siblings, marital status and ages of children, size and type of high school of origin, and date of high school graduation. Information that has never been collected as part of the Doctorate Survey, but which was included in the present study, includes sources of support during graduate years, source of support of postdoctoral fellowship, and length of such fellowship, if any. Information was also requested as to the number of job changes during each five-year period following graduation, and, for the current position only, sources of support for research, if any research was being done. Finally, to facilitate indentification and collation of records, the individual's social security number was requested.

The Sample

Interest on the part of NIH was naturally concentrated particularly in the health-related sciences, but was extended to all doctorate fields in order to furnish a broad normative base for interpretation of the data in specialized science fields. In order to obtain long-term career data, and yet include also the experience of more recent doctorate-holders, the various doctorate years were sampled in a sytematic fashion, a sample being drawn from each fifth-year cohort, beginning in 1935. Earlier, it had been intended to go back to 1925, but it was found that, because of the age of that group, differential death rates would be so high as to result in severely biased

data--the younger members of each of the earliest cohorts being necessarily predominant in the respondent group. For each field-and-year group, the original sample included approximately 100 cases, provided there were that many in the given year and field. Because the rate of doctorate production in the years 1935, 1940, and 1945 was low, the following years, 1936, 1941, and 1946, were included where necessary to increase the sample size. In all of the tabulations to follow, however, the cohorts will be identified only by the years 1935, 1940, 1945, 1950, 1955, and 1960, respectively. Where the number of cases in any given field-and-cohort exceeded 100, a random-sampling procedure was used to reduce the included sample to about 100 cases. This initial sampling resulted in 15,348 cases; of these, 517 were found to have died. In terms of percentages, the death rate ranges from 0.3 per cent in the 1960 cohort to 8.7 per cent in the 1935 cohort, and is 3.36 per cent for the total group. The total number of living PhD's in this study--14,831--is given in Table 1 by field and cohort. For greater detail, Appendix 2 contains the data for the 24 subfields.

TABLE 1

Questionnaire Total: Number of Presumed Living PhD's in Follow-Up Sample, by Field and Cohort

Field of Doctorate	All Cohorts	Cohort 1935	Cohort 1940	Cohort 1945	Cohort 1950	Cohort 1955	Cohort 1960
Total, All fields	14831	2213	2492	2002	2383	2809	2932
Bio-Sciences, Total	4481	538	840	470	597	929	1107
Basic Medical Sciences	2712	278	555	231	355	611	682
Other Bio-Sciences	1769	260	285	239	242	318	425
Medical Sciences	385	60	53	35	52	102	83
Agricultural Sciences	767	107	107	95	151	187	120
Psychology	662	104	113	115	124	110	96
Social Sciences	2667	431	427	428	417	469	495
Mathematics	641	100	88	88	102	133	130
Physical Sciences	1880	311	325	277	360	305	302
Engineering	700	106	110	89	137	136	122
All other Fields	2648	456	429	405	443	438	477

Questionnaire Procedure

Addresses for the sample drawn from the Doctorate Records file were sought from several sources: the address lists of professional and scientific societies, American Men of Science, Directory of American Scholars, Who's Who, and any other available compendium. For cases not located in this way, addresses were sought from the alumni societies of the schools from which these people received their baccalaureate and doctorate degrees. All of these sources taken together provided addresses for over 92 per cent of the original sample. These addresses did not all become available simultaneously, and the questionnaires were consequently not all sent at the same time. It has been found that address lists are highly volatile--that is, because of frequent changes, they are best used quickly, lest they become obsolete. Three main groups of cases were therefore involved in mail-outs, as different segments of the address lists became available. Also, as expected, the returns did not come in uniformly, and some cases needed a follow-up letter to induce them to respond. A special effort was made with respect to one group of cases that had not responded to either the original letter or the follow-up. For a sample of 50 such cases, an attempt was made to abstract the needed data from American Men of Science, enter it in pencil on a copy of the questionnaire, and send it out for verification. This proved to be very laborious and expensive,

and the results did not warrant continuing it. The response rate, at the cut-off date for processing of the records for this report, was 67.5 per cent overall. While this is very satisfactory as mail surveys go, it was felt that it should be examined for clues to possible bias induced by non-response. Consequently, the final usable total of returned questionnaires was compared with the originally drawn sample by field and cohort to ascertain the degree of bias, if any, that could be associated with these variables alone or in combination. The results are indicated in Table 2 and Appendix 3.

Comparison of questionnaire-return rates by cohort shows that higher return rates are obtained for the younger cohorts than for the older cohorts, although the trend is not completely uniform within fields. Higher return rates are generally obtained from male subjects than from female subjects. This is typical for returns from mail-out procedures, especially where female subjects whose careers have been interrupted by family responsibilities doubt that the requested data will be useful. In terms of fields, higher return rates were obtained from those with doctorates in the biological sciences, psychology, mathematics, and the physical sciences. Lower return rates were obtained in the social-science fields, the humanities fields, education, and engineering.

A special procedure was used in the case of the 1960 engineering doctorates who were participants in a similar study being conducted at approximately the same time. As the questionnaires were very similar in the two studies, those from the engineering study were used for the 1960 cohort rather than annoy the subjects with an essentially duplicate request for the Career Patterns study. A few items were not complete for this group, but no substantial limitations of the data were induced by this procedure, and quite possibly the return rate for both studies was enhanced by this procedure for this special group.

When the data came in, the questionnaires were coded for IBM machine-processing, and each coding step was checked by a second coder to insure high accuracy. Nevertheless, when the cards had been punched--four IBM cards per questionnaire--it was found necessary to go through some further checking by computer operations designed to detect and eliminate certain residual errors, such as impossible codes. No machine processes, however, could eliminate errors within the permissible range of variation, and it is probable that some such errors remain. They should, however, be minimal and not of a magnitude that would induce errors in final interpretation. In the computer operations, it was necessary at one stage to insert a few blank records to complete a data

TABLE 2

Return Rate: Numbers and Percentages of Usable Returns, by Field and Cohort

Field of Doctorate	All Cohorts No.	%	1935-1940 Cohort No.	%	1945-1950 Cohort No.	%	1955-1960 Cohort No.	%
Total, All Fields	10017	67.5	2965	63.0	2916	66.5	4136	72.0
Bio-Sciences, Total	3166	70.6	922	66.9	746	69.9	1498	73.6
Basic Medical Sciences	1888	69.6	559	67.1	402	68.6	927	71.7
Other Bio-Sciences	1278	72.2	363	66.6	344	71.5	571	76.9
Medical Sciences	254	66.0	70	61.9	63	72.4	121	65.4
Agricultural Sciences	536	69.9	151	70.6	168	68.3	217	70.7
Psychology	468	70.7	144	66.4	171	71.5	153	74.3
Social Sciences	1712	64.2	506	59.0	524	62.0	682	70.7
Mathematics	458	71.4	131	69.7	131	68.9	196	74.5
Physical Sciences	1362	72.4	444	69.8	456	71.6	462	76.1
Engineering	463	66.1	138	63.9	144	63.7	181	70.2
All Other Fields	1598	60.3	459	51.9	513	60.5	626	68.4

block. It is possible that elimination of these blanks may, in some tables, have escaped our vigilance . It should occasion no concern, however, if some tables show 10,020 cases rather than 10,017, the actual number. The blanks would always fall in an "unknown" or "no data" category and thus do not distort the statistical record. Similarly, in a few tables, a single case was lost through some undiagnosed machine error, so that the total is 10,016. Again it is apparent that no significant differences will be induced by this unexplained discrepancy. For computer processing, the data from the four punched cards were transferred to a consolidated tape record to facilitate cross-tabulations. Most of the tables in this report were produced directly by the computer; some have been re-typed from the computer data where a format rearrangement or combination of tables was desired.

Because the records were received at various times over a period of several months, it became necessary to set an early date for "data cut-off" with respect to "present job" in order to permit uniform interpretation of this term. This date was set as of 1 January 1963, and thus reflects a situation approximately two years later than the "1960 job," which was specified on the questionnaire form as the job held at the end of December 1960.

In the several chapters of this report, chief emphasis will be placed on description of the data and interpretation of statistical significance, with only minor emphasis on the social implications of the data. In some cases, however, comments regarding significance of the data for governmental policy may be attempted, where interpretations are sufficiently clear-cut. Because of the complexities of the many factors involved in any educational and manpower question, and of the subtleties of the interactions of policies adopted by government agencies on the one hand and those of a large number of independent colleges and universities on the other (to say nothing of the manpower policies of thousands of independent business establishments), many of the implications that may be potential in these data can only be understood after a much more extensive study than is possible in this first report. Cross-tabulations, holding constant some variables while allowing others to vary as they may, will no doubt eventually permit a much clearer, if more complex, picture to emerge from the study of these 10,000 professional careers.

Mention should be made at this point of some of the terms and categories that will be used throughout the report. The first concerns fields of specialization. Whenever field is used without qualification, it refers to field of doctorate. The original sampling was based on 24 subfields; these are generally given in the appendix tables. For presentation in the text, these are generally condensed into a smaller number of more inclusive groups. Some comments regarding inclusions and exclusions may be helpful: The term "Bio-Sciences, Total" is used to include the "Basic Medical Sciences" and "Other Bio-Sciences," but it does not include what are termed the "Medical Sciences" and "Agricultural Sciences." Within the subfields, the term "Physiology" is short for "Physiology and Related," including anatomy, cytology, embryology, and pathology. "Botany" includes phytopathology. "Zoology" includes entomology. "Miscellaneous Biology" includes biophysics, biostatistics, ecology, hydrobiology, and other bio-sciences not specifically categorized."Agricultural Sciences" include forestry, agronomy, fish and wildlife, horticulture, and animal husbandry, as well as fields carrying a specific agricultural label. "Medical Sciences" include medicine and surgery, pharmacy, public health, veterinary medicine, and hospital administration. "Sociology" includes anthropology and archeology. "Political Science" includes public administration and international relations. "Professions" include business administration, home economics, journalism, law, library and archival science, religion and theology. "Arts and Humanities" include fine and applied arts, linguistics, music, philosophy, speech, and dramatic arts.

The basic geographic regions are the nine census regions of the United States. These are as follows: New England: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut. Middle Atlantic: New York, Pennsylvania, New Jersey. East North Central: Ohio, Indiana, Illinois, Michigan, Wisconsin. West North Central: Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas. South Atlantic: Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida. East South Central: Kentucky, Tennessee, Alabama, Mississippi. West South Central: Arkansas, Louisiana, Oklahoma, Texas. Mountain: Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada. Pacific and Insular, abbreviated to Pacific: Washington, Oregon, California, Alaska, Hawaii, Puerto Rico, Canal Zone, Virgin Islands.

Chapter 1

EMPLOYMENT AND GEOGRAPHIC MIGRATION OF DOCTORATE-HOLDERS

How many of the doctorate-holders are employed? Who employs them? Where are they employed? These are questions of primary concern to those interested in the optimal utilization of high-level manpower. They are also questions that can be answered rather simply, with a minimum of ambiguity. The answer to the first one is that all but 3 per cent of those responding to the questionnaire are now employed, and that 94 per cent of the group are not now seeking other employment. Seven out of 10 of those not now employed are not seeking employment--most of them apparently are enjoying retirement status, as they are concentrated in the oldest groups. This leaves fewer than 90 people out of 10,000 PhD's in the study who indicated they would like to obtain employment, either part time or full time. No doubt many of them have since done so: this is a remarkably small percentage, and may represent, at least in part, "frictional unemployment" in the process of labor turnover. Of those who are not now employed and not seeking employment, a number are, of course, women who are in effect employed full time as home-makers. No doubt, also, many of these will eventually return to the labor market.

As may be ascertained by reference to the questionnaire form, those who indicated that they were not employed at the time were asked to fill in their last previous employment in the space marked "present job." The data of Table 3 permit one to ascertain how many of these were employed in various types of jobs at the time of their retirement or other separation.

The great bulk of all respondents in this study--59 per cent--are employed by colleges and universities. The U.S. government employs 8 per cent, business and industry 15 per cent, while the remaining 18 per cent are distributed among all other categories of employers, including 3 per cent of the respondents employed in foreign countries. Table 4 provides greater detail by employer category and graduation cohort, combining the six cohorts into three decade groups. Still greater detail is provided in Appendix 4.

TABLE 3

Present Employment and Job-Seeking, by Cohort and Employer Category

Present or Last Employer Category Cohort or Employer [a]	Total Number of Respondents	Per cent Employed			Per cent NOT Employed			Per cent Status Unknown
		Not Seeking Job	Seeking Other Jobs		Not Seeking Job	Seeking a Job		
			Full time	Part time		Full time	Part time	
All Categories	10017	94.1	2.1	.4	2.2	.5	.3	.2
Cohort 1935	1355	89.9	1.3	.7	6.7	1.0	.2	.1
Cohort 1940	1610	93.5	1.4	.2	3.7	.8	.2	.2
Cohort 1945	1289	93.6	1.6	.8	2.0	.8	.9	.3
Cohort 1950	1627	95.9	2.3	.4	.8	.3	.2	.1
Cohort 1955	1912	96.0	2.4	.2	.7	.2	.5	.1
Cohort 1960	2224	94.7	3.2	.4	.9	.4	.2	.3
College/University	5917	95.0	1.8	.3	2.1	.4	.3	.2
U.S. Government	825	95.4	1.8	.6	1.3		.6	.2
Business, Industry	1506	96.3	1.8	.2	.7	.7	.2	.1
All Other Employers	1769	88.9	3.6	1.1	4.3	1.2	.4	.4

[a] Refers to last previous employer, in the case of those not presently employed.

TABLE 4

EMPLOYERS OF DOCTORATE-HOLDERS, 1962 JOB

COHORT	FIELD	TOTAL NO.	TOTAL %	PERCENT IN EACH EMPLOYER CATEGORY: COLLEGE & UNIVERSITY	BUSINESS & INDUSTRY	FEDERAL GOV'T	ALL OTHER EMPLOYERS
ALL	TOTAL, ALL FIELDS	10016	100.0	59.1	15.0	8.2	17.7
COHORT 35-40	TOTAL, ALL FIELDS	2964	100.0	55.8	16.6	8.9	18.7
	BIO-SCIENCES, TOTAL	921	100.0	54.0	15.0	10.7	20.3
	BASIC MED. SCIENCES	558	99.9	47.8	20.4	10.9	20.8
	OTHER BIO-SCIENCES	363	100.1	63.4	6.6	10.5	19.6
	MEDICAL SCIENCES	70	100.1	42.9	4.3	8.6	44.3
	AGRIC. SCIENCES	151	100.0	47.7	13.2	21.9	17.2
	PSYCHOLOGY	144	100.0	42.4	13.9	9.0	34.7
	SOCIAL SCIENCES	506	100.0	67.4	4.9	7.9	19.8
	MATHEMATICS	131	99.9	74.8	14.5	5.3	5.3
	PHYSICAL SCIENCES	444	100.0	37.8	39.9	9.2	13.1
	ENGINEERING	138	100.0	34.8	47.1	6.5	11.6
	ALL OTHER FIELDS	459	100.0	73.9	5.4	3.5	17.2
COHORT 45-50	TOTAL, ALL FIELDS	2916	100.1	60.4	15.3	7.9	16.5
	BIO-SCIENCES, TOTAL	746	100.0	58.7	13.9	10.5	16.9
	BASIC MED. SCIENCES	402	100.0	53.2	19.7	10.2	16.9
	OTHER BIO-SCIENCES	344	100.1	65.1	7.3	10.8	16.9
	MEDICAL SCIENCES	63	100.0	39.7	6.3	15.9	38.1
	AGRIC. SCIENCES	168	100.0	66.7	12.5	8.9	11.9
	PSYCHOLOGY	171	100.0	53.8	12.9	14.0	19.3
	SOCIAL SCIENCES	452	100.0	61.5	17.7	6.4	14.4
	MATHEMATICS	131	100.0	74.0	16.0	3.1	6.9
	PHYSICAL SCIENCES	504	100.0	39.9	36.9	7.9	15.3
	ENGINEERING	144	100.0	38.9	45.8	3.5	11.8
	ALL OTHER FIELDS	513	100.0	73.9	3.1	3.7	19.3
COHORT 55-60	TOTAL, ALL FIELDS	4136	100.1	60.5	13.8	8.0	17.8
	BIO-SCIENCES, TOTAL	1498	99.9	59.9	10.5	10.1	19.4
	BASIC MED. SCIENCES	927	100.0	57.7	13.5	9.7	19.1
	OTHER BIO-SCIENCES	571	100.1	63.6	5.8	10.7	20.0
	MEDICAL SCIENCES	121	100.0	40.5	24.0	9.1	26.4
	AGRIC. SCIENCES	217	100.0	58.5	10.1	14.3	17.1
	PSYCHOLOGY	153	100.1	45.8	9.2	15.0	30.1
	SOCIAL SCIENCES	682	100.0	77.3	4.1	5.7	12.9
	MATHEMATICS	196	100.0	65.8	19.4	5.1	9.7
	PHYSICAL SCIENCES	462	100.0	34.6	38.5	10.4	16.5
	ENGINEERING	181	100.0	34.8	46.4	3.9	14.9
	ALL OTHER FIELDS	626	100.1	76.4	2.9	1.8	19.0

INDIVIDUAL ROWS MAY NOT SUM TO 100.0% BECAUSE OF ROUNDING.

The next question after employment status concerns geographic location of these doctorate-holders. This likewise is a relatively simple question, but one that is better illumirated by taking into consideration their locations prior to their present job, specifically at the attainment of the doctorate degree and on the first job following the doctorate. As there have been important migrations within the United States over the period covered by this study, the data are presented for the total group and by decade cohorts in Table 5. In this table, the nine census regions of the United States are presented separately, and then in combinations that show the Midwest as one region, the South as one region, and the West, including the Rocky Mountain and Pacific states, as one region. This condensation permits a more graphic picture to be drawn, as shown in Figures 2, 3, and 4, in which the relative size of an area indicates its importance as a source or place of employment of the doctorate-holders.

The several geographic regions of the United States may be considered in terms of the population of doctorate-holders rather than in geographic size. In the description to follow, it is this population and its migrations to which reference is made.

The largest region of the United States, in terms of doctorate production, is the Midwest, whose doctorate-producing institutions constitute principally the "Big Ten." This section provides doctorate graduates in large numbers to all of the other sections of the country, and receives in return for postdoctoral employment relatively small numbers from all regions except New England. The latter exports more people to all regions than it receives in return for first postdoctoral jobs. The principal beneficiaries of the outflow from these two regions, and from the Middle Atlantic states, are the South and the West. The South receives more from every region, by ratios ranging from more than two-to-one to as high as five-to-one, than it returns to the other regions. The West receives more from each region except the South, than it returns to the other regions. The Middle Atlantic region is more nearly in balance, receiving more from the Midwest and New England than it returns to those regions, and exporting more to the South and the West than it receives from them. The net exchange results in fewer first postdoctoral jobs than doctorates produced for the Middle Atlantic states.

TABLE 5

Geographic Location of Doctorate-Holders at Three Career Stages, in Percentages

Career Stage	Geographic Region												
	New Eng.	Mid Atl.	E.N. Cent.	W.N. Cent.	"Mid-West"	South Atl.	E.S. Cent.	W.S. Cent.	"The South"	Mtn.	Pac.	"The West"	For.
					Total, All Cohorts								
Doctorate	13.1	22.2	28.9	11.5	40.4	8.4	1.1	2.8	12.2	1.3	10.8	12.1	--
First Job	8.6	20.1	19.0	8.6	27.6	13.4	3.6	6.2	23.2	4.2	10.6	14.8	5.5
Present Job	7.3	19.7	17.8	7.2	25.0	15.3	3.2	5.6	24.1	4.2	14.1	18.3	5.6
					1935-1940 Cohort								
Doctorate	15.4	23.4	29.3	12.8	42.1	7.9	.5	1.4	9.8	.6	8.7	9.3	--
First Job	8.8	22.4	20.4	10.1	30.5	13.2	3.4	6.2	22.8	3.8	8.1	11.9	3.5
Present Job	7.5	21.0	18.5	7.3	25.8	16.5	2.7	5.9	25.1	3.5	13.3	16.8	3.8
					1945-1950 Cohort								
Doctorate	14.2	23.3	29.3	11.7	41.0	7.3	.9	2.0	10.2	.9	10.5	11.4	--
First Job	9.3	19.5	19.4	8.9	28.3	13.2	3.7	5.6	22.5	4.4	10.9	15.3	5.1
Present Job	7.3	19.0	18.1	7.3	25.4	15.6	3.3	4.7	23.6	4.2	15.8	20.0	4.7
					1955-1960 Cohort								
Doctorate	10.8	20.5	28.3	10.4	38.7	9.4	1.6	4.4	15.3	2.1	12.6	14.7	--
First Job	8.0	19.0	17.8	7.3	25.1	13.8	3.7	6.6	24.1	4.4	12.1	16.5	7.2
Present Job	7.2	19.3	17.0	7.0	24.0	14.2	3.5	6.0	23.7	4.8	13.6	18.4	7.4

Figures 2, 3, and 4 provide graphic illustration, by decade cohorts, of the net effect of this internal migration from region of doctorate to region of first postdoctoral job, and finally to region of present job. In these diagrams, the general position of each of the

Figure 2

Relative Importance of Geographic Regions at Successive Career Stages

Cohorts 1935, 1940

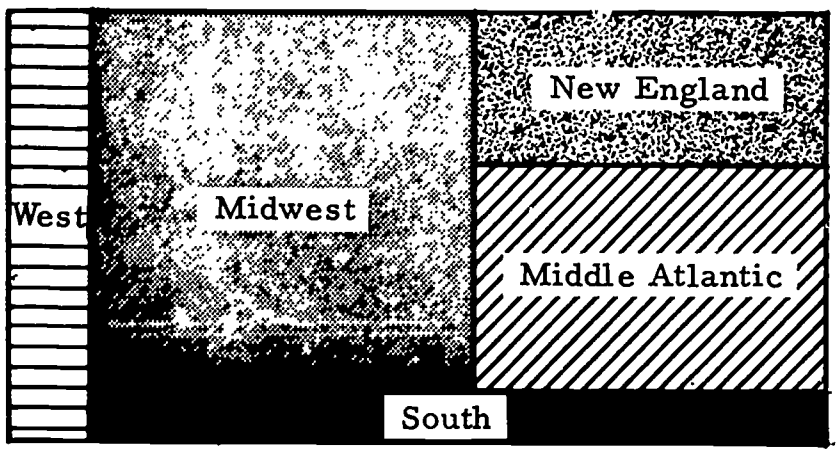
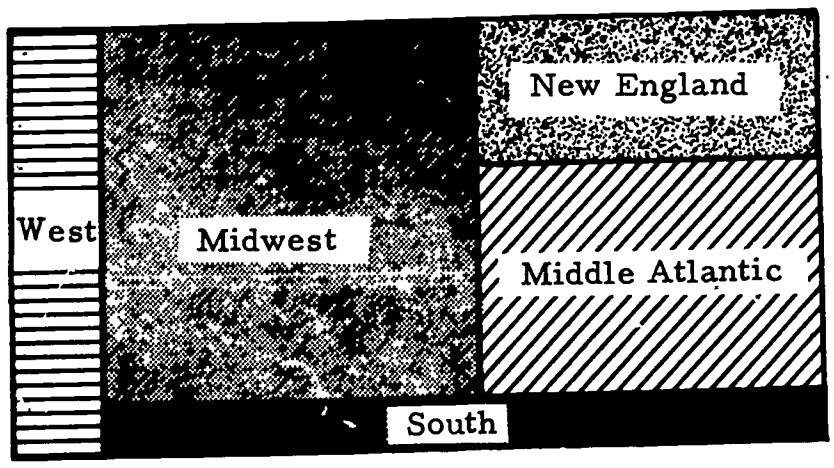


Figure 3

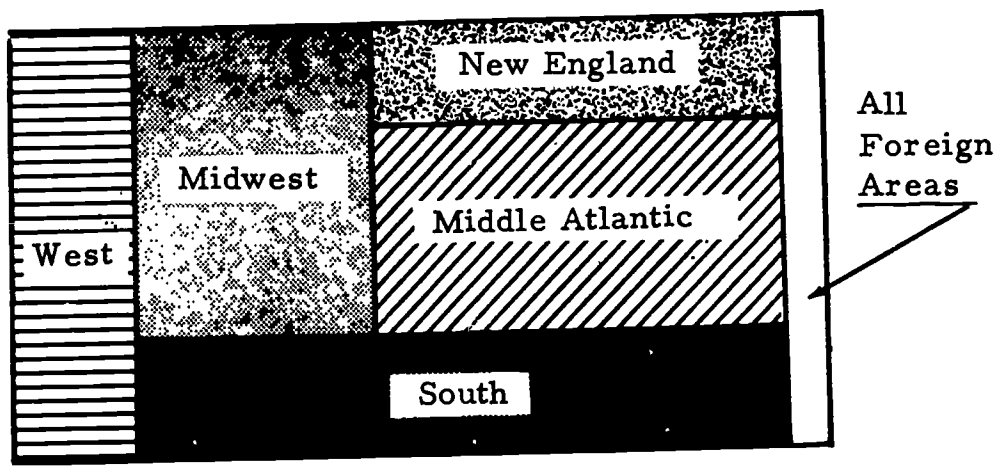
Relative Importance of Geographic Regions at Successive Career Stages

Cohorts 1945, 1950

Region of PhD



Region of First Postdoctoral Job



Region of Present Job

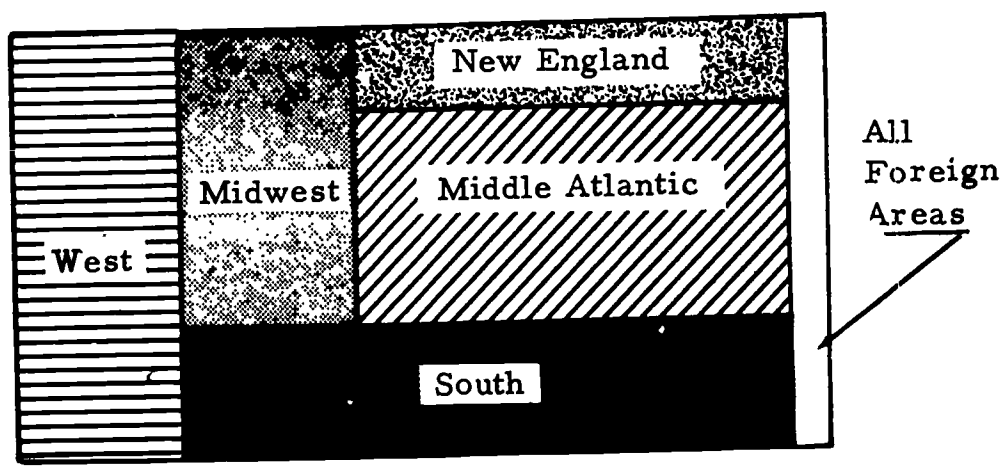
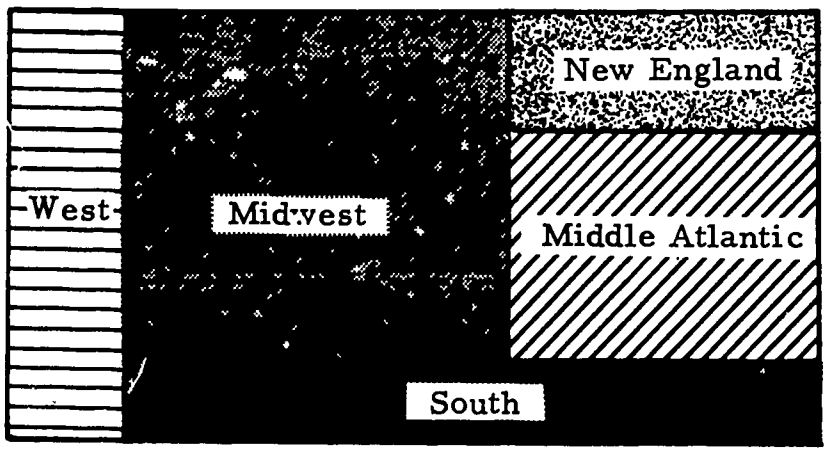


Figure 4

Relative Importance of Geographic Regions at Successive Career Stages

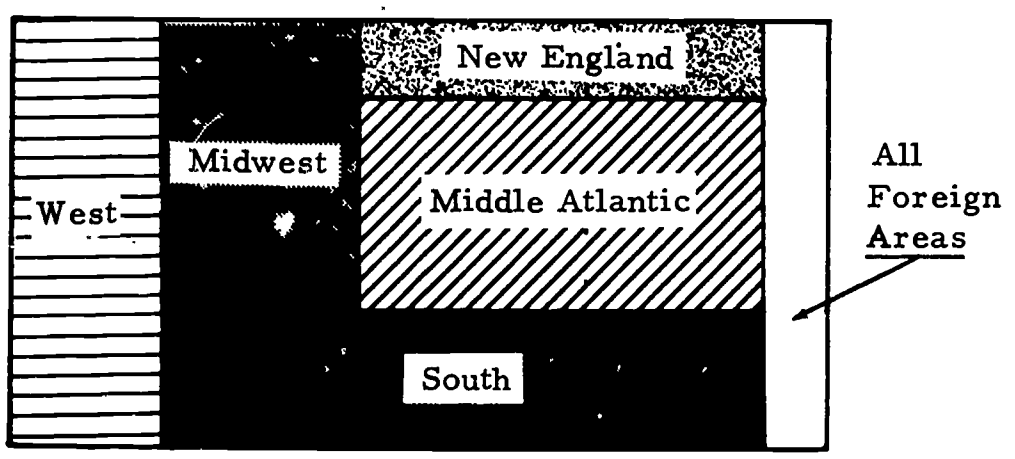
Cohorts 1955, 1960

Region of PhD



Region of First Postdoctoral Job

Region of Present Job



regions in the United States is maintained as nearly as is possible with the geographic size distorted to represent numbers of people. It will be noted that there is a sixth region shown here--foreign areas. There is a return to home countries of a number of people who came to the United States for graduate education; it is chiefly these people who are shown in the foreign-area region. There are also, of course, some United States citizens who go abroad after the doctorate, but the numbers here are small. The gross emigration to areas outside the United States is rather small, in any case, and does not vary so much from region to region as to require explicit statement here.

In spite of changes in degree from decade to decade, the general trend described above holds across three decades as shown in Figures 2, 3, and 4. Figure 1, which has been presented in the general summary, shows the combined effect for all three decades taken together. Figure 5 also combines all three decades, but diagrams instead the process by which the changes in size come about, by showing the interchange between regions. In Figure 5 the various regions are pulled apart, as in an "exploded" diagram, to permit visualization of the inter-regional flows. The regional proportions shown in Figure 5 are those at the point of doctorate graduation; when the various flows have taken place, the size changes induced would be those shown in Figure 1 for the whole period, or Figures 2, 3, and 4 for the separate decade cohorts. It might be noted here that the changes that take place after the first postdoctoral job are less dramatic than those between doctorate and first job, but continue the trend in the same direction, so that the combined flow from region of doctorate to region of present job would be even greater than that diagrammed in Figure 5.

The data upon which Figure 5 is based are shown in Table 6, which also gives the inter-regional flow at the next stage, from first postdoctoral job to present job. By reading down the diagonal of this table, it is possible to note the percentage of each region's people who do not move, but stay within the region, and to compare the total retained within any region with the number received from each other region, at each stage of career development. In the top portion of Table 6, it can be seen that although the retention rate is highest for the South, the total number retained in that region is smaller than the increment from the Midwest alone. New England has the lowest retention rate, only about a third of its doctorate graduates remaining there for their first postdoctoral jobs. This is no doubt in part due to the fact that very large numbers of people come to New England universities from all over the country, having completed their undergraduate education elsewhere. In the move from first postdoctoral to present job, New England is again low in retention rate--about 49 per cent. The West is high, with three quarters of the people who remain there or go there for their first postdoctoral jobs remaining there until their present jobs. This is of course in part a reflection of the general migration to California, which has been growing steadily by internal migration for a long time.

The variations from field to field in region of present job are shown in Table 7. The differences here are rather striking, and reflect principally the variations in metropolitan concentration. Variations from the earlier to the later cohorts are also reflected here; the explanation of these temporal variations is less clear-cut. The more detailed breakout by individual cohorts and subfields is shown in Appendix 5.

An analysis was made of the inter-regional migration, by field, from region of doctorate to first postdoctoral job and from that job to the present one. These details are not presented, however, as there seemed to be only minor variations in amount of migration and the results might be explained on a random-sampling basis only. It was clear that the total amount of migration was much greater from doctorate to first job than from first to present job. When the cross-tabulations of these moves are converted to contingency coefficients, the PhD-to-first-job coefficient is .71, and from first job to present one the coefficient is .86, with all cohorts and fields combined. When the cohorts are considered separately, the job-to-job variations were small but consistent, the amount of movement being a direct function of the length of time elapsing in which movements could take place. The PhD-to-first-job coefficients were .70, .71, and .73 for the three successive decade cohorts; the variations are probably too small to warrant interpretation.

TABLE 6

Numbers and Percentage Migration from Region to Region at Three Career Stages

Region of Origin	Total, All Regions	Region of Destination: New England	Middle Atlantic	Midwest	South	West	Foreign	Unknown
Doctorate		First Postdoctoral Job						
Total, All Regions	10017	850	1981	2718	2289	1459	541	179
	100.0	8.5	19.8	27.1	22.8	14.6	5.4	1.8
New England	1316	458	247	167	216	121	88	19
	100.0	34.8	18.8	12.7	16.4	9.2	6.7	1.4
Middle Atlantic	2220	145	1122	281	391	144	99	38
	100.0	6.5	50.5	12.6	17.6	6.5	4.5	1.7
Midwest	4045	152	397	1975	785	428	224	84
	100.0	3.8	9.8	48.8	19.4	10.6	5.5	2.0
South	1222	51	131	144	756	66	52	22
	100.0	4.2	10.7	11.8	61.9	5.4	4.3	1.8
West	1214	44	84	151	141	700	78	16
	100.0	3.6	6.9	12.4	11.6	57.7	6.4	1.3
First Postdoct. Job		Present Job						
Total, All Regions	10017	730	1968	2487	2409	1833	556	34
	100.0	7.3	19.6	24.9	24.1	18.3	5.5	.3
New England	850	414	116	112	109	75	24	--
	100.0	48.7	13.6	13.2	12.8	8.8	2.8	--
Middle Atlantic	1981	102	1309	196	214	132	27	1
	100.0	5.1	66.1	9.9	10.8	6.7	1.4	.0
Midwest	2718	89	246	1699	321	308	55	--
	100.0	3.3	9.0	62.5	11.8	11.3	2.0	--
South	2289	62	154	263	1573	185	50	2
	100.0	2.7	6.7	11.5	68.7	8.1	2.2	.1
West	1459	42	72	133	110	1071	30	1
	100.0	2.9	4.9	9.1	7.5	73.4	2.1	.1
Foreign	541	11	47	37	41	42	363	--
	100.0	2.0	8.7	6.8	7.6	7.8	67.1	--
Unknown	179	10	24	47	41	20	7	30
	100.0	5.6	13.4	26.3	22.9	11.2	3.9	16.8

Figure 5

Diagram of Inter-regional Flow from Doctorate to First Postdoctoral Job

Relative Sizes of Regions Are Shown as of Doctorate Production
Inter-regional Flows of Less than 100 Are Not Specified

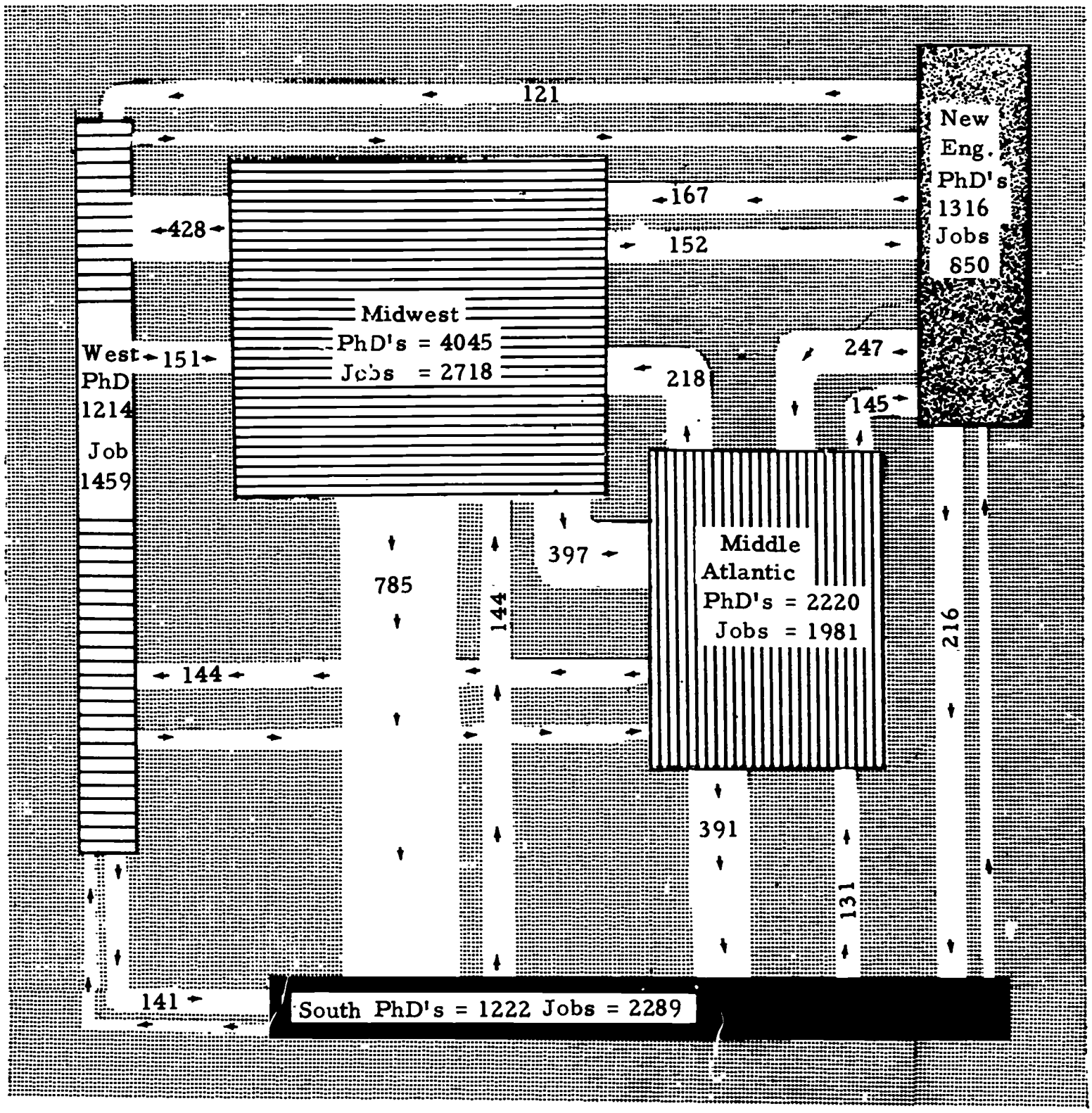


TABLE 7

GEOGRAPHIC REGION OF PRESENT JOB

PERCENT IN EACH REGION

COHORT	FIELD	TOTAL NO.	TOTAL %	FOREIGN	NEW ENG.	MID. ATL.	MID. WEST	SOUTH	WEST
ALL	TOTAL, ALL FIELDS	9982	100.0	5.6	7.3	19.7	24.9	24.1	18.4
COHORT 35-40	TOTAL, ALL FIELDS	2947	100.0	3.8	7.5	21.0	25.8	25.1	16.8
	BIO-SCIENCES, TOTAL	914	99.9	3.9	5.0	19.9	27.8	25.7	17.6
	BASIC MED. SCIENCES	556	100.0	2.9	4.0	21.0	30.2	24.5	17.4
	OTHER BIO-SCIENCES	358	100.1	5.6	6.7	18.2	24.0	27.7	17.9
	MEDICAL SCIENCES	68	100.0	4.4	4.4	22.1	25.0	23.5	20.6
	AGRIC. SCIENCES	151	100.0	9.3	4.6	11.9	22.5	33.8	17.9
	PSYCHOLOGY	144	99.9	4.9	6.9	20.1	31.9	22.2	13.9
	SOCIAL SCIENCES	501	100.0	4.6	9.8	20.2	25.9	26.3	13.2
	MATHEMATICS	131	100.0	.8	9.9	12.2	22.9	26.0	28.2
	PHYSICAL SCIENCES	443	100.0	3.6	7.0	24.2	20.3	23.9	21.0
	ENGINEERING	138	99.9	3.6	13.0	27.5	21.0	22.5	12.3
	ALL OTHER FIELDS	457	99.9	1.8	9.6	24.5	28.4	22.5	13.1
COHORT 45-50	TOTAL, ALL FIELDS	2910	100.0	4.7	7.3	19.0	25.4	23.6	20.0
	BIO-SCIENCES,TOTAL	744	100.0	5.1	5.4	19.6	25.5	23.3	21.1
	BASIC MED. SCIENCES	401	100.0	3.5	4.0	24.4	28.4	20.0	19.7
	OTHER BIO-SCIENCES	343	100.0	7.0	7.0	14.0	22.2	27.1	22.7
	MEDICAL SCIENCES	62	100.0	4.8	6.5	30.6	25.8	22.6	9.7
	AGRIC. SCIENCES	168	100.0	7.1	4.8	11.9	26.2	28.6	21.4
	PSYCHOLOGY	171	100.0	.6	9.9	15.2	31.6	23.4	19.3
	SOCIAL SCIENCES	523	100.0	5.0	7.6	16.4	26.0	28.9	16.1
	MATHEMATICS	131	100.0	3.8	10.7	19.1	32.1	12.2	22.1
	PHYSICAL SCIENCES	456	100.1	4.8	8.8	17.8	18.9	24.8	25.0
	ENGINEERING	144	100.0	4.9	10.4	25.7	22.9	14.6	21.5
	ALL OTHER FIELDS	511	99.9	4.3	6.8	22.3	26.8	21.9	17.8
COHORT 55-60	TOTAL, ALL FIELDS	4125	100.0	7.4	7.2	19.3	24.0	23.8	18.3
	BIO-SCIENCES, TOTAL	1495	100.0	8.9	6.3	18.5	24.0	25.5	16.8
	BASIC MED. SCIENCES	925	100.0	7.7	6.7	20.6	25.5	23.9	15.6
	OTHER BIO-SCIENCES	570	100.1	10.9	5.6	15.1	21.6	28.1	18.8
	MEDICAL SCIENCES	121	99.9	10.7	5.0	22.3	26.4	24.8	10.7
	AGRIC. SCIENCES	217	100.1	12.4	2.8	9.7	24.0	30.0	21.2
	PSYCHOLOGY	153	100.0	2.6	11.1	21.6	20.9	21.6	22.2
	SOCIAL SCIENCES	679	100.0	6.6	7.7	18.6	25.3	26.5	15.3
	MATHEMATICS	196	100.0	5.6	7.7	21.9	20.4	19.4	25.0
	PHYSICAL SCIENCES	460	100.0	7.6	8.5	21.1	17.6	23.5	21.7
	ENGINEERING	181	100.0	4.4	9.9	23.8	22.1	17.1	22.7
	ALL OTHER FIELDS	623	100.1	5.0	7.9	20.7	29.1	18.5	18.9

INDIVIDUAL ROWS MAY NOT SUM TO 100.0% BECAUSE OF ROUNDING.

Chapter 2

RESEARCH AND TEACHING ACTIVITIES

Distribution of Time

The discovery of new knowledge and the transmission of knowledge to the younger generation--research and teaching--are usually regarded as the primary functions of those who hold the doctorate degree. In the study here reported, each doctorate-holder was asked to estimate the percentage of his time devoted to these two activities, and to administration, and finally, to all other types of activities combined. The analysis of the data of these time distributions leads into many ramifications, but the best overall view of the on-the-job functions of these doctorate-holders may be obtained from the combined data for all fields, and for scientists and scholars in all manner of employment situations, but separated by cohorts. It is found that the distribution of time changes radically with the development of a career, and that with the passage of time the functions performed by each new crop of PhD's change gradually. These changes are depicted graphically in Figure 6, and tabulated numerically in Table 8. In Figure 6, the growth of a career is depicted by means of an analogy to the growth rings on a tree, each successive five-year period being shown as an additional ring. Each ring is divided into the time devoted to teaching, to research, to administration, and to all other functions. The earliest cohort, the graduates of 1935, has the most rings, of course, whereas the latest, 1960, shows only the basic stem--the situation with respect to the first postdoctoral job. In Figure 6, the "present job" rings have been omitted, as they were but slightly different from those for the 1960 job. The full data regarding "present job"--i.e. the job held as of December 1962-- are shown in Table 8, however.

Several trends are worthy of note in Figure 6 and Table 8. The most spectacular is the rapid growth of administrative responsibility, chiefly at the expense of research time. Twenty-five years after the doctorate, administration occupies the greatest single sector of time of the doctorate-holders. Another trend, somewhat more subtle but quite pervasive, is the greater proportion of time each new generation devotes to research, beginning with the first postdoctoral job. And this is primarily at the expense of teaching. The "all other functions" category is relatively stable, and minor in importance as compared to the three primary functions. A third observation, chiefly of historical interest, is the bulge in time devoted to teaching for the 1950 period. This is noteworthy in each of the first three cohorts, and probably represents the extra teaching load that coincided with the "GI" period following World War II. Whether this had a permanent effect on the 1945 graduation cohort is a matter of speculation. But it is clearly observable that this group has retained a larger proportion of time in the teaching category than did either earlier or later cohorts.

When people are separated into groups according to the percentage of time devoted to a particular function--for example teaching--and an examination is made of the time devoted to other functions, it is seen that the overall time-division data discussed above give only a first-approximation picture. To a greater or lesser extent, people tend to specialize and become predominantly teachers, or researchers, or administrators, etc. This process may be viewed by comparing time distribution on the first postdoctoral job with time distribution on the present job. It may also be viewed by correlating, on the present job, the time spent on teaching with that spent on research and that spent on administration. These processes are explored in the next series of tables.

Table 9 shows, in the top half, the relation of the proportion of time spent in teaching to that spent in research and administration. All fields have been combined, but the decade cohorts are shown separately because of the changing job functions observed as careers mature. The rows

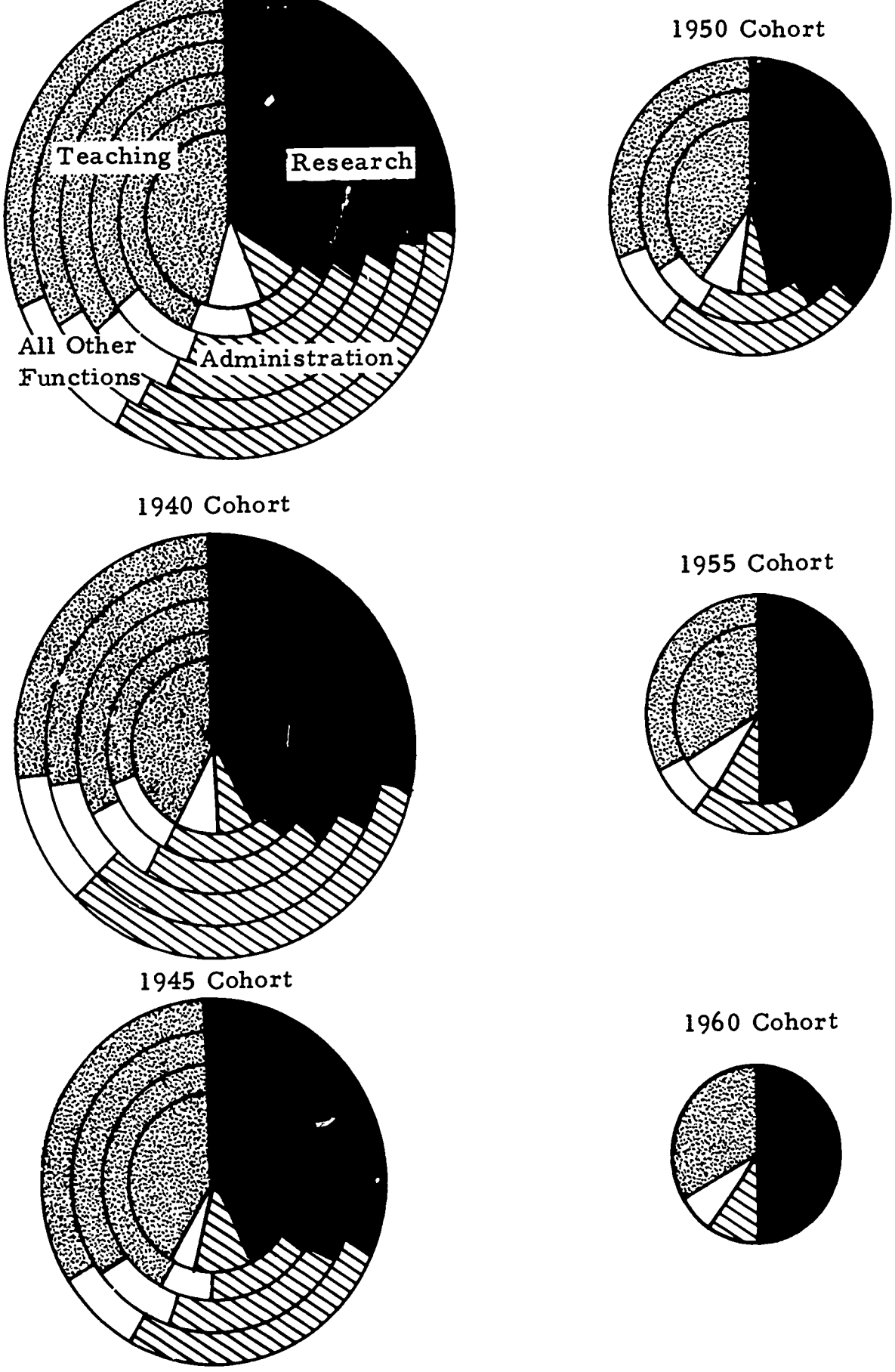
TABLE 8

Percentage of Time Devoted to Research, Administration, Teaching, and All Other Functions, by Cohort and by Time Period

Work Period	1935	1940	1945	1950	1955	1960
			Cohort			
			Percentage of Time Devoted to Teaching			
1935	46.8					
1940	44.4	42.4				
1945	34.8	30.4	40.9			
1950	35.6	32.9	41.7	40.2		
1955	33.4	28.4	35.8	34.3	34.5	
1960	31.5	27.8	33.6	30.9	33.4	33.3
1962	31.4	27.1	33.5	28.4	30.8	33.1
			Percentage of Time Devoted to Research			
1935	35.8					
1940	33.4	41.6				
1945	31.7	39.5	42.3			
1950	28.8	36.3	35.5	45.4		
1955	27.7	32.7	34.2	41.3	48.5	
1960	26.5	28.2	31.8	36.7	43.4	48.5
1962	26.3	28.3	30.4	33.4	41.5	46.2
			Percentage of Time Devoted to Administration			
1935	8.1					
1940	13.7	7.5				
1945	23.3	17.8	11.1			
1950	27.5	22.1	15.6	7.3		
1955	30.0	29.5	21.6	16.1	8.5	
1960	32.2	34.0	26.5	23.7	15.4	10.1
1962	31.9	34.8	27.1	28.7	19.8	12.5
			Percentage of Time Devoted to Other Functions			
1935	9.3					
1940	8.5	8.5				
1945	10.2	12.3	5.7			
1950	8.1	8.6	7.2	7.1		
1955	8.9	9.4	8.4	8.3	8.6	
1960	9.9	10.0	8.1	8.7	7.9	8.1
1962	10.4	9.9	9.1	9.5	7.9	8.3

Figure 6

Changing Pattern of On-the-Job Functions with Career Maturation:
Percentage Distribution of Time at Five-Year Intervals Following Graduation



in the top half of Table 9 show the percentage of all doctorate-holders (within decade cohorts) who spent no time in teaching; some time (10 to 29 per cent); a moderate amount of time (30 to 49 per cent); much time (50 to 89 per cent); or practically full time (90 to 100 per cent). For each of these groups, the distribution of time in research is shown in the same five categories on the left side of the page; time spent in administration is shown on the right-hand side of the page. The entries in each cell of this table are the percentages of the total number of cases in each row, rounded to the nearest whole percentage. Because of rounding, percentages may not sum to 100 per cent. In the bottom portion of Table 9, the same people are sorted in rows according to the proportions of their time spent in research, and the total number in each row is distributed according to time spent in teaching (left half) and administration (right half of the table).

With respect to teaching, there are only minor differences among the cohorts in the proportions of the total group spending varying percentages of their time teaching. Roughly one third do no teaching; about one sixth do some, 10 to 29 per cent, teaching; a slightly larger proportion do a moderate amount, 30 to 49 per cent, of teaching; about one quarter of each group do much, 50 to 89 per cent, teaching; about 1 in 14 of each cohort spends practically full time teaching.

The proportion of all cases devoting no time to research is twice as large in the oldest cohort as in the youngest; the proportion devoting full time to research is less than half as large. The proportion devoting a moderate amount of time to research is practically the same for all three cohorts. With respect to administration, the cohort differences are less at the "no administration" end of the scale, but much greater at the full time end. About one third of the oldest cohort devote no time to administration, as compared to half of the youngest cohort. But in the oldest group, the percentage spending practically full time in administration is four times as large as in the youngest cohort.

Table 9 may be examined in more detail, for example, by studying the distribution of time of the "no teaching" group. About half of the oldest cohort who do no teaching also do no research; most of this group are spending nearly full time in administration. With the youngest cohort, those who do no teaching are predominantly spending their time in research--half of them on a practically full time basis. Turning to the bottom portion of Table 9 and the people in the oldest cohort who are sorted into the "no research" group, we see that half of them also do no teaching. Their time is obviously spent chiefly in administration, which occupies the full time of over 40 per cent of this group. The situation is much the same with the middle cohort, although the functions here have not become so highly specialized. In the youngest cohort, about one third do neither research nor teaching; administration is also the major function of this smaller group. Other interrelations of teaching, research, and administration, for those spending varying amounts of time in the teaching and research functions, may be similarly gleaned, although in a somewhat less clear-cut fashion, by examination of the other lines of Table 9.

The process by which these doctorate-holders arrived at their present time distributions may be explored in somewhat more detail by comparing the time distribution on the first postdoctoral job with that on the present job. The first aspect to examine concerns persistence in the same function. This is shown in Tables 10 and 11, which depict persistence in teaching and in research, respectively, for the basic medical sciences and other bio-sciences.

In Table 10, the distribution of time spent in teaching on the first job is shown in the rows; time spent in teaching on the present job is shown in the columns. The same arrangement is used with respect to research in Table 11. In both tables, the diagonal entries have been underlined to emphasize the percentage of doctorate-holders who do not change categories--who devote the same proportion of their time to the same function in both periods. It is noteworthy that these diagonal entries are in general the largest in the table--the number who persist in a given pattern far outnumber those who shift, except for the group that initially spends full time teaching. In comparing Tables 10 and 11, it will be noted that persistence is highest in the teaching function for those who do the least teaching--they persist in the light-teaching-load group once they enter it. With respect to research, persistence in the same functional category is higher for those who do a moderate or large amount of research. These are broader categories, allowing considerable room for change. Yet the process underlying these shifts is significant: the drive toward research and away from teaching; and (not shown directly here) the growth of administrative duties, which take time away principally from research.

TABLE 9

Interrelations of Teaching, Research, and Administration on Present Job, by Decade Cohorts

Reference Category	Cohort	Total Cases	Percentage of Cases in Each Category of Research Activity: None	Some[a]	Mod.[a]	Much[a]	Full[a]	Percentage of Cases in Each Category of Administrative Activity: None	Some[a]	Mod.[a]	Much[a]	Full[a]
Teaching Activity												
Total Group	35-40	2616	34	22	19	17	8	33	21	14	18	15
	45-50	2686	25	24	20	22	9	35	26	13	16	11
	55-60	3888	16	20	18	27	19	50	29	10	8	4
None	35-40	1010	48	11	7	15	19	27	9	7	21	37
	45-50	886	36	15	7	19	23	29	13	8	21	30
	55-60	1265	16	8	6	20	50	51	17	9	13	9
Some[a]	35-40	397	14	36	17	25	7	19	22	15	39	5
	45-50	457	15	27	13	39	6	21	31	11	32	5
	55-60	612	10	19	9	47	16	36	35	10	16	4
Mod.[a]	35-40	420	11	20	47	23		17	28	40	15	
	45-50	513	7	18	45	31		22	33	32	12	
	55-60	685	5	12	34	48		36	38	21	6	
Much[a]	35-40	584	24	35	28	13		44	38	12	6	
	45-50	644	15	43	28	14		46	42	9	4	
	55-60	1044	13	38	34	17		53	38	6	3	
Full[a]	35-40	205	80	20				87	13			
	45-50	186	85	15				92	8			
	55-60	282	71	29				91	9			
Research Activity												
Total Group	35-40	2616	39	15	16	22	8	33	21	14	18	15
	45-50	2686	33	17	19	24	7	35	26	13	16	11
	55-60	3888	33	16	18	27	7	50	29	10	8	4
None	35-40	883	55	6	5	16	19	29	10	6	14	41
	45-50	680	47	10	5	14	23	37	9	5	15	35
	55-60	632	32	10	6	21	32	46	13	8	15	19
Some[a]	35-40	583	19	25	14	35	7	20	26	14	33	6
	45-50	649	20	19	14	43	4	19	31	15	28	7
	55-60	774	13	15	11	51	11	32	37	12	16	3
Mod[a]	35-40	501	14	14	40	33		26	26	34	14	
	45-50	534	12	11	43	34		24	35	29	13	
	55-60	714	11	8	33	49		36	38	19	7	
Much[a]	35-40	432	36	23	22	18		40	32	13	16	
	45-50	593	29	30	27	15		41	38	9	12	
	55-60	1035	24	28	32	17		49	36	11	5	
Full[a]	35-40	217	87	13				83	17			
	45-50	230	88	12				87	13			
	55-60	733	87	13				85	15			

[a] Definitions of Categories of Time Spent in Each Function:
Some = 10%-29% Moderate = 30%-49% Much = 50%-89% Full = 90%-100%

TABLE 10

Persistence in Teaching from First Postdoctoral Job to Present Job

BASIC MEDICAL SCIENCES

Percentage of Time Devoted to Teaching on Present Job

Percentage of Time Devoted to Teaching on First Postdoctoral Job		Total	None	10-29%	30-49%	50-89%	90-100%	Unknown
Total	N	1888	705	387	328	276	48	144
	%	100.0	37.3	20.5	17.4	14.6	2.5	7.6
None	N	772	499	113	95	53	11	11
	%	100.0	64.6	14.6	11.0	6.9	1.4	1.4
10-29%	N	262	49	160	36	8	4	5
	%	100.0	18.7	61.1	13.7	3.1	1.5	1.9
30-49%	N	172	34	19	96	12	2	9
	%	100.0	19.8	11.0	55.8	7.0	1.2	5.2
50-89%	N	338	53	47	75	146	6	11
	%	100.0	15.7	13.9	22.2	43.2	1.8	3.3
90-100%	N	135	29	16	20	40	23	7
	%	100.0	21.5	11.9	14.8	29.6	17.0	5.2
Unknown	N	209	41	32	16	17	2	101
	%	100.0	19.6	15.3	7.7	8.1	1.0	48.3

OTHER BIO-SCIENCES

Percentage of Time Devoted to Teaching on Present Job

Percentage of Time Devoted to Teaching on First Postdoctoral Job		Total	None	10-29%	30-49%	50-89%	90-100%	Unknown
Total	N	1278	409	208	209	291	98	63
	%	100.0	32.0	16.3	16.4	22.8	7.7	4.9
None	N	485	289	71	42	56	21	6
	%	100.0	59.6	14.6	8.7	11.5	4.3	1.2
10-29%	N	98	15	57	16	8		2
	%	100.0	15.3	58.2	16.3	8.2		2.0
30-49%	N	100	7	19	63	7	2	2
	%	100.0	7.0	19.0	63.0	7.0	2.0	2.0
50-89%	N	289	41	39	57	137	11	4
	%	100.0	14.2	13.5	19.7	47.4	3.8	1.4
90-100%	N	195	34	11	16	69	61	4
	%	100.0	17.4	5.6	8.2	35.4	31.3	2.1
Unknown	N	111	23	11	15	14	3	45
	%	100.0	20.7	9.9	13.5	12.6	2.7	40.5

TABLE 11

Persistence in Research from First Postdoctoral Job to Present Job

BASIC MEDICAL SCIENCES

Percentage of Time Devoted to Research on Present Job

Percentage of Time Devoted to Research on First Postdoctoral Job		Total	None	10-29%	30-49%	50-89%	90-100%	Unknown
Total	N	1888	259	220	305	572	388	144
	%	100.0	13.7	11.7	16.2	30.3	20.6	7.6
None	N	184	83	30	24	25	15	7
	%	100.0	45.1	16.3	13.0	13.6	8.2	3.8
10-29%	N	147	19	61	31	21	7	8
	%	100.0	12.9	41.5	21.1	14.3	4.8	5.4
30-49%	N	179	25	27	84	25	11	7
	%	100.0	14.0	15.1	46.9	14.0	6.1	3.9
50-89%	N	477	37	39	80	266	42	13
	%	100.0	7.8	8.2	16.8	55.8	8.8	2.7
90-100%	N	692	83	40	72	202	287	8
	%	100.0	12.0	5.8	10.4	29.2	41.5	1.2
Unknown	N	209	12	23	14	33	26	101
	%	100.0	5.7	11.0	6.7	15.8	12.4	48.3

OTHER BIO-SCIENCES

Percentage of Time Devoted to Research on Present Job

Percentage of Time Devoted to Research on First Postdoctoral Job		Total	None	10-29%	30-49%	50-89%	90-100%	Unknown
Total	N	1278	226	210	226	314	239	63
	%	100.0	17.7	16.4	17.7	24.6	18.7	4.9
None	N	215	107	30	31	23	21	3
	%	100.0	49.8	14.0	14.4	10.7	9.8	1.4
10-29%	N	176	30	80	34	22	8	2
	%	100.0	17.0	45.5	19.3	12.5	4.5	1.1
30-49%	N	138	11	19	83	22		3
	%	100.0	8.0	13.8	60.1	15.9		2.2
50-89%	N	229	19	31	29	124	22	4
	%	100.0	8.3	13.5	12.7	54.1	9.6	1.7
90-100%	N	409	53	37	35	106	172	6
	%	100.0	13.0	9.0	8.6	25.9	42.1	1.5
Unknown	N	111	6	13	14	17	16	45
	%	100.0	5.4	11.7	12.6	15.3	14.4	40.5

The shift from one function to another is shown statistically in Appendix 6, Tables A, B, C, and D. In these tables (omitted here so as not to burden the text) functions on the present job are cross-tabulated with teaching and with research activity on the first post-doctoral job. The general tendency bears out that shown by Tables 10 and 11. A general tendency to remain in the functional role of teacher or researcher results in tabulations in which those who have light teaching loads on the first job have heavy research responsibilities on the present job, and vice versa. The degree of relationship can be roughly appreciated by the fact that contingency coefficients for these cross-tabulations ranged from .53 to .59. Perhaps of more value than the statistical coefficients, however, is examination of the tables themselves.

Support for Research

One of the more important determiners of the division of time among various functions concerns the support provided, particularly for research. It seemed desirable to explore this question in some detail, with reference to the sources of research support. For many years, the federal government has been supporting scientific research on an increasing scale. In the bio-sciences, the support provided by the Public Health Service has been predominant. It seemed desirable, therefore, to explore the extent to which researchers in the various fields were being supported by funds from the Public Health Service (PHS) and other agencies, both public and private. For this purpose, the group of PhD's who were devoting 50 per cent or more of their time to research were sorted out, and their sources of support analyzed. The results are shown in Table 12.

The total number of researchers in the present sample (defined as those devoting 50 per cent or more of their time to research) is 3240--just about one third of the total group. The proportion is considerably larger in the most recent cohort, as can be seen in Table 12. In this table, the whole research group is divided into two portions: those receiving some or all of their research support from the Public Health Service, and those receiving no support from this source. The former group represents about one fourth of all researchers in all fields combined, increasing from 21.5 per cent in the earliest cohort to 27.9 per cent in the most recent cohort. In the bio-science fields the percentages are much higher, ranging from 36.6 per cent in the earliest cohort to 45.5 per cent in the latest. In the medical sciences the number of researchers is small, but the percentage with PHS support is even higher, particularly in the older cohorts. Of those researchers in the bio-sciences who do receive support from PHS, a large percentage derive all their support from this source, this proportion being almost one third in the oldest cohort and almost half in the youngest group.

Of those not receiving PHS funds for research, a considerable proportion checked no source of support. This may have been a simple oversight. On the other hand, it may reflect varying interpretations of the question. One interpretation, which would seem reasonable to a considerable proportion of people in the humanities fields and some of the social sciences, would be that no support other than a salary and access to a library would be required. It may be noted that in these fields the percentage indicating no source of support is considerably higher than in other fields. Another interpretation might be that one was simply hired to do a research job in a large laboratory, and the question of "support" would not come up in these terms. This interpretation would seem most reasonable in a large developmental laboratory, and it may be noted that in the youngest cohort two thirds of those indicating no research support source are in the engineering field.

Within the physical-science and engineering fields, a rather heavy proportion indicate support only by private sources, and another large proportion indicate support only by public, but not PHS, sources. The proportion in these fields who are receiving support from both public non-PHS sources and private sources is increasing somewhat. In these fields, of course, there are many chemical, electronic, and aerospace firms that employ substantial numbers of research workers; these firms would employ relatively few in the bio-sciences, although the pharmaceutical industry is an exception. For the person interested in studying patterns of research support, a number of other interesting details are to be found in Table 12. Still further breakouts, by five-year cohorts and finer fields, are to be found in Appendix 7.

TABLE 12

CATEGORIES OF RESEARCH SUPPORT ON PRESENT JOP

COHORT	FIELD	TOTAL NO.	TOTAL %	PERCENT OF RESEARCHERS IN EACH SUPPORT CATEGORY: RESEARCH PHS-SUPPORTED, OTHER SUPPORT NONE	RESEARCH PHS-SUPPORTED, OTHER SUPPORT ONLY GOVT	RESEARCH PHS-SUPPORTED, OTHER SUPPORT ONLY PRIV	RESEARCH PHS-SUPPORTED, OTHER SUPPORT BOTH	NOT SUPPORTED BY PHS, OTHER SUPPORT NONE	NOT SUPPORTED BY PHS, OTHER SUPPORT ONLY GOVT	NOT SUPPORTED BY PHS, OTHER SUPPORT ONLY PRIV	NOT SUPPORTED BY PHS, OTHER SUPPORT BOTH
ALL	TOTAL, ALL FIELDS	3240	99.9	10.4	2.6	8.8	4.0	8.4	18.7	32.7	14.3
COHORT 35-40	TOTAL, ALL FIELDS	649	99.9	6.5	1.5	9.2	4.3	10.8	21.1	35.1	11.4
	BIO-SCIENCES, TOTAL	284	100.0	11.3	2.8	16.2	6.3	5.6	15.5	31.0	11.3
	BASIC MED. SCIENCES	177	100.0	13.6	3.4	18.1	7.9	7.3	11.9	30.5	7.3
	OTHER BIO-SCIENCES	107	100.1	7.5	1.9	13.1	3.7	2.8	21.5	31.8	17.8
	MEDICAL SCIENCES	7	100.1	14.3		28.6	14.3	14.3	28.6		
	AGRIC. SCIENCES	46	99.9			2.2	4.3	6.5	34.8	30.4	21.7
	PSYCHOLOGY	20	100.0	5.0		20.0	10.0	15.0	15.0	25.0	10.0
	SOCIAL SCIENCES	87	99.8	4.6		3.4		24.1	17.2	42.5	8.0
	MATHEMATICS	21	99.9						57.1	23.8	19.0
	PHYSICAL SCIENCES	112	100.1	1.8	.9	1.8	3.6	5.4	31.3	44.6	10.7
	ENGINEERING	25	100.0				4.0	12.0	16.0	44.0	24.0
	ALL OTHER FIELDS	47	100.1	4.3	2.1	4.3		36.2	12.8	38.3	2.1
COHORT 45-50	TOTAL, ALL FIELDS	823	100.1	8.7	2.2	7.4	6.6	6.0	19.6	32.8	16.8
	BIO-SCIENCES, TOTAL	327	100.1	17.7	3.4	13.5	10.1	2.8	13.1	25.7	13.8
	BASIC MED. SCIENCES	186	100.1	23.7	3.8	18.3	12.4	2.7	10.2	24.2	4.8
	OTHER BIO-SCIENCES	141	99.9	9.9	2.8	7.1	7.1	2.8	17.0	27.7	25.5
	MEDICAL SCIENCES	19	100.3	21.1	5.3	21.1	21.1		5.3	21.1	5.3
	AGRIC. SCIENCES	81	100.1			2.5	7.4	6.2	11.1	38.3	34.6
	PSYCHOLOGY	36	99.9	13.9	2.8	16.7	8.3	8.3	19.4	11.1	19.4
	SOCIAL SCIENCES	82	99.8	2.4	1.2	2.4	2.4	13.4	12.2	52.4	13.4
	MATHEMATICS	41	100.0				4.9	2.4	36.6	17.1	39.0
	PHYSICAL SCIENCES	161	100.1	1.9	1.9	1.9	1.2	1.9	40.4	34.8	16.1
	ENGINEERING	28	100.0				3.6	10.7	25.0	53.6	7.1
	ALL OTHER FIELDS	48	100.1		2.1		2.1	29.2	8.3	54.2	4.2
COHORT 55-60	TOTAL, ALL FIELDS	1768	99.9	12.6	3.2	9.3	2.8	8.7	17.4	31.7	14.2
	BIO-SCIENCES, TOTAL	902	99.8	21.2	5.5	15.7	3.4	3.3	15.3	25.9	9.5
	BASIC MED. SCIENCES	597	100.1	25.8	6.4	19.8	3.0	2.8	12.4	24.0	5.9
	OTHER BIO-SCIENCES	305	100.0	12.1	3.9	7.9	4.3	4.3	21.0	29.8	16.7
	MEDICAL SCIENCES	36	100.0	19.4		11.1	2.8	5.6	11.1	44.4	5.6
	AGRIC. SCIENCES	131	99.9	2.3		3.8	3.8	1.5	16.8	41.2	30.5
	PSYCHOLOGY	43	100.1	9.3	11.6	14.0	7.0		25.6	23.3	9.3
	SOCIAL SCIENCES	167	100.1	4.8	.6	3.6	1.8	15.0	10.8	46.7	16.8
	MATHEMATICS	82	99.9	3.7				8.5	26.8	32.9	28.0
	PHYSICAL SCIENCES	257	100.1	1.6		.4	1.2	3.5	30.4	41.2	21.8
	ENGINEERING	83	100.0					66.3	10.8	14.5	8.4
	ALL OTHER FIELDS	67	100.1	4.5	1.5	1.5	4.5	35.8	9.0	35.8	7.5

INDIVIDUAL ROWS MAY NOT SUM TO 100.0% BECAUSE OF ROUNDING.

Chapter 3

SOURCES OF SUPPORT FOR EDUCATION

Support for graduate education has changed considerably over the past generation; the present study furnishes some quantitative information regarding the nature and extent of these changes. Each respondent was asked to indicate the percentage of his total support for graduate education that came fr each of several sources: his university, government sources (with the Veterans Administration (VA) listed separately because of its special position in the postwar period), a foundation or health agency, his own earnings, spouse's earnings, parents' contributions, savings, borrowings, and all other sources combined. All of these sources are separately tabulated, by five-year cohorts and finer-field break-outs, in Appendix 8. Figure 7 was drawn from the bio-sciences data of Appendix 8. The fields, cohorts, and sources have been condensed, however, in Table 13 to make the general story easier to follow. The discussion below is based upon both Table 13 and Figure 7.

The striking feature of Figure 7 is the massive impact of the Veterans Administration support on the 1950 cohort, and its tapering off in subsequent cohorts. Actual support was, of course, concentrated in the immediate post-war period, but many of the people so supported did not graduate immediately, so that the graduation cohorts lag behind the time at which this support was maximally effective. Simultaneously with the VA support, relative support from universities and own earnings declined precipitously; other changes were somewhat more gradual, but nevertheless profound. The change in the relative contributions from these several sources is perhaps best viewed against the background of the overall support for all cohorts combined, in all fields, as shown in the top line of Table 13. Here it is seen that overall, fellowships, scholarships, assistantships, and traineeships from university sources accounted for slightly over one third of the total graduate support. Somewhat over one fourth was accounted for by the individuals' own resources (earnings, borrowings, savings), and one seventh by family resources.

It is noteworthy that in the most recent cohorts the relative support from university sources has increased somewhat from its low point at the time of the VA maximum. In view of the lag mentioned above, this increase may be greater in recent years than shows on the chart or in the tables. There is, however, a possible confusion of sources here, with the proliferation of government programs. That is, some money reported as coming from universities may be traineeships actually funded by the federal government, but not so perceived or so remembered by the recipient. The massive growth in federal support is striking both in Table 13, which covers all fields, and in Figure 7, which reflects the bio-sciences only. In the bio-sciences, the support provided by government agencies other than the VA more than triples from decade to decade, rising from 1.2 per cent in the 1935-40 cohort to 4.4 per cent in the 1945-50 cohort and to 13.7 per cent in the 1955-60 cohort. And again it should be noted that these increases probably understate the case, as they are periods of graduation, not periods of support. In psychology, the growth of support from non-VA governmental sources is even more striking, moving up from one tenth of 1 per cent in the first decade to 10.6 per cent in the postwar era and on to 16.3 per cent in the latest decade. A large part of the immediate postwar support in this field was from the Public Health Service for clinical psychology, a field in which personnel shortages were made dramatically evident by the impact of combat conditions. In the later periods, support for the non-clinical fields in psychology has come also from the National Science Foundation.

Tying with psychology at 16.3 per cent in the most recent decade is the field of the physical sciences, in which support from the National Science Foundation has been highly important. The Foundation only began operations in 1950; its impact was therefore not felt at all until the 1955 cohort, and undoubtedly was greatly enlarged in the 1960 cohort. A field that does not follow the trend of the other sciences is agriculture; it received, in the

TABLE 13

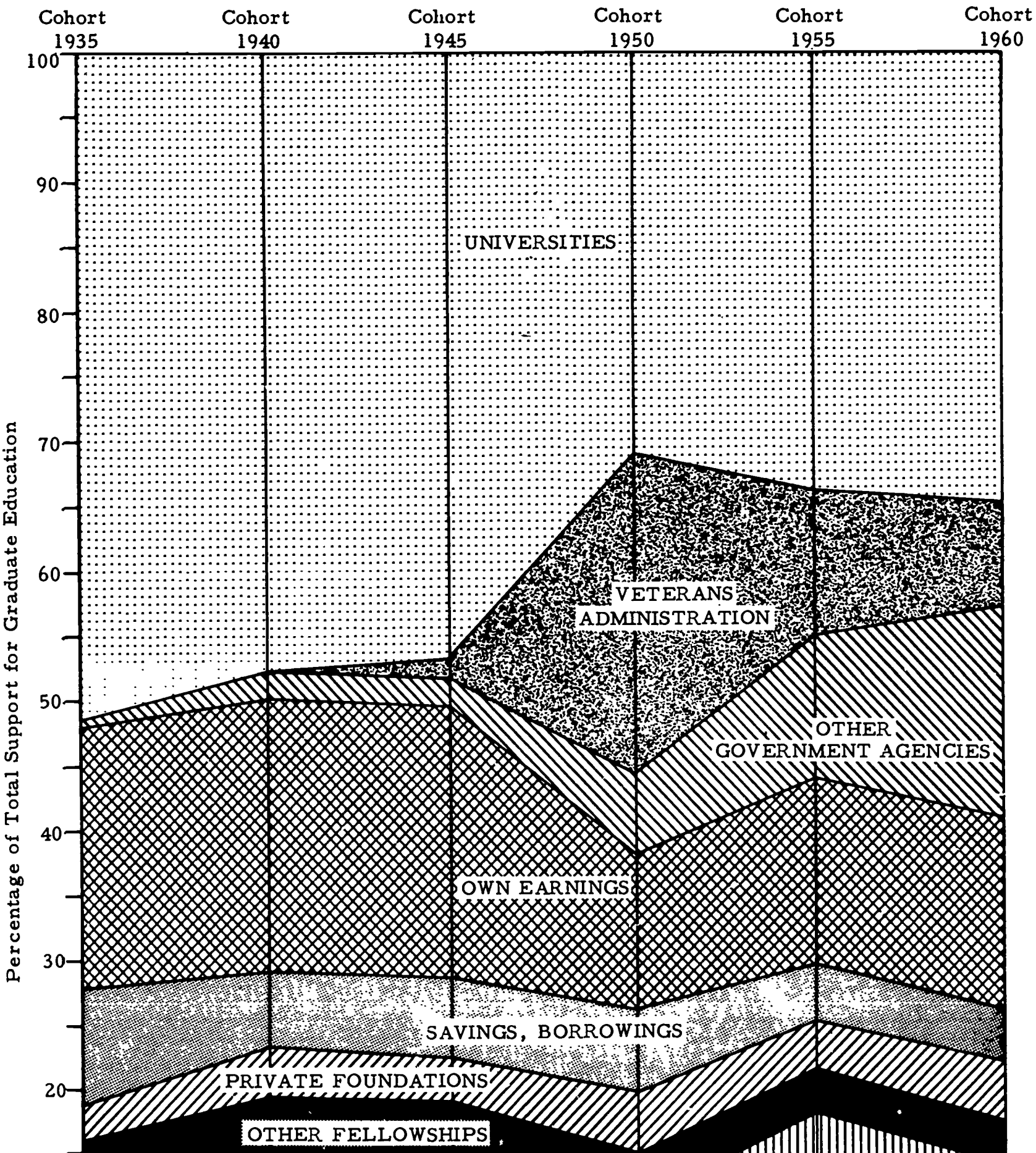
SOURCES OF SUPPORT FOR GRADUATE EDUCATION

COHORT	FIELD	TOTAL NO.	TOTAL %	PERCENT OF TOTAL SUPPORT FROM EACH SOURCE: UNIV	V.A.	OTHER GOVT	MISC PRIV	FAM-ILY	OWN, MISC	OTHER
ALL	TOTAL, ALL FIELDS	9576	100.0	34.8	8.7	5.5	6.1	14.4	28.8	1.7
COHORT 35-40	TOTAL, ALL FIELDS	2815	100.0	41.6	.1	.7	5.1	15.2	35.5	1.8
	BIO-SCIENCES, TOTAL	885	100.1	49.3	.2	1.2	7.2	13.3	27.7	1.2
	BASIC MED. SCIENCES	532	100.1	48.0	.2	1.1	9.5	13.9	26.5	.9
	OTHER BIO-SCIENCES	353	99.9	51.2	.1	1.4	3.8	12.3	29.5	1.6
	MEDICAL SCIENCES	62	100.1	22.4		.2	17.1	22.1	38.1	.2
	AGRIC. SCIENCES	144	99.9	48.5		3.1	7.0	7.6	33.5	.2
	PSYCHOLOGY	137	100.0	39.8		.1	3.6	17.4	36.8	2.3
	SOCIAL SCIENCES	473	100.0	32.8	.1	.2	3.8	17.7	42.3	3.1
	MATHEMATICS	127	100.6	52.6		.2	1.4	12.2	30.9	3.3
	PHYSICAL SCIENCES	437	100.0	49.0	.1	.4	3.4	17.6	28.8	.7
	ENGINEERING	132	100.1	37.2		1.0	8.0	13.8	40.1	
	ALL OTHER FIELDS	418	100.0	26.9	.1	.3	2.4	15.9	51.1	3.3
COHORT 45-50	TOTAL, ALL FIELDS	2827	100.0	32.8	13.6	4.2	6.0	12.2	29.2	2.0
	BIO-SCIENCES, TOTAL	723	100.0	37.8	14.7	4.4	8.5	11.4	22.1	1.1
	BASIC MED. SCIENCES	385	100.0	34.6	16.0	5.8	10.9	10.5	21.4	.8
	OTHER BIO-SCIENCES	338	100.0	41.4	13.2	2.8	5.7	12.5	23.0	1.4
	MEDICAL SCIENCES	59	99.9	26.1	4.4	12.7	11.7	16.6	28.1	.3
	AGRIC. SCIENCES	167	100.0	40.0	15.9	2.9	10.8	8.7	20.2	1.5
	PSYCHOLOGY	165	100.0	29.3	15.8	10.6	1.3	16.6	24.7	1.7
	SOCIAL SCIENCES	506	100.1	29.2	14.5	.9	4.5	14.1	34.8	2.1
	MATHEMATICS	129	100.0	40.4	13.1	5.0	1.5	11.3	26.8	1.9
	PHYSICAL SCIENCES	449	100.0	38.5	13.3	6.9	5.4	11.4	23.7	.8
	ENGINEERING	139	99.9	33.0	12.4	8.6	9.8	7.6	28.1	.4
	ALL OTHER FIELDS	490	100.0	21.1	11.4	.7	4.0	13.0	44.3	5.5
COHORT 55-60	TOTAL, ALL FIELDS	3934	100.0	31.3	11.4	9.8	6.8	15.5	23.8	1.4
	BIO-SCIENCES, TOTAL	1458	100.1	34.8	9.1	13.7	7.7	15.1	18.7	1.0
	BASIC MED. SCIENCES	901	99.9	31.9	8.8	15.3	8.3	15.2	19.4	1.0
	OTHER BIO-SCIENCES	557	100.1	39.6	9.4	11.1	6.7	14.9	17.4	1.0
	MEDICAL SCIENCES	115	100.0	26.2	3.4	14.5	14.3	14.6	27.0	
	AGRIC. SCIENCES	214	100.1	40.7	13.9	4.3	8.7	13.5	18.4	.6
	PSYCHOLOGY	152	100.1	22.6	12.6	16.3	3.7	17.9	26.9	.1
	SOCIAL SCIENCES	666	100.1	27.6	15.8	2.0	5.8	17.6	29.5	1.8
	MATHEMATICS	190	99.9	37.8	10.9	12.8	2.8	12.6	21.9	1.1
	PHYSICAL SCIENCES	456	100.1	34.1	9.0	16.3	8.5	14.9	16.6	.7
	ENGINEERING	86	99.9	34.3	7.4	11.4	10.9	11.4	24.2	.3
	ALL OTHER FIELDS	597	100.0	21.9	14.9	2.3	4.0	16.3	36.9	3.7

INDIVIDUAL ROWS MAY NOT SUM TO 100.0% BECAUSE OF ROUNDING.

Figure 7

Changing Sources of Support for Graduate Education in the Bio-Sciences



three decade cohorts, 3.1 per cent, 2.9 per cent, and 4.3 per cent, respectively, from non-VA governmental sources. In this field, support from family sources (largely working wives) meanwhile increased sharply, nearly doubling from 1945-50 to 1955-60.

The change in support from family sources is of considerable interest. The total from parents and spouses has not changed drastically over the several cohorts, except for the decline during the GI period. However, the proportion from parents has declined rather steadily, and the proportion from working wives has increased, most notably from the 1950 to the 1955 cohort in Figure 7. The support from the students' own earnings has not come back to its prewar figure; the combined total from savings and borrowings has declined gradually throughout the six decades. Relative support from private foundations and fellowships from other than government and university sources has not changed markedly in the bio-sciences or in the total of all fields, although there have been some significant changes within individual fields.

The field differences in Table 13 are noteworthy. They are chiefly accounted for in terms of sciences versus non-sciences; it is apparent that the "all other" fields have less support from both government and universities than have the science fields; the social sciences are intermediate between the natural sciences and "all others," which include the humanities and education. Educators particularly have had to depend on their own resources, principally current earnings, but also including borrowings and savings. The typical pattern in education has been, of course, for teachers to spend some time on the job before going on to graduate school, and then to acquire graduate credits year by year in summer school while working during the academic year on regular teaching jobs. In the last two 5-year cohorts, the university support of education has picked up again from a low of 8 per cent, but it remains the least-supported field in the current survey. Among the other fields, the bio-sciences and medical sciences have received most support from private sources, chiefly the private health-related foundations. Engineering has also been relatively well supported by private sources other than one's own or family resouces.

Education beyond the doctorate has had a long and distinguished history. The National Research Council postdoctoral fellowships began in the 1920's with funds provided by the Rockefeller Foundation. Following this lead, other sources of support developed, particularly in the post-World War II period. Table 14 summarizes the sources of support for postdoctoral fellowships enjoyed by the participants in the present study. There were 1626 people in all with such fellowships, approximately one sixth of the total group. About one fourth of these fellowships were provided by universities, and about one fourth by private foundations and health agencies (in Table 14 combined under the title "Priv. Fdn."). Most of the remainder were provided by the U.S. government, with the Public Health Service and National Science Foundation outstanding in this category. The support by government agencies has been expanded greatly in recent years, but does not include some people from earlier cohorts who may only recently have held postdoctoral fellowships. In the earliest five-year cohort, universities furnished 50 per cent of the support then available, and private foundations 30 per cent. Since that time, the proportionate support by universities has declined to 14 per cent, that of private foundations to 11 per cent in the most recent five-year cohort, while the PHS percentage has risen from 2 per cent to 40 per cent, and the NSF percentage from 1 per cent to 15 per cent. These changes in relative support must be viewed against a background of sharply rising total numbers. Thus the universities and private foundations have decreased their support much less in total numbers of awards than these percentages would seem to indicate; government support, by a variety of agencies, has greatly expanded the total number of people so supported, and only to a limited extent has supplanted the earlier sources. The numbers of cases in each five-year cohort supported by each source are given in fine-field detail in Appendix 9.

The length of postdoctoral fellowships has has not changed markedly over the years covered by the present survey. Half of all the postdoctoral fellowships are for one calendar year; one sixth are for two years; about 10 per cent are for a summer term only; about 12 per cent for an academic year; the remainder are for varying periods. Appendix 10 provides the detail regarding length of fellowships.

About one fourth of postdoctoral fellowship-holders also held a second such fellowship. The sources of these second fellowships did not vary greatly from those of the first, except for somewhat greater dependence on private-foundation sources. The sources of support for the second postdoctoral fellowships are shown in Table 15. Here the importance of private health-agency and foundation sources is apparent. Almost half

of the support comes from this source in the oldest cohort. In the second and third cohorts, this source diminishes. Federal agencies other than PHS and NSF come up in the 1945-50 cohort, but drop off in the youngest cohort. A caution is in order with regard to Table 15: The numbers of cases are small in individual fields, making it easy to over-interpret percentage differences.

More detailed data with regard to sources of support for postdoctoral fellowships, and duration of such fellowships, are to be found in Appendix 9 and Appendix 10. It may be noted, in comparing these two appendixes, that the number of fellowships shown in Appendix 9 is 1626, while in Appendix 10 it is 1679. The discrepancy is accounted for by the "unknown" category, which is omitted in these tables. The size of this category varied slightly for the two sets of data. Each table as it stands is correct, however, for the information it encompasses.

Postdoctoral fellowships are not a clearly-defined entity, and the tables here must reflect some of the ambiguity surrounding this term. However, the number of different types of postdoctoral support has perhaps increased in the most recent years beyond what is shown in the tables of this report. Postdoctoral research associateships, and stipends provided by training grants furnished by the National Institutes of Health, are two examples. Another is direct employment on federally-supported research projects for a period of a year or two. Here the term "fellowship" is sometimes erroneously applied, at least apart from formal contractural documents. "Teaching fellow" is another term that implies a training situation, but that may in some instances be little different from an instructorship. Regardless of the terminology, however, it is apparent that a great deal more attention is being given, and support provided, for education beyond the doctorate in recent years, as compared to the earlier decades covered in the present report.

TABLE 14

SOURCES OF SUPPORT, IN PERCENTAGE, FOR FIRST POSTDOCTORAL FELLOWSHIP

COHORT	FIELD	TOTAL NO.	TOTAL %	UNIV	PHS	NSF	OTHR FED.	IND, BUS.	PRIV FDN.	OTHER
ALL	TOTAL, ALL FIELDS	1626	100.0	25.8	18.0	9.2	12.7	4.5	25.9	3.9
COHORT 35-40	TOTAL, ALL FIELDS	419	100.0	43.0	2.1	2.6	9.8	8.6	31.5	2.4
	BIO-SCIENCES, TOTAL	167	100.0	41.3	4.2	3.6	4.8	10.2	34.1	1.8
	BASIC MED. SCIENCES	110	99.9	40.0	2.7	.9	4.5	14.5	35.5	1.8
	OTHER BIO-SCIENCES	57	100.2	43.9	7.0	8.8	5.3	1.8	31.6	1.8
	MEDICAL SCIENCES	6	100.0	33.3	16.7				50.0	
	AGRIC. SCIENCES	9	100.0	55.6			11.1	33.3		
	PSYCHOLOGY	16	100.0	62.5			12.5		25.0	
	SOCIAL SCIENCES	77	100.0	51.9			15.6	5.2	24.7	2.6
	MATHEMATICS	24	100.1	45.8		16.7	16.7	4.2	16.7	
	PHYSICAL SCIENCES	50	100.0	42.0	2.0	2.0	6.0	18.0	28.0	2.0
	ENGINEERING	4	100.0					50.0	50.0	
	ALL OTHER FIELDS	66	100.0	33.3			16.7		43.9	6.1
COHORT 45-50	TOTAL, ALL FIELDS	498	99.9	26.5	9.4	7.8	16.1	3.8	32.7	3.6
	BIO-SCIENCES, TOTAL	147	100.0	21.8	22.4	11.6	4.1	6.8	27.2	6.1
	BASIC MED. SCIENCES	75	100.0	13.3	24.0	6.7	5.3	10.7	34.7	5.3
	OTHER BIO-SCIENCES	72	100.0	30.6	20.8	16.7	2.8	2.8	19.4	6.9
	MEDICAL SCIENCES	8	100.0	50.0	37.5		12.5			
	AGRIC SCIENCES	13	100.1	38.5		7.7	15.4	7.7	23.1	7.7
	PSYCHOLOGY	20	100.0	20.0	25.0	5.0	10.0		40.0	
	SOCIAL SCIENCES	111	99.9	30.6	.9		18.9	1.8	45.0	2.7
	MATHEMATICS	34	100.0	41.2		23.5	20.6		14.7	
	PHYSICAL SCIENCES	70	100.0	25.7	4.3	11.4	24.3	5.7	25.7	2.9
	ENGINEERING	11	100.1		9.1	36.4	36.4	9.1	9.1	
	ALL OTHER FIELDS	84	100.0	25.0	1.2		23.8	1.2	45.2	3.6
COHORT 55-60	TOTAL, ALL FIELDS	709	100.0	15.1	33.4	14.1	12.0	2.5	17.8	5.1
	BIO-SCIENCES, TOTAL	400	100.1	9.0	53.0	12.3	6.0	2.0	14.0	3.8
	BASIC MED. SCIENCES	279	100.0	9.7	55.9	10.4	6.1	2.5	12.9	2.5
	OTHER BIO-SCIENCES	121	99.9	7.4	46.3	16.5	5.8	.8	16.5	6.6
	MEDICAL SCIENCES	1	100.0	27.3	63.6	9.1				
	AGRIC. SCIENCES	18	100.1	16.7	11.1	16.7	27.8	11.1	16.7	
	PSYCHOLOGY	18	100.1	5.6	55.6	16.7	22.2			
	SOCIAL SCIENCES	110	99.9	34.5	1.8	3.6	10.9	4.5	36.4	8.2
	MATHEMATICS	34	99.9	17.6	2.9	44.1	14.7		8.8	11.8
	PHYSICAL SCIENCES	70	100.0	18.6	4.3	28.6	27.1	4.3	7.1	10.0
	ENGINEERING	6	100.0			33.3	66.7			
	ALL OTHER FIELDS	42	100.0	16.7		7.1	28.6		45.2	2.4

INDIVIDUAL ROWS MAY NOT SUM TO 100.0% BECAUSE OF ROUNDING

TABLE 15

SOURCES OF SUPPORT, IN PERCENTAGE, FOR SECOND POSTDOCTORAL FELLOWSHIP

COHORT	FIELD	TOTAL NUMBER	TOTAL PERCENT	UNIV	PHS	NSF	OTHR FED.	IND, BUS.	PRIV FDN.	OTHER
ALL	TOTAL, ALL FIELDS	414	99.9	20.5	16.4	10.1	15.0	3.1	32.9	1.9
COHORT 35-40	TOTAL, ALL FIELDS	122	100.0	26.2	3.3	7.4	12.3	2.5	46.7	1.6
	BIO-SCIENCES, TOTAL	43	100.2	23.3	7.0	7.0	7.0	4.7	51.2	
	BASIC MED. SCIENCES	29	99.9	24.1	10.3	6.9	3.4	6.9	48.3	
	OTHER BIO-SCIENCES	14	99.9	21.4		7.1	14.3		57.1	
	MEDICAL SCIENCES									
	AGRIC. SCIENCES	1	100.0	100.0						
	PSYCHOLOGY	3	99.9			33.3	33.3	33.3		
	SOCIAL SCIENCES	23	99.9	34.8			4.3		56.5	4.3
	MATHEMATICS	9	99.9	22.2		33.3	11.1		33.3	
	PHYSICAL SCIENCES	17	100.0	23.5	5.9	5.9	29.4		29.4	5.9
	ENGINEERING	1	100.0						100.0	
	ALL OTHER FIELDS	25	100.0	28.0		4.0	16.0		52.0	
COHORT 45-50	TOTAL, ALL FIELDS	140	100.0	19.3	6.4	11.4	23.6	2.9	34.3	2.1
	BIO-SCIENCES, TOTAL	38	100.0	18.4	13.2	18.4	21.1		26.3	2.6
	BASIC MED. SCIENCES	16	100.1	25.0	12.5	6.3	18.8		37.5	
	OTHER BIO-SCIENCES	22	99.9	13.6	13.6	27.3	22.7		18.2	4.5
	MEDICAL SCIENCES	2	100.0				50.0		50.0	
	AGRIC. SCIENCES	5	100.0				60.0	20.0	20.0	
	PSYCHOLOGY	7	100.0		28.6		14.3		57.1	
	SOCIAL SCIENCES	35	100.0	31.4	2.9	2.9	25.7		37.1	
	MATHEMATICS	14	99.9	14.3		35.7	7.1	7.1	35.7	
	PHYSICAL SCIENCES	14	99.9	14.3		21.4	28.6	7.1	21.4	7.1
	ENGINEERING	3	100.0		33.3		66.7			
	ALL OTHER FIELDS	22	99.9	22.7			18.2	4.5	50.0	4.5
COHORT 55-60	TOTAL, ALL FIELDS	152	100.0	17.1	36.2	11.2	9.2	3.9	20.4	2.0
	BIO-SCIENCES, TOTAL	96	100.0	12.5	53.1	12.5	4.2	2.1	13.5	2.1
	BASIC MED. SCIENCES	69	99.9	8.7	60.9	8.7	4.3	1.4	14.5	1.4
	OTHER BIO-SCIENCES	27	99.9	22.2	33.3	22.2	3.7	3.7	11.1	3.7
	MEDICAL SCIENCES	2	100.0		50.0		50.0			
	AGRIC. SCIENCES	3	99.9	33.3	33.3				33.3	
	PSYCHOLOGY									
	SOCIAL SCIENCES	26	100.0	34.6			23.1	11.5	30.8	
	MATHEMATICS	5	100.0	20.0		20.0	20.0		40.0	
	PHYSICAL SCIENCES	11	100.1	18.2	18.2	27.3		9.1	18.2	9.1
	ENGINEERING	1	100.0				100.0			
	ALL OTHER FIELDS	8	100.0	12.5		12.5	12.5		62.5	

INDIVIDUAL ROWS MAY NOT SUM TO 100.0% BECAUSE OF ROUNDING.

Chapter 4

SOCIAL MOBILITY

What are the origins of doctorate-holders, in terms of the occupational categories of their fathers and the educational levels of their fathers and mothers? This question can be answered in a rough way from general observation: the educational level of the parents of doctorate-holders (or graduate students in general) is quite apparently above the educational level of the general population. Likewise, the large number of professional people among the parents of doctorate-holders has been frequently noted. But what is needed is a quantitative assessment of this relationship, and information as to whether the quantitative index is changing, and in what direction. To make this assessment, each person queried in this study was asked to check the occupational level of his father (in broad categories) and to give the educational level of both his parents. The resulting statistics were compared with comparable age-specific statistics from the U.S. census, to provide a normative frame based on the contemporaries of the parents of the doctorate-holders of each cohort. The assumption was made, in this connection, that the average generation was 30 years and that, on the average, the doctorate degrees were granted at the age of 30. The latter is approximately true for doctorates of recent years; any disparity between these assumptions and the actual facts would change the statistics slightly, but would have no appreciable effect on the general direction of the results.

Table 16 provides the necessary information regarding the educational attainment of the fathers of the doctorate-holders in the present sample, by major fields and decade cohorts. Table 17 provides similar information with respect to the mothers of these same people. More detailed data, by five-year cohorts, finer-field break-outs, and more detailed educational levels, are provided in Appendix 11 and Appendix 12. There are some interesting field differences that tend to persist from one cohort to the next. The most important finding, however, is that there is so little change, taking the whole group together, from cohort to cohort, in the distribution of educational levels of the parents. The data regarding education of fathers, taken from Appendix 11, is shown graphically in Figure 8. Here the constancy is quite apparent to visual inspection. The percentage with only grade school education declines somewhat from the earlier to the later cohorts, but at the level of high school graduate and beyond, the fluctuations are small and unsystematic; no general time trend is shown. For comparison, the corresponding statistics taken from U.S. census data for 1950 and 1960, for persons in general in the population of ages estimated to be equal to those of the fathers of the doctorates of each successive cohort, are shown graphically in Figure 9. Here a very marked trend is evident, due to the rise in the educational level of the population during the final quarter of the last century. The rise has continued, of course, but this continuation is not shown here, as no substantial number of doctorate-holders in the present study are among the children of people born in 1905 or later.

In comparing Figures 8 and 9, the second striking feature is that the parents of the doctorate-holders are far better educated than those of the general population, even for the most recent cohort shown. The median educational level of the birth cohort of 1900 is slightly short of 8th grade; the doctorate-holders of 1960 were born of parents whose median educational level was high school graduation. Among males in the general population, fewer than 1 in 10 of the latest age group had a college education, as compared with more than 1 in 4 of the fathers of doctorate-holders. At the level of graduate education, the disparity is approximately 5 to 1 for the latest cohort; it was 15 to 1 for the oldest.

An interesting line of speculation is opened, if one assumes that the trends shown in Figures 8 and 9 are to continue. If there were to be no change in the educational distribution of parents of doctorate-holders, while that of the general population continued to rise, the graphs would eventually intersect. At that point the growth of the doctorate population, as a percentage

TABLE 16

EDUCATION OF FATHER

COHORT	FIELD	TOTAL NO.	TOTAL %	PERCENT TERMINATING AT EACH LEVEL: NONE	GR. 1-8	GR. 9-11	H.S. GRAD	COLL 1-3	COLL GRAD	GRAD SCH.	UNK
ALL	TOTAL, ALL FIELDS	10017	100.0	2.1	31.1	9.3	16.1	11.1	13.6	13.3	3.4
COHORT 35-40	TOTAL, ALL FIELDS	2965	100.0	2.3	32.3	8.1	15.1	11.0	12.4	13.8	5.0
	BIO-SCIENCES. TOTAL	922	100.0	2.7	36.1	7.2	16.1	9.2	11.9	12.1	4.7
	BASIC MED. SCIENCES	559	100.1	3.0	36.0	7.5	15.6	7.9	13.1	11.6	5.4
	OTHER BIO-SCIENCES	363	100.0	2.2	36.4	6.6	16.8	11.3	10.2	12.9	3.6
	MEDICAL SCIENCES	70	100.1	2.9	22.9	5.7	14.3	8.6	5.7	24.3	15.7
	AGRIC. SCIENCES	151	99.9	2.0	50.3	9.9	11.9	6.6	4.6	11.3	3.3
	PSYCHOLOGY	144	100.1	.7	26.4	4.2	14.6	16.0	10.4	24.3	3.5
	SOCIAL SCIENCES	506	100.0	2.4	27.5	7.9	13.0	11.7	17.4	14.6	5.5
	MATHEMATICS	131	100.0	3.1	36.6	5.3	17.6	12.2	11.5	9.9	3.8
	PHYSICAL SCIENCES	444	100.1	1.4	26.6	9.9	16.2	12.4	13.5	17.6	2.5
	ENGINEERING	138	99.9	1.4	34.1	10.9	18.8	15.2	6.5	9.4	3.6
	ALL OTHER FIELDS	459	100.0	2.8	31.4	9.2	13.7	10.9	13.3	11.1	7.6
COHORT 45-50	TOTAL, ALL FIELDS	2916	100.0	1.9	32.0	9.2	15.4	11.0	13.6	13.8	3.1
	BIO-SCIENCES, TOTAL	746	99.8	2.5	33.6	10.7	17.4	9.9	9.5	12.7	3.5
	BASIC MED. SCIENCES	402	100.1	4.0	33.1	9.7	19.2	9.0	9.0	11.9	4.2
	OTHER BIO-SCIENCES	344	100.0	.9	34.3	11.9	15.4	11.0	10.2	13.7	2.6
	MEDICAL SCIENCES	63	100.0	1.6	17.5	6.3	15.9	9.5	14.3	28.6	6.3
	AGRIC. SCIENCES	168	100.0	1.2	47.6	6.0	14.9	12.5	7.7	8.9	1.2
	PSYCHOLOGY	171	99.9	2.3	37.4	9.9	13.5	10.5	9.9	11.7	4.7
	SOCIAL SCIENCES	524	100.0	1.7	32.1	8.8	13.5	12.8	16.2	12.2	2.7
	MATHEMATICS	131	100.1	2.3	29.0	9.9	13.0	9.9	15.3	17.6	3.1
	PHYSICAL SCIENCES	456	100.0	.7	23.2	8.1	17.8	10.5	18.2	19.1	2.4
	ENGINEERING	144	100.1	3.5	24.3	11.1	18.8	9.7	17.4	11.1	4.2
	ALL OTHER FIELDS	513	100.1	1.6	35.3	8.8	12.9	11.7	14.2	12.5	3.1
COHORT 55-60	TOTAL, ALL FIELDS	4136	99.9	2.2	29.6	10.3	17.3	11.2	14.4	12.5	2.4
	BIO-SCIENCES, TOTAL	1498	100.0	2.8	29.3	11.1	18.4	9.7	13.4	12.5	2.8
	BASIC MED. SCIENCES	927	100.0	3.2	30.7	10.5	19.0	9.5	12.6	11.8	2.7
	OTHER BIO-SCIENCES	571	100.1	2.1	27.0	12.1	17.3	10.2	14.7	13.7	3.0
	MEDICAL SCIENCES	121	99.9	2.5	26.4	9.9	23.1	5.0	9.9	19.0	4.1
	AGRIC. SCIENCES	217	100.1		35.5	12.0	18.9	13.4	10.6	7.4	2.3
	PSYCHOLOGY	153	100.0	3.9	28.1	7.2	20.9	9.2	15.0	15.0	.7
	SOCIAL SCIENCES	682	99.9	2.2	31.8	9.4	13.8	12.3	15.2	13.9	1.3
	MATHEMATICS	196	100.1	3.6	26.5	8.7	13.3	12.8	16.8	14.8	3.6
	PHYSICAL SCIENCES	462	100.0	1.3	26.8	8.9	17.1	11.5	17.7	13.9	2.8
	ENGINEERING	181	100.0		29.8	14.4	16.0	12.7	15.5	10.5	1.1
	ALL OTHER FIELDS	626	100.0	2.2	29.9	9.9	17.7	13.4	14.4	9.9	2.6

INDIVIDUAL ROWS MAY NOT SUM TO 100.0% BECAUSE OF ROUNDING.

TABLE 17

EDUCATION OF MOTHER

COHORT	FIELD	TOTAL NO.	TOTAL %	PERCENT TERMINATING AT EACH LEVEL: NONE	GR. 1-8	GR. 9-11	H.S. GRAD	COLL 1-3	COLL GRAD	GRAD SCH.	UNK
ALL	TOTAL, ALL FIELDS	10017	100.1	2.3	27.3	10.1	26.4	17.3	10.4	2.6	3.7
COHORT 35-40	TOTAL, ALL FIELDS	2965	100.0	2.5	29.0	8.9	25.8	17.6	9.4	1.5	5.3
	BIO-SCIENCES, TOTAL	922	99.9	2.8	32.9	7.5	25.9	17.0	8.2	1.2	4.4
	BASIC MED. SCIENCES	559	99.9	3.4	32.7	7.3	24.7	15.6	9.3	1.4	5.5
	OTHER BIO-SCIENCES	363	100.0	1.9	33.1	7.7	27.8	19.3	6.6	.8	2.8
	MEDICAL SCIENCES	70	100.1	2.9	24.3	8.6	21.4	14.3	5.7	4.3	18.6
	AGRIC. SCIENCES	151	99.9	2.6	34.4	11.9	20.5	17.9	7.3	2.0	3.3
	PSYCHOLOGY	144	100.0	2.1	25.7	8.3	25.7	22.9	10.4	2.1	2.8
	SOCIAL SCIENCES	506	100.1	2.2	26.9	8.3	24.5	18.8	10.5	2.4	6.5
	MATHEMATICS	131	100.1	4.6	28.2	11.5	25.2	16.0	9.2	3.1	2.3
	PHYSICAL SCIENCES	444	99.9	1.8	19.1	10.6	32.2	17.8	13.7	1.8	2.9
	ENGINEERING	138	99.9	2.2	33.3	9.4	28.3	18.1	4.3	.7	3.6
	ALL OTHER FIELDS	459	100.0	2.2	32.2	9.2	22.4	16.6	8.9		8.5
COHORT 45-50	TOTAL, ALL FIELDS	2916	100.1	2.2	28.4	9.6	25.9	16.8	11.1	2.5	3.6
	BIO-SCIENCES, TOTAL	746	100.0	2.8	31.0	10.3	24.8	16.4	8.8	1.7	4.2
	BASIC MED. SCIENCES	402	100.0	3.5	30.8	8.0	24.9	16.9	9.0	1.7	5.2
	OTHER BIO-SCIENCES	344	99.9	2.0	31.1	13.1	24.7	15.7	8.7	1.7	2.9
	MEDICAL SCIENCES	63	100.0	1.6	19.0	4.8	27.0	19.0	22.2	1.6	4.8
	AGRIC. SCIENCES	168	100.0	.6	30.4	11.9	24.4	20.2	8.3	2.4	1.8
	PSYCHOLOGY	171	99.8	2.3	29.8	10.5	24.0	17.5	9.9	2.9	2.9
	SOCIAL SCIENCES	524	100.2	2.5	28.1	10.1	25.8	17.4	10.9	2.3	3.1
	MATHEMATICS	131	100.0	3.1	26.7	8.4	27.5	13.7	12.2	5.3	3.1
	PHYSICAL SCIENCES	456	100.0	.9	21.3	7.0	30.5	17.5	15.8	3.5	3.5
	ENGINEERING	144	100.1	4.2	27.1	9.7	27.8	14.6	9.0	2.8	4.9
	ALL OTHER FIELDS	513	99.9	2.1	32.0	10.3	23.6	15.8	10.5	1.9	3.7
COHORT 55-60	TOTAL, ALL FIELDS	4136	100.2	2.3	25.3	11.3	27.2	17.3	10.6	3.5	2.7
	BIO-SCIENCES, TOTAL	1498	100.0	2.4	25.3	11.7	28.7	16.6	9.1	3.1	3.1
	BASIC MED. SCIENCES	927	100.0	2.7	25.7	11.3	30.3	16.0	8.1	3.0	2.9
	OTHER BIO-SCIENCES	571	100.1	1.9	24.7	12.3	26.1	17.7	10.7	3.2	3.5
	MEDICAL SCIENCES	121	100.0	3.3	30.6	11.6	19.0	19.0	9.9	2.5	4.1
	AGRIC. SCIENCES	217	99.9	1.8	30.9	12.9	23.0	21.2	5.5	1.8	2.8
	PSYCHOLOGY	153	100.1	2.6	23.5	9.2	35.3	14.4	9.2	3.9	2.0
	SOCIAL SCIENCES	682	99.9	2.6	27.3	9.8	24.0	17.0	12.8	4.5	1.9
	MATHEMATICS	196	100.0	3.6	21.4	7.1	28.6	15.3	14.3	6.1	3.6
	PHYSICAL SCIENCES	462	100.0	1.5	17.7	11.3	32.0	18.6	12.8	3.5	2.6
	ENGINEERING	181	100.1	2.2	28.2	14.4	26.0	15.5	9.9	2.8	1.1
	ALL OTHER FIELDS	626	99.9	1.6	26.5	12.3	24.1	18.5	11.3	3.2	2.4

INDIVIDUAL ROWS MAY NOT SUM TO 100.0% BECAUSE OF ROUNDING.

Figure 8

Educational Level of Fathers of Doctorate-Holders

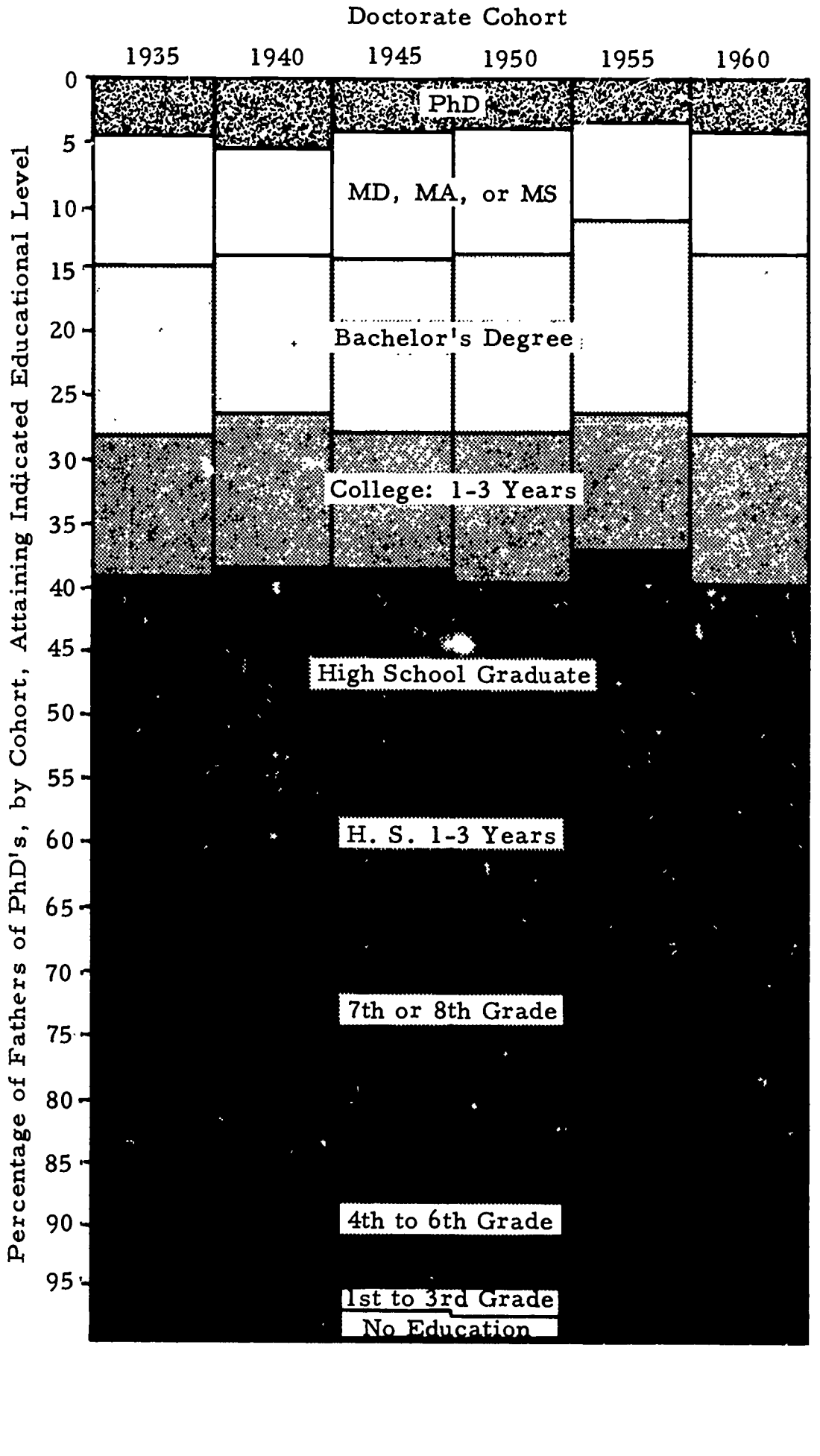
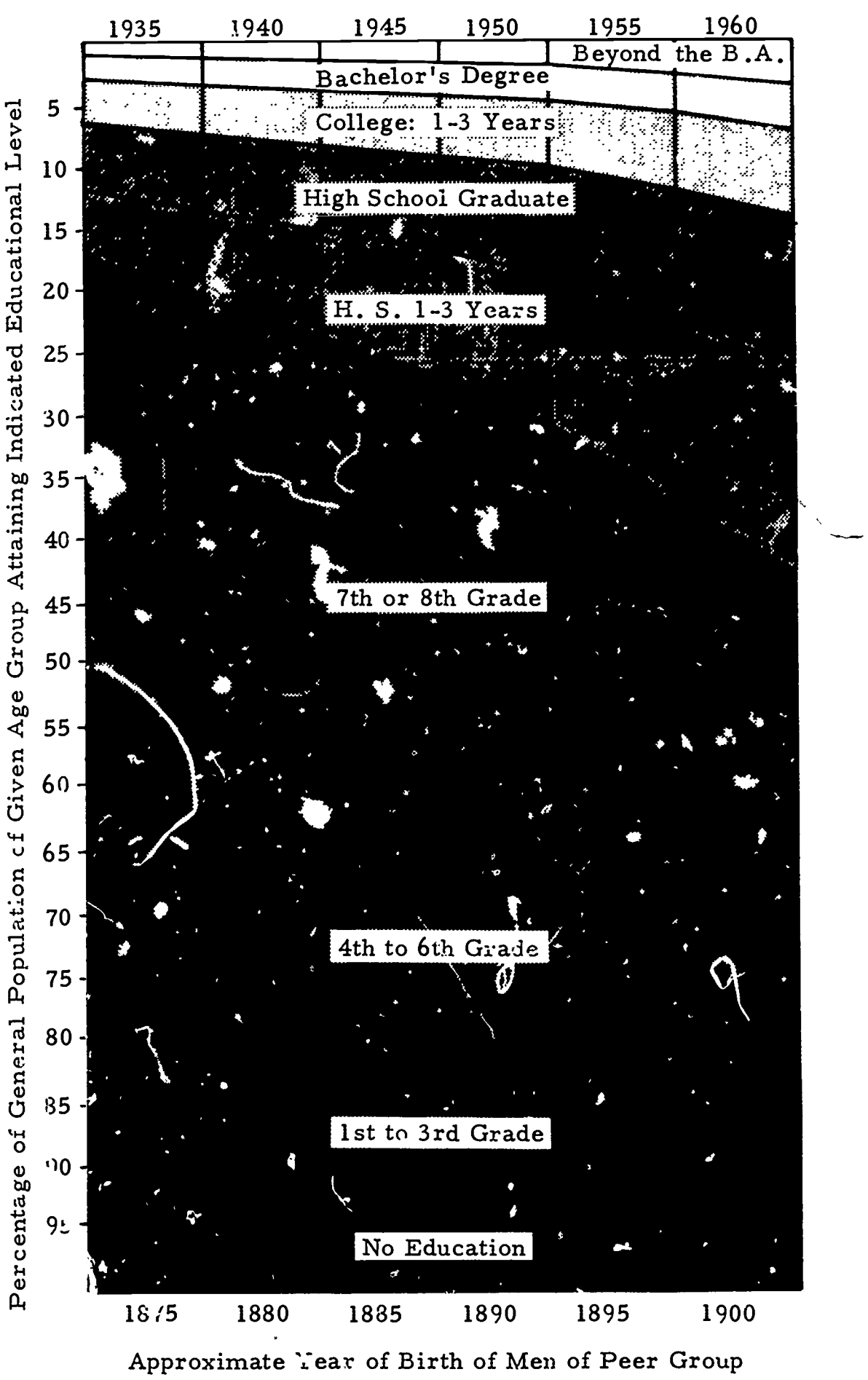


Figure 9

Educational Levels of Peers of Fathers of PhD's, by Doctorate Cohort



of the total population, must cease. More probably, this assumption will gradually become invalid; as the general educational level of the population increases, it is likely that the educational level of the parents of doctorate-holders will also increase, although perhaps the latter change may be less rapid. Meanwhile, the general educational improvement of the population in all occupational categories has had an interesting effect, as shown in Table 18.

Table 18 provides information on the occupational levels of the fathers of the doctorate-holders by decade cohorts and general fields. As with the educational levels, there are interesting field differences, mostly in the expected direction. For example, the proportion of those in the agricultural sciences whose fathers were either farmers or farm managers is exceptionally high. The seven occupational categories shown in Table 18 are a condensation from the more specific categories shown in Appendix 13, which also provides a more detailed field and cohort break-out. These categories are as follows: College or university teacher; other professional; managerial; farm or farm management; sales and service; clerical; skilled craftsman; semi-skilled; unskilled. The latter three have been combined in Table 18. Census data, fortunately, were available in categories that correspond rather well with those used here; they were used to derive age-specific data for a normative base from which the data of Figure 10 were computed. In Figure 10 the ordinate is an expectancy ratio: the ratio of the relative frequency of the occupational category among the fathers of doctorate-holders to its relative frequency among males in the general population of the same age as the fathers of the doctorate-holders. Thus, in the professional category, at the earliest point on the diagram, it is shown that the frequency of professional workers (combining college teachers and others) among the fathers of doctorate-holders was eight times as high as in the general population. By the end of the period here investigated, this proportion had dropped to 5:1. For the managerial group there was a slight decline, but the ratio is still 2:1. At the unskilled labor level, the disproportion was of course in the opposite direction. Unskilled laborers among the parents of doctorate-holders appeared only one twentieth as often as they appear among the general population at the beginning of the period; at the end of the period, the disproportion had been reduced to 1:6. At the semi-skilled labor level there was a minor upward trend. For all the other groups, the proportions were not significantly different from a 1:1 ratio, and showed mixed trends over the six data points of this chart. They have therefore been grouped into a general gray zone about the normality point; this zone covers the widest deviations from 1:1 shown for any of the groups included.

The trend lines in Figure 10 invite speculation as to the possible trends in the future. As these lines depict a ratio, it is necessary to examine separately the numerator and the denominator of this ratio. The denominator is the relative frequency of an occupational group among members of the general male population, for a specific age group. This figure can be determined with some accuracy for 25-30 years beyond the range shown on the chart, as the chart depicts data for men 60 years of age and older, whereas general occupational category is fixed for almost everyone by the age of 30. By examining the occupational distribution of age groups between 30 and 55 years of age in the 1960 census data, the denominators of the expectancy ratios can be computed. When this is done, it is found that for the professional group the trend is upward for at least 30 years, and presumably indefinitely after that. For the farm population, it is sharply downward for the indefinite future. For the remainder of the groups, trends are not as clear-cut, particularly as matters of definition enter for the younger groups. This is especially true of the managerial group, where no clear trend is evident. Clerical, sales, and service occupations also show no large and steady trends. The skilled and semi-skilled show an upward trend for the quarter of a century next following the youngest cohort shown in Figure 10; the unskilled group changes but little. Over the longer term, according to projections by the Department of Labor, the semi-skilled group and unskilled group should decline as a percentage of the total labor force.

The numerator of the expectancy ratio is a matter to be determined empirically with each new doctorate crop; speculation is warranted as to the trend of the numerators over the next decade or two, perhaps longer. It is reasonable to assume that there will be an increase in doctorates from families of the lesser-skilled groups as the general educational level of these occupational categories increases. Another factor working in the same direction is increased educational support for those of limited financial means but high ability. A federal program of scholarship support, if it should be undertaken,

TABLE 18

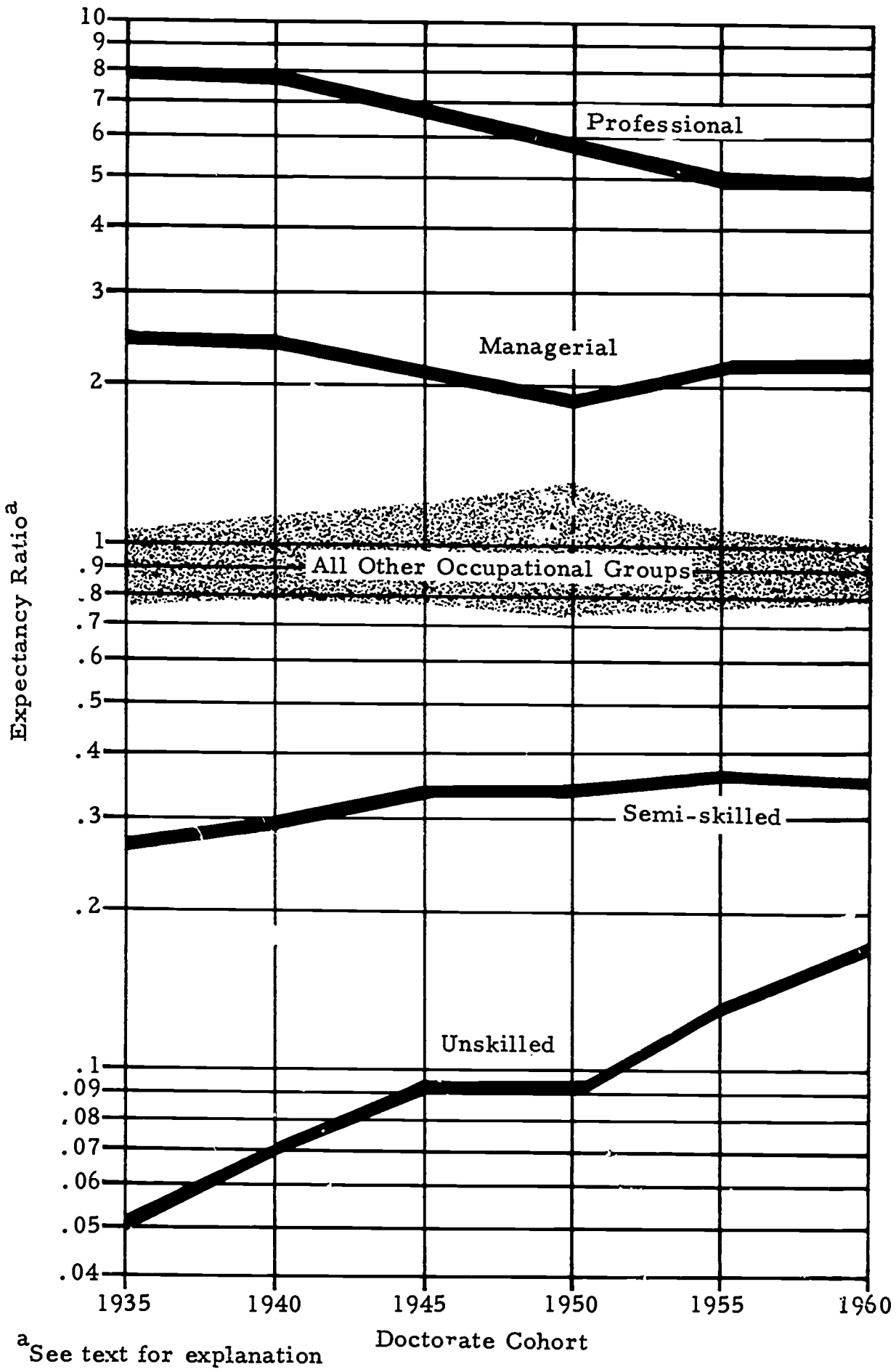
OCCUPATIONAL LEVEL OF FATHER -- PERCENTAGE IN EACH CATEGORY

COHORT	FIELD	TOTAL NO.	TOTAL %	COLL TCHR	OTHER PROF	MNGR	FARM	SLS. SVC.	CLER	LABOR	UNK
ALL	TOTAL, ALL FIELDS	10017	99.9	5.5	22.5	18.1	15.6	11.2	4.4	21.4	1.2
COHORT 35-40	TOTAL, ALL FIELDS	2965	99.9	6.5	22.6	18.7	19.5	9.0	4.1	18.0	1.5
	BIO-SCIENCES, TOTAL	922	100.1	6.1	19.7	16.3	21.3	9.9	4.1	21.3	1.4
	BASIC MED. SCIENCES	559	100.0	6.1	20.2	16.5	17.9	10.7	3.9	23.3	1.4
	OTHER BIO-SCIENCES	363	100.0	6.1	19.0	16.0	26.4	8.5	4.4	18.2	1.4
	MEDICAL SCIENCES	70	100.0	5.7	28.6	17.1	11.4	12.9	4.3	18.6	1.4
	AGRIC. SCIENCES	151	99.9	3.3	11.9	13.2	49.7	5.3	1.3	12.6	2.6
	PSYCHOLOGY	144	100.0	9.7	36.1	18.1	7.6	9.7	2.1	15.3	1.4
	SOCIAL SCIENCES	506	100.0	7.1	25.3	21.5	22.1	7.5	3.0	11.7	1.8
	MATHEMATICS	131	99.9	6.9	18.3	19.8	13.7	14.5	3.8	22.1	.8
	PHYSICAL SCIENCES	444	99.8	9.7	23.6	19.1	15.5	9.9	5.6	16.2	.2
	ENGINEERING	138	100.0	2.2	17.4	24.6	11.6	8.0	6.5	29.0	.7
	ALL OTHER FIELDS	459	99.9	5.2	25.7	20.0	15.9	7.2	5.0	18.1	2.8
COHORT 45-50	TOTAL, ALL FIELDS	2916	99.9	5.7	22.8	17.0	15.9	12.3	4.3	21.1	.8
	BIO-SCIENCES, TOTAL	746	99.9	6.0	18.2	14.2	19.4	12.9	4.2	24.1	.9
	BASIC MED. SCIENCES	402	100.1	5.2	17.2	15.7	15.2	15.7	4.0	25.6	1.5
	OTHER BIO-SCIENCES	344	100.1	7.0	19.5	12.5	24.4	9.6	4.4	22.4	.3
	MEDICAL SCIENCES	63	99.9	6.3	39.7	7.9	12.7	19.0		14.3	
	AGRIC. SCIENCES	168	100.0	4.8	10.1	7.1	53.6	7.1	2.4	14.9	
	PSYCHOLOGY	171	100.0	4.1	19.9	18.7	8.8	14.0	4.7	29.2	.6
	SOCIAL SCIENCES	524	99.9	5.9	24.2	22.1	14.7	12.2	3.2	17.2	.4
	MATHEMATICS	131	100.0	5.3	29.8	20.6	8.4	14.5	4.6	15.3	1.5
	PHYSICAL SCIENCES	456	99.9	8.3	26.5	16.4	7.7	12.1	5.9	21.5	1.5
	ENGINEERING	144	100.0	4.9	22.2	17.4	8.3	11.8	8.3	25.7	1.4
	ALL OTHER FIELDS	513	100.0	3.5	26.3	19.1	13.8	11.7	4.1	20.9	.6
COHORT 55-60	TOTAL, ALL FIELDS	4136	99.9	4.6	22.2	13.5	12.7	12.0	4.6	24.1	1.2
	BIO-SCIENCES, TOTAL	1498	100.0	4.9	21.9	16.6	11.9	12.7	4.5	25.8	1.7
	BASIC MED. SCIENCES	927	99.9	4.5	20.3	17.6	11.2	13.9	4.6	25.9	1.9
	OTHER BIO-SCIENCES	571	100.0	5.6	24.5	15.1	13.0	10.7	4.2	25.7	1.2
	MEDICAL SCIENCES	121	100.1	1.7	28.1	15.7	12.4	12.4	3.3	24.8	1.7
	AGRIC. SCIENCES	217	100.1	2.3	13.4	10.1	44.7	7.4	3.7	18.0	.5
	PSYCHOLOGY	153	100.0	5.2	23.5	24.2	4.6	15.0	2.6	24.2	.7
	SOCIAL SCIENCES	682	100.1	6.5	22.9	19.5	12.2	11.9	4.7	21.8	.6
	MATHEMATICS	196	100.0	7.1	26.0	18.9	6.6	13.3	3.6	23.5	1.0
	PHYSICAL SCIENCES	462	100.0	3.5	26.8	18.2	8.7	10.8	5.4	26.0	.6
	ENGINEERING	181	100.1	1.7	17.1	22.1	7.2	13.3	10.5	26.5	1.7
	ALL OTHER FIELDS	626	100.1	4.2	20.9	23.0	12.5	11.7	4.0	22.5	1.3

INDIVIDUAL ROWS MAY NOT SUM TO 100.0% BECAUSE OF ROUNDING.

Figure 10

CHANGING OCCUPATIONAL SOURCES OF DOCTORATE-HOLDERS



[a]See text for explanation

would tend definitely to raise the educational aspirations and achievement of those from lower-income families. The trend to more general education is steadily upward; already over half of the pertinent age group graduates from high school, as compared with only one quarter for the 1900 birth cohort. Of those graduating from high school at the present time, approximately half go on to college: it is becoming "the thing to do" for an ever larger portion of the population, whereas it was a rarity for those born at the turn of the century. As awareness of higher education (and means to attain it) becomes more general, so likewise, one may expect, will aspiration to graduate school and eventual doctorate attainment. It is a safe guess that at the present time a great proportion of the population, even of those potentially capable of doctorate attainment, have but little awareness of the possibility of education beyond the baccalaureate, except in a dim way with respect to such ancient professions as law and medicine. Studies of the ability level of doctorate-holders, measured at the time of high school attendance, indicate that only a small fraction of those with doctorate capability (even assuming a very rigorous definition of the term) actually attain the PhD. All of these factors taken together would tend to point to the probability that over the next decade or more, a higher and higher proportion of doctorate-holders will come from families where the bread-winner is of the lower-paid and less-skilled occupational categories. If this is true, the opposite would be expected from the professional groups. The net result would be that the trend lines shown in Figure 10 would continue to converge over the foreseeable future.

TABLE 19

Relation of Education of Father to Category of Present Employer, All Fields Combined

Educ. Level of Father	Numbers and Per cent Distribution					Computation of Chi Squared					
	Total Cases	Coll., Univ.	U.S. Govt.	Bus., Ind.	All Other	Statistic	Total	Coll., Univ.	U.S. Govt.	Bus., Ind.	All Other
Total	9664	5747	801	1468	1648	Expected	9664.0	5747.0	801.0	1468.0	1648.0
	100.0	59.5	8.3	15.2	[illegible]	Chi Sq.	46.3	7.8	12.1	10.6	15.9
None	214	102	27	32	53	Expected	214.0	127.3	17.7	32.5	36.5
	100.0	47.7	12.6	15.0	24.8	Chi Sq.	17.3	5.0	4.8	0.0	7.5
Grades 1-3	213	130	20	28	35	Expected	213.0	126.7	17.7	32.4	36.3
	100.0	61.0	9.4	13.1	16.4	Chi Sq.	1.0	0.1	0.3	0.6	0.0
Grades 4-6	878	524	82	113	159	Expected	878.0	522.1	72.8	133.4	149.7
	100.0	59.7	9.3	12.9	18.1	Chi Sq.	4.9	0.0	1.2	3.1	0.6
Grades 7-8	2023	1213	184	298	328	Expected	2023.0	1203.0	167.7	307.3	345.0
	100.0	60.0	9.1	14.7	16.2	Chi Sq.	2.8	0.1	1.6	0.3	0.8
H.S. 1-3	932	559	73	140	160	Expected	932.0	554.2	77.2	141.6	158.9
	100.0	60.0	7.8	15.0	17.2	Chi Sq.	0.3	0.0	0.2	0.0	0.0
H.S. Grad.	1610	922	130	276	282	Expected	1610.0	957.4	133.4	244.6	274.6
	100.0	57.3	8.1	17.1	17.5	Chi Sq.	5.6	1.3	0.1	4.0	0.2
Coll. 1-3	1106	684	82	185	155	Expected	1106.0	657.7	91.7	168.0	188.6
	100.0	61.8	[illegible]	16.7	14.0	Chi Sq.	9.8	1.1	1.0	1.7	6.0
Coll. Grad.	1359	819	95	207	238	Expected	1359.0	808.2	112.6	206.4	231.8
	100.0	60.3	7.0	15.2	17.5	Chi Sq.	3.1	0.1	2.8	0.0	0.2
Beyond B.A.	1329	794	108	189	238	Expected	1329.0	790.3	110.2	201.9	226.6
	100.0	59.7	8.1	14.2	17.9	Chi Sq.	1.5	0.0	0.0	0.8	0.6

TABLE 20

Relation of Education of Mother to Category of Present Employer, All Fields Combined

Educ. Level of Mother	Numbers and Per cent Distribution: Total Cases	Coll., Univ.	U.S. Govt.	Bus., Ind.	All Other	Compution of Chi Squared: Statistic	Total	Coll., Univ.	U.S. Govt.	Bus., Ind.	All Other
Total	9633	5737	798	1468	1630	Expected	9633.0	5737.0	798.0	1468.0	1630.0
	100.0	59.6	8.3	15.2	16.9	Chi Sq.	68.2	10.3	12.7	20.9	24.3
None	231	112	25	33	61	Expected	231.0	137.6	19.1	35.2	39.1
	100.0	48.5	10.8	14.3	26.4	Chi Sq.	19.0	4.8	1.8	0.1	12.3
Grades	119	71	12	16	20	Expected	119.0	70.9	9.9	18.1	20.1
1-3	100.0	59.7	10.1	13.4	16.8	Chi Sq.	0.7	0.0	0.5	0.3	0.0
Grades	656	401	52	79	124	Expected	656.0	390.7	54.3	100.0	111.0
4-6	100.0	61.1	7.9	12.0	18.9	Chi Sq.	6.3	0.3	0.1	4.4	1.5
Grades	1956	1136	193	269	358	Expected	1956.0	1164.9	162.0	298.1	331.0
7-8	100.0	58.1	9.9	13.8	18.3	Chi Sq.	11.7	0.7	5.9	2.8	2.2
H.S.	1011	626	70	147	168	Expected	1011.0	602.1	83.8	154.1	171.1
1-3	100.0	61.9	6.9	14.5	16.6	Chi Sq.	3.6	0.9	2.3	0.3	0.1
H.S.	2636	1549	200	459	428	Expected	2636.0	1569.9	218.4	401.7	446.0
Grad.	100.0	58.8	7.6	17.4	16.2	Chi Sq.	10.7	0.3	1.5	8.2	0.7
Coll.	1727	1031	144	260	292	Expected	1727.0	1028.5	143.1	263.2	292.2
1-3	100.0	59.7	8.3	15.1	16.9	Chi Sq.	0.1	0.0	0.0	0.0	0.0
Coll.	1038	636	84	176	142	Expected	1038.0	618.2	86.0	158.2	175.6
Grad.	100.0	61.3	8.1	17.0	13.7	Chi Sq.	9.0	0.5	0.0	2.0	6.4
Beyond	259	175	18	29	37	Expected	259.0	154.2	21.5	39.5	43.8
B.A.	100.0	67.6	6.9	11.2	14.3	Chi Sq.	7.2	2.8	0.6	2.8	1.1

From time to time questions are raised regarding the occupational destinations of those from different socio-economic backgrounds. Do the college professors tend to come disproportionately from collegiate backgrounds, for example? Are those whose parents were educationally disadvantaged themselves unlikely to find their way into particular occupational categories, once they have attained the doctorate? These questions were carefully investigated.

Table 19 depicts the relationship between the education of the father of the doctorate-holder and category of employer on present job, for all fields and cohorts combined. For the purpose of the present exploration, the employer categories were reduced to four: colleges and universities; United States government; business and industry; and all other employers combined. In Table 19, the left half of the table is devoted to the numbers of cases in each employer category at each educational level, and to the percentage distribution, by level, of employer categories. The statistical exploration of the possibility that these distributions were non-random is indicated on the right-hand side of the table. Here, the cases are distributed, in the lines marked "expected" as they would be if there were no relationship between educational level and category of employer. That is, the percentage distribution is the same for each line of the table. In the lines marked "Chi squared" is the statistical computation of a discrepancy value, termed X^2 between the expected and the obtained values. The key value to be examined is the grand sum of all these contributions to X^2, at the top of the total column at the right side of the table. Here we find the X^2 to be 46.3. Reference to a table of the probability of X^2 shows this to be significant between the .01 and the .001 level of confidence. There is, then, some overall relationship between category of employer and educational level of father that deserves further examination. The first step is to translate this X^2 value to a contingency coefficient, as a means of measuring the intensity of the relationship. When this is done, it is found that the coefficient is only .07--a very weak overall relationship, but statistically significant because of the very large number of cases involved.

Exploring the table further, it is found that the contribution to X^2 by column of employer

TABLE 21

Relation of Occupation of Father to Category of Present Employer, All Fields Combined

Occup. Level of Father	Numbers and Per cent Distribution: Total Cases	Coll., Univ.	U.S. Govt.	Bus., Ind.	All Other	Compution of Chi Squared: Statistic	Total	Coll., Univ.	U.S. Govt.	Bus., Ind.	All Other
Total	9881	5842	817	1491	1731	Expected	9881.0	5842.0	817.0	1491.0	1731.0
	100.0	59.1	8.3	15.1	17.5	Chi Sq.	75.9	4.7	24.3	34.5	12.4
Coll. or	551	319	52	73	107	Expected	551.0	325.8	45.6	83.1	96.5
Univ.	100.0	57.9	9.4	13.2	19.4	Chi Sq.	3.4	0.1	0.9	1.2	1.1
Other	2254	1370	146	305	433	Expected	2254.0	1332.6	186.4	340.1	394.9
Prof.	100.0	60.8	6.5	13.5	19.2	Chi Sq.	17.1	1.0	8.7	3.6	3.7
Mana-	1809	1046	126	306	331	Expected	1809.0	1069.5	149.6	273.0	316.9
gerial	100.0	57.8	7.0	16.9	18.3	Chi Sq.	8.9	0.5	3.7	4.0	0.6
Farmer	1563	965	161	176	261	Expected	1563.0	924.1	129.2	235.8	273.8
	100.0	61.7	10.3	11.3	16.7	Chi Sq.	25.4	1.8	7.8	15.2	0.6
Sales,	1122	656	108	187	171	Expected	1122.0	663.4	92.8	169.3	196.6
Service	100.0	58.5	9.6	16.7	15.2	Chi Sq.	7.8	0.1	2.5	1.8	3.3
Clerical	440	255	37	71	77	Expected	440.0	260.1	36.4	66.4	77.1
	100.0	58.0	8.4	16.1	17.5	Chi Sq.	0.4	0.1	0.0	0.3	0.0
Skilled	1377	788	119	233	237	Expected	1377.0	814.1	113.9	207.8	241.2
Craft	100.0	57.2	8.6	16.9	17.2	Chi Sq.	4.2	0.8	0.2	3.1	0.1
Unsk. and	765	443	68	140	114	Expected	765.0	452.3	63.3	115.4	134.0
Semi-sk.	100.0	57.9	8.9	18.3	14.9	Chi Sq.	8.8	0.2	0.4	5.2	3.0

category is rather negatively related to the number of cases in the column--an indication that chance relationships may be inflating the value somewhat. The summed X^2 for the college and university column is only 7.8, which, considered by itself, does not indicate a significant relationship. A very slight positive relationship between educational level of father and probability of university employment is evident; whether it is greater than chance is the question. A similar question arises regarding employment by the U.S. government, where a slight but consistent negative relationship is seen. In the business and industry column, the numbers at the highest and lowest educational levels are approximately as expected, but in the middle range the tendency is for too many at the high school level and too few at the level of the upper grades. Finally, in the "all other employers" category, there is a surplus at the "no formal education" level and a smaller number than expected at the "some college" level. Because of the heterogeneity of this category, interpretation is difficult. To sum up the impressions from examination of this table, some slight tendencies are found in not unexpected directions, but they are properly evaluated by the contingency coefficient of .07.

Turning to Table 20, which depicts the relationship between educational level of the mother of the doctorate-holder and category of present employer, it is to be seen that the same general trend holds. The X^2 of 68.2 for the whole table corresponds to a contingency coefficient of .08--not appreciably different from that regarding the father's education. Finally, Table 21 shows the relationship between employer and occupational level of the father of the doctorate-holder. Here the contingency coefficient is .09, barely stronger than that for education. The interpretation varies, however, as the occupational categories cannot properly be thought of in quite the same way as the linear educational-level scale. It appears that those whose fathers were in professional work tend to some extent to avoid government and business employment, and to be somewhat more frequent in the university and "all other" categories. Of those with farm backgrounds, an unduly large proportion are in government employment, and

fewer than expected in business and industry. Those whose fathers were in the "sales and service" category are found somewhat more frequently than chance would warrant in government and business employment, less frequently in the "all other" category. Finally, those whose fathers were from the labor categories, including skilled, semi-skilled, and unskilled, tend to be found somewhat more frequently in business and industry, and less frequently than expected in the university and "other" categories. All of these tendencies, however, are very mild, showing up only when large numbers of cases are aggregated.

TABLE 22

Relation of Family Background Factors to Present Employer Category

Field of Doctorate	Education of Father			Education of Mother			Occupation of Father		
	X^2	P	C	X^2	P	C	X^2	P	C
All Fields Combined	46.3	.01-.001	.07	68.2	<.001	.08	75.9	<.001	.09
Basic Med. Sciences	49.2	.01-.001	.16	41.9	.02-.01	.15	30.5	.10-.05	.13
Other Bio-Sciences	49.7	.01-.001	.16	38.6	.05-.02	.40	37.0	.02-.01	.13
Psychology	22.8	>.50	--	23.4	.50	--	15.1	.80	--
Social Sciences	32.1	>.10	--	30.5	.20-.10	--	35.7	.05-.02	--
Mathematics	37.3	.05-.02	--	41.7	.02-.01	--	33.6	.05-.02	--
Physical Sciences	12.9	>.95	--	28.0	.30-.20	--	20.9	.50	--
Engineering	42.0	.01	--	27.2	.30	--	16.5	.70	--
All Other Fields	28.5	.30-.20	--	45.4	.01-.001	.17	31.5	.10-.05	--
Degrees of Freedom	24			24			21		
Within-Fields Sum	274.5	.00006	.17	276.7	.00004	.17	220.8	.03	.15
Degrees of Freedom	192			192			184		

On the basis of these findings, it might at first seem unwarranted to explore further the relationships between background factors and employment category by field of doctorate. Yet this is not quite the case. All of the necessary tabulations were run, but those presented here only summarize the results. Table 22 presents the values of X^2, the probability level (P) of this statistic, and, where warranted, the conversion of X^2 to a contingency coefficient (C), by field of doctorate. The first line in Table 22 recapitulates the results discussed immediately above. The next eight lines present the X^2 and probability values for eight fields of doctorate. The final line summarizes the values for the eight separate fields. Here the value of X^2 is, of course, much larger, but this must be taken in relation to the much greater number of degrees of freedom. Even so, it is seen that the relationship is closer when the fields are taken into account than when field differences are ignored.

When the relationship of parents' education and father's occupation is examined in detail, field by field, it is found that many of the obtained X^2 values cannot be relied upon, as they are based on expected frequencies that are too small for reliability. In general, it is dubious practice to utilize data in which the expected cell frequencies fall below 10, and even more so when they are below 5. It is found that a number of the X^2 values in Table 22 are based in large part on contributions to X^2 derived from such unreliably small frequencies. This is true with respect to the mathematics and engineering X^2 values; these are thus ignored as nonsignificant. Other fields, such as psychology and the physical sciences are of course prima facie not significant. In the social sciences, only occupation of father appears to have a relationship that is close enough to create confidence as to its reliability. It still is not interpreted in terms of the contingency coefficient because of uncertainties as to its meaning; if C had been computed, it would have indicated a weak as well as unreliable relationship. In the "all other" category, educational level of the mother seems to be significant beyond the 1 per cent level of confidence, but its interpretation is difficult because of the heterogeneity of this field. This leaves the biological fields as those in which there appears to be a significant relationship between

background factors and employer category. Even here, where the relationships are statistically significant, they are weak, as shown by the contingency coefficients ranging from .13 to .16. The basic statistical tables are found in Appendix 14. Suffice it here to note that there are no surprising relationships. Those whose fathers were professional workers tend to occur with above-average frequency in universities and "all other" employment categories, and less frequently than expected in government and business employment. The government service has above-expectancy values for those whose fathers were farmers, farm managers, or in sales and service occupations; the "all other" employer category is weak in those from this family background. Those whose fathers were in the labor categories occur more frequently in business employment, less frquently in the "all other employers" category.

Chapter 5

JOB MOBILITY AND FIELD CHANGES

Geographic migration was described in Chapter 1. Migration can occur in other dimensions, also. For example, one can move from one discipline to another or from one category of employer to another, or simply to a different job in the same field and for the same type of employer. The amount of job-changing is a function of many factors, including the level of demand in a given field, and hence the number of opportunities, the amount of satisfaction one experiences on the job, the traditions and customs of a given field or category of employment, as well as many personal factors. In this chapter, the gross amount of job-changing will be examined first, then the relation of job-changing to graduation cohort and time period, and finally the amount of changing from one discipline to another.

Job stability is a good base point from which to consider the various kinds of mobility. Table 23, below, gives the percentage of the total group and of each successive five-year cohort that did not change jobs within each five-year period following graduation. It may be observed that there are rather striking variations from one cohort to the next, but one general trend does hold: As expected, greater job stability is found as careers mature. Within each cohort, fewer moves are made in each successive five-year period than in the period preceding.

TABLE 23

Job Stability: Percentage of Doctorate-Holders with No Job Changes during Successive Five-Year Work Periods

Work Period	All Cohorts Combined	1935 Cohort	1940 Cohort	1945 Cohort	1950 Cohort	1955 Cohort
1936-1940	53.4	53.4				
1941-1945	47.9	55.7	41.0			
1946-1950	52.5	61.1	51.2	45.1		
1951-1955	70.0	80.6	75.2	71.8	54.8	
1956-1960	70.0	83.4	78.4	78.0	66.1	52.2

Table 23 provides data only on those who do not change. When we consider the number who change once, twice, or more often within a five-year period, a more detailed and useful picture and a more analytical view are provided. Table 24 gives this information--the numbers of people with 1, 2, 3, 4, and 5 or more job changes in each five-year period, and the percentage each of these job-change groups is of the total number of people in a given cohort for that period. In Table 24, those who did not provide information on number of job changes are omitted; the percentages given are only for those who, in each period, did supply the necessary data.

TABLE 24

Number and Percentage of Doctorate-Holders with Varying Numbers of Job Changes in Each Five-Year Period Following Graduation

Graduation Cohort	Total Group[a]	Number of Job Changes					
		0	1	2	3	4	5-9
		First Five-Year Period					
1935	1315	702	454	112	37	6	4
	100.0	53.4	34.5	8.5	2.8	.5	.4
1940	1555	638	594	223	76	18	6
	100.0	41.0	38.2	14.3	4.9	1.2	.4
1945	1259	568	489	149	46	5	2
	100.0	45.1	38.8	11.8	3.7	.4	.2
1950	1603	878	535	150	34	4	2
	100.0	54.8	33.4	9.4	2.1	.3	.1
1955	1887	985	625	200	66	9	2
	100.0	52.2	33.1	10.6	3.5	.5	.1
		Second Five-Year Period					
1935	1321	736	423	121	35	4	2
	100.0	55.7	32.0	9.2	2.7	.3	.2
1940	1564	801	573	151	34	4	1
	100.0	51.2	36.6	9.7	2.2	.3	.1
1945	1251	898	276	64	9	3	1
	100.0	71.8	22.1	5.1	.7	.2	.1
1950	1610	1064	437	90	18	1	
	100.0	66.1	27.1	5.6	1.1	.1	
		Third Five-Year Period					
1935	1313	802	399	95	13	3	1
	100.0	61.1	30.4	7.2	1.0	.2	.1
1940	1560	1173	310	65	10	2	
	100.0	75.2	19.9	4.2	.6	.1	
1945	1242	969	227	35	7	3	1
	100.0	78.0	18.3	2.8	.6	.2	.1
		Fourth Five-Year Period					
1935	1311	1057	208	41	3	2	
	100.0	80.6	15.9	3.1	.2	.2	
1940	1563	1225	276	52	9	1	
	100.0	78.4	17.7	3.3	.6	.1	
		Fifth Five-Year Period					
1935	1309	1091	185	26	6	1	
	100.0	83.4	14.1	2.0	.5	.1	

[a]Cases for which no data were available in a particular time period were ommitted in that period; this accounts for varying N's for a given cohort.

Individual rows may not sum to 100.0% because of rounding.

The first data column of Table 24 is, of course, identical with the information of Table 23, but arranged in a different fashion. The two tables together make possible the comparison of cohorts and work periods. As might be anticipated, the members of the 1940 cohort, who were maximally affected by World War II in the crucial early years of their careers, were the most mobile in the first five-year period, and even into the second five-year period following graduation. By the end of the first post-doctoral decade, however, the career perturbations induced by the war seem to have died out for this group. The job stability of the 1935 cohort appears also to have been affected by World War II, as the second five-year postdoctoral period for this group was scarcely more stable than the first. For this oldest cohort, too, the third period (the post-war years) shows far more changes than are found in the later cohorts at the corresponding stage in their careers. The final postwar effects appear to be manifested in the immediate post-doctoral experience of the 1945 graduation cohort; but in the second five-year period, this group is the most stable of all the cohorts here investigated.

There are field differences in job mobility not depicted in tables here. Job-changing was tabulated by field for each five-year period, and those most prone to move and those most prone to stay were noted. Among the fields high in job-changing, across all periods, were psychology, sociology, economics, and political science. Among the natural sciences, physics and mathematics were high in mobility, but not as high as the social sciences noted above. Fields with relatively few job changes in the five periods examined were botany, zoology, genetics, and the medical and agricultural sciences. History and geography were relatively stable within the social-science group, and chemistry among the physical sciences. All of the arts and professions group, including education, were inclined to have fewer job changes than the average of all fields. The remainder of the fields were mixed in trend, or hovered closely about the median in tendency to change jobs.

The overall job stability recorded by these doctorate-holders is rather surprising, with fewer than one change in five years as a median for all cohorts in all periods except during and immediately after World War II. It may be that there is a bias here, due to selective forgetting or overlooking of minor or short-term jobs; it is possible that actual mobility is considerably greater than that reported on the questionnaires. It would require very extensive and careful individual investigation to determine whether there is such a bias, however, and this is beyond the scope of the present investigation. But whether it exists or not, it seems probable that it would not affect the relative trends shown in the tables as to degrees of stability in the various periods, by the several cohorts, or among the fields of specialization.

Occupational mobility may be across lines of specialization, as well as from region to region or job to job. Field-switching was examined to determine its extent from field of doctorate to field of the job held at the end of 1962, by cohort. The first general overall picture, however, is best obtained by a look at what may be called field-retention rates for all cohorts combined. Table 25 shows the percentage of people who did <u>not</u> switch fields over this period.

TABLE 25

Field-Retention Rates from Doctorate to Present Job

Field of PhD	Percentage Remaining In Field	Field of PhD	Percentage Remaining In Field
Total, All Fields	75.8	Social Sciences	79.3
Basic Medical Sciences	66.6	Sociology	70.7
Physiology	51.5	Economics	72.4
Pharmacology	52.0	Political Science	76.1
Biochemistry	56.0	History-Geography	77.6
Microbiology	68.8	Mathematics	88.6
Other Bio-Sciences	60.9	Physical Sciences	91.2
Botany	44.9	Physics	77.2
Genetics	47.4	Chemistry	76.2
Zoology	46.7	Geo-sciences	89.8
Misc. Biology	40.8		
Medical Sciences	74.0	Engineering	87.6
		Languages & Literature	82.6
Agricultural Sciences	79.3	Arts and Humanities	69.8
Psychology	81.2	Professions	72.7
		Education	75.9

In Table 25, the summary fields, such as basic medical sciences, indicate shifts or failures to shift within these general fields, rather than the average of the subfields they include. Thus a person might shift from physiology to biochemistry and still remain within the basic medical sciences. He would be counted as shifting from physiology, but not from the basic-medical-sciences group. This accounts for the higher retention rates for the more inclusive groups than for the subfields. It can be seen by examing Table 25 that, within the medical-biological fields, the retention rates vary from a low of 40.8 per cent for the miscellaneous-biology field to a high of 74.0 per cent for the medical sciences. It is significant in this connection that, on the average, people in the latter field are older than the average of the biology fields at the time of the PhD; many of them have been in clinical practice. Some had prior MD degrees and a few had master's degrees in medicine also. Agricultural sciences, with its 79.3 per cent retention rate, is another field in which doctorate-holders are considerably older, and hence farther along in their careers at the time of the doctorate than is typical of the science fields. Within the biological fields, it appears that degree of specialization is an important factor in high retention rate. Thus, in spite of the narrowness of a field, the investment in specialized knowledge and skills seems to induce people to remain in their specialities; it appears easier, or at least more frequent, for people to move from a broad field such as botany than from a more specialized one such as microbiology.

Field-retention rates are higher in the social and physical sciences than in the bio-sciences. Two factors may help account for these differences. The social scientists are, on the average, older than the bio-scientists at the time of the doctorate. They may be thus farther along in their careers and hence less inclined to sacrifice the professional investment that field-shifting would require. For the physical scientists, it might well be that the growth of opportunities over the period covered by this report has been high and increasing, at least as compared with the opportunities in the biological sciences. It might be noted in this connection that a previous study comparing field of doctorate with field indicated in the National Register of Scientific and Technical Personnel (conducted within a limited number of fields) indicated that there is a general tendency to shift from the less prestigeous and less well-paid fields to those higher on the ladder of remuneration and prestige. The field-shifting here described may be interpreted in a similar fashion, as shown in more detail in Table 26, which indicates the fields to which people shifted who did not remain within their doctorate specialties.

In Table 26, field of doctorate is shown at the left, and field of present job is represented by the columns across the top of the table. Because of its width, this job-switching table has been divided into two sections. The first section gives detailed data within the biological field, and collapses the data for the other fields into a single column for the social sciences, one for the physical sciences, and one for all other fields. In the second section, the biological fields are collapsed into a single column, and detailed data are shown for the remaining fields. In both sections, the diagonal cells, which have been underlined, represent the field-retention data--those who have not changed fields.

Within the biological fields, the field-retention rate varies from a low of 40.8 per cent for the miscellaneous-biology field to a high of 74.0 per cent for the medical sciences. Other high-retention fields are microbiology and agriculture. Fields retaining fewer than 50.0 per cent are botany, genetics, and zoology. Among the non-biological fields, retention rates vary from a low of 69.8 per cent for the arts and humanities group to a high of 89.8 per cent for geological science and 88.6 per cent for mathematics. A high degree of specialization seems to be a positive factor for retention, particularly in the biological

TABLE 26

Field-Switching from Doctorate Degree to 1962 Job
Numbers of Cases, Total Group

Field of Doctorate	Physiology	Pharmacology	Biochem.	Micro.	Botany	Genetics	Zoology	Misc. Bio	Agriculture	Med. Sci.	Soc. Sci Tot	Phys Sci Tot	Arts & Prof.	Total
Physiology	275	20	29	8	2	2	18	21	28	96	1	17	16	533
Pharmacol.	2	79	2					3		40	1	21	4	152
Biochem.	22	22	383	17		5	1	10	47	41		115	21	684
Micro.	17	1	23	351	6	4	2	12	16	35		32	11	510
Botany	61	2	8	26	199	26	2	41	37	11		11	19	443
Genetics	9		3	3	7	73	2	9	39	3		1	5	154
Zoology	99	4	9	17	5	8	244	72	16	22		10	16	522
Misc. Bio	22	1	9	6	8	2	14	62	6	8	1	10	3	152
Agric.	14	1	14	3	12	14	6	4	387	5	10	41	22	533
Med. Sci.	11	7	6	10			3	4	1	188		17	7	254

	Bio-Sci Tot.	Psychology	Sociology	Economics	Pol. Sci.	Hist.-Geog.	Math	Physics	Chemistry	Geology	Engin.	Lang. & Lit.	Arts & Hum.	Prof.	Education	Total
Psychology	12	379	2		1	[illegible]	4		8		2	5		10	42	467
Sociology	6	13	314	4	8	16			8		1	4	11	35	24	444
Economics	4	3	1	315	6	2	8		3		1		1	76	15	435
Pol. Sci.	1		2	14	286	16			7			2		26	22	376
Hist.-Geog.		1		4	15	347		2	4	2		9	6	23	34	447
Math	4			1			404	4	4	1	20			4	14	456
Physics	12				2		11	335	14	5	44			6	5	434
Chemistry	32	1					2	12	374	5	32			26	7	491
Geology	6			1		2	6	5	3	387	10			4	7	431
Engin.	2	1					5	8	15	5	402			13	8	459
Lang. & Lit.	1	2			2	3	1		5		1	376	15	18	31	455
Arts & Hum.	5	6	4	1	3	3	3		3			28	263	31	27	377
Prof.	3	9	4	22	8	13	1		1			3	14	264	21	363
Education	5	30	4	2	1	5	9	2	5			8	7	17	299	394

fields. In all fields, age at doctorate seems to be a positive factor, as the fields with the highest retention rates have been found, in other studies, to be those with high average age at PhD. Whether this would hold for individuals is uncertain, but logical, and is supported by the evidence of field-switching for the three decade cohorts, shown in Appendix 15. In the appendix, the field arrangement is slightly different, but follows in general th of Table 26. However, both numbers of individuals and percentages are shown in the appendix, which gives the total field-switching for all cohorts combined, and for each one separately.

It would be of interest, in this connection, to compare the field-switching between the B.A. degree and the Ph.D. with that which occurs between the Ph.D. and later on-the-job experience. This might be done for fields in a statistical way, and also for individuals, to see whether those who switch between baccalaureate and doctorate level become stabilized, tend to switch back to the field of first choice, or move on to still different fields.

Chapter 6

WOMEN DOCTORATE-HOLDERS

The analyses up to this point have concerned doctorate-holders of both sexes; as the great majority of them are male, the data refer primarily to males. Because of the importance of women in the development of science and in teaching, it is necessary to make separate tabulations based on the data on women alone to be sure that issues on which sex differences may appear are examined for the direction and extent of such differences. Slightly over 1 in

TABLE 27

EMPLOYERS OF WOMEN DOCTORATE-HOLDERS

		PERCENT IN EACH EMPLOYER CATEGORY					
COHORT	FIELD	TOTAL NUMBER	TOTAL PERCENT	COLLEGE & UNIV	BUS, IND.	U.S. GOVT	ALL OTHER EMPLOYERS
ALL	TOTAL, ALL FIELDS	1053	99.9	65.5	3.8	7.0	23.6
COHORT 35-40	TOTAL, ALL FIELDS	330	100.0	57.6	3.3	6.7	32.4
	BIO-AG-MED, TOTAL	137	100.0	54.0	5.1	9.5	31.4
	BASIC MED. SCIENCES	78	100.0	51.3	6.4	12.8	29.5
	ALL OTHER BIO FIELDS	59	100.0	57.6	3.4	5.1	33.9
	PSYCHOLOGY	35	100.0	34.3	5.7	5.7	54.3
	SOCIAL SCIENCES	62	100.1	56.5		6.5	37.1
	M-P-E FIELDS	26	99.9	69.2	3.8	3.8	23.1
	ALL OTHER FIELDS	70	100.1	72.9	1.4	2.9	22.9
COHORT 45-50	TOTAL, ALL FIELDS	374	100.0	68.7	4.3	6.7	20.3
	BIO-AG-MED, TOTAL	146	99.9	67.1	4.1	6.8	21.9
	BASIC MED. SCIENCES	76	100.0	68.4	6.6	5.3	19.7
	ALL OTHER BIO FIELDS	70	100.0	65.7	1.4	8.6	24.3
	PSYCHOLOGY	37	100.0	56.8	8.1	5.4	29.7
	SOCIAL SCIENCES	59	100.0	67.8		6.8	25.4
	M-P-E FIELDS	31	100.0	64.5	16.1	9.7	9.7
	ALL OTHER FIELDS	101	100.0	77.2	2.0	5.9	14.9
COHORT 55-60	TOTAL, ALL FIELDS	349	99.9	69.6	3.7	7.7	18.9
	BIO-AG-MED, TOTAL	144	100.1	67.4	2.8	11.1	18.8
	BASIC MED. SCIENCES	87	100.0	71.3	3.4	9.2	16.1
	ALL OTHER BIO FIELDS	57	100.0	61.4	1.8	14.0	22.8
	PSYCHOLOGY	20	100.0	45.0	5.0	5.0	45.0
	SOCIAL SCIENCES	64	100.0	73.4	1.6	10.9	14.1
	M-P-E FIELDS	27	100.0	59.3	18.5	7.4	14.8
	ALL OTHER FIELDS	94	100.0	78.7	2.1	1.1	18.1

INDIVIDUAL ROWS MAY NOT SUM TO 100.0% BECAUSE OF ROUNDING.

10 of the doctorate-holders included in the present study were women. This approximates the proportion found in the total doctorate population from which the samples in the present study were drawn. While too few for analyses as elaborate as those employed with the entire group, the women are of sufficient importance in the general economic scheme to warrant special treatment. A number of studies have been made by various researchers of women in science, and a great deal of attention has been devoted to the problems of career development that are induced by the fact that a great many women doctorate-holders withdraw from the professional labor force during a period of child-rearing, and may or may not return later. The present chapter will be concerned with the employers of women doctorate-holders, the geographic migrations of this group, and with the distribution of their time among various on-the-job functions.

Employers of women doctorate-holders are shown in Table 27, with field break-outs condensed from those used in previous chapters to accumulate sufficiently large numbers for statistical reliabilty. As compared with men (see Chapter 1, Table 4 for total group, predominently male), the women are concentrated more heavily in college and university jobs, and, for the oldest cohort, in the "all other" employer category. They are found in business and industrial employment only rarely, as compared with men. The field distribution accounts for these differences in large part, as women are more numerous in biology, and less so in the physical sciences than men.

Geographic Location and Migration

Geographic migration for unmarried women PhD's is presumably relatively free, as compared with that for their married colleagues, who, regardless of their educational status, tend to migrate according to the requirements of their husbands' jobs. For this reason, the tabluations that follow will present data separately for the single women and for those who were married at the time of the questionnaire, or had at any time been married. Table 28 shows the geographic location of these two groups, and for reference purposes, of the total group (predominantly male) at three career stages. The data are percentages of each group in each geographic region at each career stage. The regions used are the nine census regions; these have also been grouped into the five general areas described in Chapter 1: New England, Middle Atlantic, Midwest, South, and West.

Examination of the three columns for the groups based on sex and marital status indicates that there are important regional differences. Some regions (New England, East and West South Central regions, and Pacific states) are relatively low in production of women doctorates; other regions (Middle and South Atlantic) are higher than average in this respect. When marital status differences for the women are examined, it is to be observed that New England and the South Central states are particularly low in percentage of women doctorate-holders who remain single; the Middle Atlantic, South Atlantic, and West North Central regions are high in this category. The reasons for these latter variations need further examination.

Migration from region of doctorate to region of immediate postdoctoral job and eventually to present job may be looked at in terms of the percentage change induced by the migration. This is done in Table 29, in which the number of doctorate-holders in each of the regions of later jobs is expressed as a percentage of the number obtaining their doctorates in the same region. Thus, if a region loses from doctorate to first job, its percentage will be less than 100.0 per cent; if it gains, the percentage will be over 100.0 per cent. The further net change to the time of present job is indicated in the third section of Table 29. The first section, which gives numbers of persons attaining doctorates in each region, of course always represents 100 per cent for each region and doctorate category.

TABLE 28

Regional Distribution of Doctorate-Holders at Three Career Stages; Total of Men + Women, Married Women, and Single Women

Geographic Region	Region of Doctorate			Region of First Postdoctoral Job			Region of Present Job		
	All PhD's	Women		All PhD's	Women		All PhD's	Women	
		Marr.	Single		Marr.	Single		Marr.	Single
New England	13.1	12.3	7.3	8.6	10.0	8.1	7.3	8.3	6.9
Middle Atlantic	22.2	27.1	25.9	20.1	23.7	22.1	19.7	24.5	23.1
East N. Central	28.9	28.3	28.7	19.0	18.3	22.5	17.8	17.4	19.5
West N. Central	11.5	8.1	13.9	8.6	6.2	10.7	7.2	4.1	9.6
Midwest	40.4	36.4	42.6	27.6	24.5	33.2	25.0	21.5	29.1
South Atlantic	8.4	8.6	12.6	13.4	12.3	11.1	15.3	16.2	14.3
E. South Central	1.1	1.2	.6	3.6	2.6	2.8	3.2	1.7	2.1
W. South Central	2.8	3.1	1.5	6.2	5.4	5.8	5.6	4.3	4.9
South	12.2	12.9	14.7	23.2	20.3	19.7	24.1	22.2	21.3
Mountain	1.3	1.7	.6	4.2	2.6	3.4	4.2	2.4	2.4
Pacific	10.8	9.5	8.8	10.6	9.8	8.6	14.1	13.6	12.4
West	12.1	11.2	9.4	14.8	12.4	12.0	18.3	16.0	14.8

In general, the net migration percentages for the married women are closer to the data for all PhD's (predominantly men) than are the percentages for single women. The variations by sex, ignoring marital status, are also of interest. New England loses a smaller percentage of women than of men; the South gains fewer. The West gains more single women but fewer married women. A reasonable hypothesis here would be that married women, whether they hold doctorates or not, tend to migrate according to their husbands' occupational opportunities rather than their own, whereas the single women migrate according to job opportunities for themselves--primarily in teaching. A subsequent section of this report indicates that single women spend their professional time primarily in teaching. The best opportunities in teaching for women doctorate-holders might well be expected to be in the Northeast and in California. The combination of these two factors, teaching opportunities for single women and husband-conditioned migration for married women, would go far toward explaining the geographic flows indicated in Table 29.

TABLE 29

Net Change in Doctorate Population by Geographic Area as a Result of Migration from Region of Doctorate to Subsequent Jobs

Region of Doctorate	Number of Doctorates Granted Per Region			Net Percentage Change Due to Migration					
				First Postdoctoral Job			Present Job		
	All PhD's	Women		All PhD's	Women		All PhD's	Women	
		Marr.	Single		Marr.	Single		Marr.	Single
New England	1316	58	38	65.6	81.3	110.0	55.7	67.5	94.5
Mid. Atlantic	2220	137	103	90.5	87.5	85.3	88.7	90.4	89.2
Midwest	4045	142	155	68.3	67.3	78.4	61.9	59.1	68.3
South	1222	117	92	190.2	157.4	134.0	197.5	172.1	144.9
West	1214	72	56	122.3	110.7	127.7	151.2	143.9	157.4

A third look at geographic migration for women doctorate-holders is afforded by consideration of the percentage of married and of single women who stay in the same region from doctorate to first postdoctoral job, and then from first postdoctoral job to present job, by decade of doctorate. This information is provided by Table 30, for the nine census regions of the United States. Data are given for each region for the combination of all three decade cohorts; in the separate decades, the data are not broken out for those regions in which the numbers are too small to justify comparisons; this includes the foreign region for the first postdoctoral-to-present job move.

The data of Table 30 indicate that the number remaining in a given region from doctorate to first postdoctoral job, or from first to present job is far from accounting adequately for the net-migration data--the "movers" are nearly as numerous as the "stayers." As between married and single women, there is no marked trend on the first move following the doctorate; with regard to migration from first to present job, the single women are far more stable--another indication that their jobs may be holding them, whereas the married women move with their husbands, for whom job opportunities are probably more frequent, and for whom interregional moves are known to be more frequent.

TABLE 30

Percentage of Women Remaining in Each Geographic Region at Two Career Choice Points, by Decade Cohort

Region of Doctorate	All Cohorts		Cohort 1935-40		Cohort 1945-50		Cohort 1955-60	
	Marr.	Single	Marr.	Single	Marr.	Single	Marr.	Single
	Doctorate to First Postdoctoral Job							
New England	47	44	29	55	50	40	58	38
Middle Atlantic	62	50	66	64	58	42	61	43
East N. Central	43	51	27	51	45	60	56	40
West N. Central	28	43	23	58	36	36	17	32
South Atlantic	54	36	30	32	52	40	71	36
East S. Central	57	67	-	-	-	-	-	-
West S. Central	89	71	-	-	-	-	-	-
Mountain	50	67	-	-	-	-	-	-
Pacific	66	68	62	67	60	82	73	60
	First Postdoctoral to Present Job							
New England	53	42	50	10	40	47	74	64
Middle Atlantic	71	70	67	59	70	70	80	81
East N. Central	54	65	57	67	48	68	58	57
West N. Central	36	58	40	38	27	67	46	79
South Atlantic	73	75	60	87	71	87	87	59
East S. Central	27	46	-	-	-	-	-	-
West S. Central	58	59	-	-	-	-	-	-
Mountain	47	31	-	-	-	-	-	-
Pacific	70	83	64	92	77	78	67	77
Foreign	71	85	-	-	-	-	-	-

On-The-Job Functions

In the labor force as a whole, there are marked functional differences between the work performed by men and by women. In the field of business, there are few women executives; in school teaching. women predominate in the elementary grades, but less so in secondary school, while at the college level men teachers predominate. The question of interest in the present study is whether women doctorate-holders perform markedly different on-the-job functions than men, and whether, among the women, there are differences related to marital status. The data of primary relevance in relation to this question are found in Table 31. In this table, the data for the whole doctorate population (predominantly men) are presented in parentheses for purposes of comparison. Data for the women who are, or have been, married are presented separately from those for the single women doctorate-holders; and for all of these groups, the three decade cohorts are shown separately. The top portion of Table 31 presents data regarding teaching, the middle portion regarding research, and the bottom portion regarding administration. In each section, the doctorate-holders are divided into those with no time spent on the given function, some time (10-29 per cent), a moderate portion (30-49 per cent), much time (50-89 per cent), or practically full time (90-100 per cent). These are the same time distribution categories as used regarding all doctorates in Chapter 2.

The primary comparison in time distribution is between the total group, which is chiefly men, and the women. The top portion of Table 31 shows that women doctorate-holders spend considerably more time in teaching than do men. Fewer in each cohort have no teaching responsibilities or only minor teaching loads. More have heavy teaching loads; from two to three times as high a proportion spend practically full time teaching.

The sex differences are not as marked with respect to research as they are with respect to teaching, but they are clear, nevertheless. Proportionately more women do no research, but more also devote full time to research; fewer spend a moderate amount of their time on research. This peculiarity of time distribution may be accounted for on two bases: men are more heavily engaged in administration, and more men are in academic situations in which they can combine teaching and research. It seems probable that a number of the women who are engaged full or almost full time in research are working in laboratories under the direction of others, rather than directing their own research programs. Although the data here do not directly indicate that this is the case, general observation tends to bear out this hypothesis.

The disparity in administration between men and women is most striking. More men, proportionately (by a factor ranging from 2 to 5) are heavily engaged in administration, and a much smaller proportion of men are entirely free of administrative responsibilities.

The variation in functions from cohort to cohort is particularly informative, and it is here that the differences between the married and the single women come into prominence. The single women, presumably because of their more consistent professional careers, get farther up the administrative ladder than do the married women, more than half of whom do no administrative work at all. The latter proportion is highest in the oldest cohort, quite opposite to the trend of the men and the single women. Even the spinsters, however, have less administrative work than the men; only 4 per cent of each group have full-time administrative duties in the youngest cohort, while in the oldest cohort this is only increased to 6 per cent. By contrast, for the total group (mostly men) the proportion is 15 per cent. At the level where a major portion (50-89 per cent) of time is devoted to administration, the percentages are essentially equal for men and single women in the youngest cohort; in the oldest cohort, the difference is two-to-one. For the married women, the percentages with heavy administrative responsibilities are consistently smaller than for the single women. It seems probable that what is happening here is that the career disruption for child-rearing has had a pronounced effect on functions performed when the married women return to professional work. They have returned to professional jobs that tend to be either teaching

TABLE 31

Time Distribution among Teaching, Research, and Administrative Functions for All Doctorate-Holders, Single Women, and Married Women, by Cohort

Cohort	Marital Status & Sex	Total Group Number	Total Group Per cent	Amount of Time Spent on Each Function: None	Some*	Mod.*	Much*	Full*
				TEACHING				
1935-1940	ALL, M + F	--	100	(39)	(15)	(16)	(22)	(8)
	Single F	131	100	27	9	9	37	18
	Married F	141	100	31	10	11	19	29
1945-1950	ALL, M + F	--	100	(33)	(17)	(19)	(24)	(7)
	Single F	149	100	20	13	13	39	15
	Married F	190	100	32	11	9	23	25
1955-1960	ALL, M + F	--	100	(33)	(16)	(18)	(27)	(7)
	Single F	146	100	20	14	17	38	11
	Married F	174	100	38	12	9	22	19
				RESEARCH				
1935-1940	ALL, M + F	--	100	(34)	(22)	(19)	(17)	(8)
	Single F	131	100	44	24	18	5	9
	Married F	141	100	52	11	7	17	13
1945-1950	ALL, M + F	--	100	(25)	(24)	(20)	(22)	(9)
	Single F	149	100	35	30	11	12	12
	Married F	190	100	43	14	12	16	15
1955-1960	ALL, M + F	--	100	(16)	(20)	(18)	(27)	(19)
	Single F	146	100	35	26	14	12	13
	Married F	174	100	24	24	5	16	31
				ADMINISTRATION				
1935-1940	ALL, M + F	--	100	(33)	(21)	(14)	(18)	(15)
	Single F	131	100	47	30	8	9	6
	Married F	141	100	72	9	8	8	3
1945-1950	ALL, M + F	--	100	(35)	(26)	(13)	(16)	(11)
	Single F	149	100	52	23	10	10	5
	Married F	190	100	63	21	4	7	5
1955-1960	ALL, M + F	--	100	(50)	(29)	(10)	(8)	(4)
	Single F	146	100	51	29	9	7	4
	Married F	174	100	68	21	5	5	1

* Some = 10%-29%; Moderate = 30%-49%; Much = 50%-89%; Full = 90%-100%
Percentages may not add to 100% because of rounding.

TABLE 32

Interrelations of Teaching, Research, and Administration on Present Job
Women Doctorate-Holders, by Decade Cohorts

Reference Category	Cohort	Total Cases		Percentage of Cases in Each Category of Research Activity									
				None		Some*		Mod.*		Much*		Full*	
		Single	Marr.	Single	Marr.	Single	Marr.	Single	Marr.	Single	Marr.	Single	Marr.
Teaching Activity													
Total Group	35-40	131	141	44	52	24	11	18	7	5	17	9	13
	45-50	149	190	35	43	30	14	11	12	12	16	12	15
	55-60	146	174	35	24	26	24	14	5	12	16	13	31
None	35-40	35	43	54	42	11	7	6	2	3	9	26	40
	45-50	30	61	33	28	3	12	7	3	7	16	50	41
	55-60	29	66	28	9	7	3	-	2	10	12	55	74
Some*	35-40	11	15	9	20	46	27	42	13	18	33	27	7
	45-50	19	20	16	25	37	20	11	-	21	40	16	15
	55-60	20	21	35	10	20	29	5	10	25	29	15	24
Mod.*	35-40	12	16	25	38	25	6	33	13	8	44		
	45-50	20	18	25	22	25	-	5	39	45	39		
	55-60	25	15	20	7	20	33	32	7	28	53		
Much*	35-40	49	26	31	42	33	8	-	19	2	31		
	45-50	58	44	28	25	47	32	21	30	5	14		
	55-60	56	39	30	15	45	54	20	13	5	18		
Full*	35-40	24	41	83	85	17	14						
	45-50	22	47	82	96	18	4						
	55-60	16	33	88	79	12	21						
				Administrative Activity									
Research Activity													
Total Group	35-40	131	141	47	72	30	9	3	8	9	8	6	3
	45-50	149	190	52	63	23	21	10	4	10	7	5	5
	55-60	146	174	51	68	29	21	9	5	7	5	4	1
None	35-40	44	52	52	72	17	7	10	6	9	10	12	6
	45-50	35	43	52	71	12	12	6	2	17	5	14	10
	55-60	35	24	45	76	20	7	8	5	18	7	10	5
Some*	35-40	24	11	28	56	44	6	6	12	19	25	3	-
	45-50	30	14	36	37	32	41	18	7	14	7	-	7
	55-60	26	24	26	49	53	39	16	7	3	5	3	-
Mod.*	35-40	18	7	30	50	57	10	9	40	4	-		
	45-50	11	12	41	45	41	36	18	9	-	9		
	55-60	14	5	50	44	35	22	15	22	-	11		
Much*	35-40	5	17	67	75	33	21	-	4	-	-		
	45-50	12	16	61	48	33	29	6	7	-	16		
	55-60	12	16	67	48	28	41	6	3	-	7		
Full*	35-40	9	13	100	94	-	6						
	45-50	12	15	94	92	6	7						
	55-60	13	31	100	92	-	7						

* Definitions of Categories of Time Spent In Each Function:
Some = 10%-29% Moderate = 30%-49% Much = 50%-89% Full = 90%-100%

or research, but less frequently the balanced combination of teaching, research, and administration that is more characteristic of the men and of those women whose professional careers have been uninterrupted. Table 32 shows some of the interrelations of teaching, research, and administration for the women doctorate-holders, by decade cohort and marital status. In the oldest cohort in Table 32, a substantial number of single women spend over 50 per cent of their time in teaching, but also up to 40 per cent of their time in research. This "balanced load" group is markedly thinned in the married women's tabulation, with a much higher concentration in the 50 to 100 per cent range in research functions. In the bottom portion of Table 32, it may be noted that, for almost every group sorted by time spent on research, the married group is higher in the "no research" category, and the single group generally higher in the categories spending "much" or "full" time in administration.

For a more detailed analysis of the process by which the distribution of time among various functions came about, the women bio-scientists were selected for a more intensive study of the relation between the first postdoctoral job and the present job. The results will be summarized verbally; the tables are not reproduced in this report.

There was a sizeable group of married women who did no teaching on the first postdoctoral job, but who were engaged almost exclusively in research. Most of this group are now devoting practically full time to research. For the single women, this tends also to be true, although not so strongly; more of the single group are doing a moderate amount of research combined with teaching. There is thus a greater polarization of function for the married women, to some extent indicated in the first postdoctoral job, but more pronounced on the present job. To illustrate, there were 70 married women who, on their first postdoctoral jobs, did no research or only a minor amount (20 per cent or less time). Of these 70, there are now 37 who devote 50 to 100 per cent of their time to teaching, and 21 who do no teaching. There were also 70 married women who did research 90 to 100 per cent of the time. Of the latter group, 22 are now teaching 50 to 100 per cent; 47 do no teaching. There were 67 single women who were devoting 90 to 100 per cent of their time to research on their first jobs; 31 of these do no teaching now, while 14 have heavy teaching loads.

Chapter 7

EARNINGS OF DOCTORATE-HOLDERS

Graduate education can hardly be evaluated on the basis of the increased earning power of those who have acquired this training, but their earnings are nevertheless a matter of great moment, not only to the individuals involved, but also to those who are concerned with manpower problems generally. For a great many, if not most of the doctorate-holders, the motivation for their advanced study was no doubt more intellectual than monetary. And yet when economic differentials become large, they can be important in influencing or even determining manpower flows. The final chapter of this report will therefore briefly describe the earnings of the people included in this study, by graduation cohorts, by fields of specialization, and by the types of functions performed on the job.

Table 33, in two parts on the next two pages, provides the basic information on present earnings. More detailed data, by subfields and by five-year graduation cohorts, are to be found in Appendix 17. The data of Table 33 and Appendix 17 are geometric means of salaries. The geometric mean is the mean of the common logarithms of the dollar values, and here is re-converted from the logarithm to the antilog, and thus back to the dollar scale. The geometric mean was used, rather than the arithmetic mean, as it reduces the influence of the extreme values, and converts the salary scale to one that yields a more nearly normal distribution than does the original scale value of dollars. The resulting values should be rather close to what would have been found if medians had been used, but have the advantage of being more readily dealt with by computer techniques. In addition, the geometric mean includes the influence of all the cases in the group, but with a moderating influence on the extremes. In brief, these values are probably as representative a statistic as it is possible to provide with data such as salaries.

Table 33 is set up to reflect the different functions performed by the doctorate-holders in the several fields. Part 1 of Table 33 includes four groups: those who divide their time equally between research and teaching; those who devote their time primarily to teaching; those who primarily do administration; and those primarily concerned with research. Part 2 of Table 33 includes the small group of people who divide their time equally between research and administration; the still smaller group who spend half time in teaching and half in administration; a rather large group whose functions are mixed in ways other than the six groups already described; and finally, a group for whom on-the-job functions were not known. The fields are those that have been used extensively heretofore in this report; the cohorts are the familiar decade groups.

One of the most striking differences in salaries shown in Table 33 concerns on-the-job function. Across almost all fields and cohorts, those who are spending most time in teaching are receiving the least pay; the administrators are receiving the highest pay. The various functional groups may readily be compared on a percentage differential basis, with the "teacher" group as the reference point of 100. The other groups, in ascending order of relative pay are as follows: (a) the teacher-researchers, 111; (b) the researchers, 118; (c) the teacher-administrators, 125; (d) the "unknown's", 132; (e) the mixed group, 134; (f) the researcher-administrators, 159; and finally (g) the administrators, 162. Although there are some variations, this hierarchy tends to hold across all cohorts and all fields.

Field differences are marked also, but these tend to be confounded by the function differentials; an administrator in the "all other fields" category, for example, may be a dean in a small liberal arts college; and administrator in engineering is likely to be in charge of an expensive and commercially important installation. A result of this is that the field differential between engineering and "all other fields" is small in teaching (23 per cent) but large in administration (70 per cent), to choose just one example from the oldest cohort. For this reason, it is important in making field comparisons to keep in mind both functional and cohort variations. Yet, for

TABLE 33, Part A
Geometric Mean of Salaries on Present Job, by
Major Function Performed, Fields, and Cohorts

		Teaching 50% Research 50%		Teaching 50% or More		Admin. 50% or More		Research 50% or More	
COHORT	FIELD	NO.	MEAN	NO.	MEAN	NO.	MEAN	NO.	MEAN
ALL	TOTAL, ALL FIELDS	318	$11,167	2258	$10,021	1542	$16,281	2464	$11,832
COHORT 35-40	TOTAL, ALL FIELDS	74	12,357	578	11,154	633	18,136	439	14,405
	BIO-SCIENCES, TOTAL	27	10,435	139	9,852	198	17,734	213	13,393
	BASIC MED. SCIENCES	11	8,691	68	10,405	121	18,155	135	14,210
	OTHER BIO-SCIENCES	16	11,832	71	9,349	77	17,096	78	12,089
	MEDICAL SCIENCES			4	13,884	14	17,580	3	14,679
	AGRIC. SCIENCES	6	10,392	9	10,910	41	16,587	34	13,344
	PSYCHOLOGY	3	15,728	23	11,378	31	17,612	14	10,787
	SOCIAL SCIENCES	13	11,749	141	12,131	83	17,171	51	16,671
	MATHEMATICS	2	17,580	37	12,160	34	20,739	14	19,661
	PHYSICAL SCIENCES	5	13,740	64	10,742	107	20,306	74	16,252
	ENGINEERING	5	22,081	11	13,804	43	25,000	12	15,910
	ALL OTHER FIELDS	13	13,756	150	11,240	82	14,832	24	14,468
COHORT 45-50	TOTAL, ALL FIELDS	82	12,855	642	10,562	562	16,080	611	13,814
	BIO-SCIENCES, TOTAL	28	9,975	136	9,870	116	15,684	250	12,789
	BASIC MED. SCIENCES	13	10,125	52	10,644	69	16,440	145	13,264
	OTHER BIO-SCIENCES	15	9,847	84	9,419	47	14,641	105	12,162
	MEDICAL SCIENCES	3	15,606	4	5,219	14	17,726	12	18,164
	AGRIC. SCIENCES	7	11,445	17	11,717	34	15,657	64	12,687
	PSYCHOLOGY	4	16,691	30	12,656	30	16,218	27	13,721
	SOCIAL SCIENCES	13	17,254	180	10,565	88	14,538	55	14,239
	MATHEMATICS	8	18,621	38	11,419	17	18,273	29	19,544
	PHYSICAL SCIENCES	8	15,401	55	10,927	109	18,686	117	15,087
	ENGINEERING	2	13,031	11	11,577	44	20,003	22	17,271
	ALL OTHER FIELDS	9	10,337	171	10,500	110	13,759	35	11,858
COHORT 55-60	TOTAL, ALL FIELDS	162	9,929	1038	9,140	347	13,648	1414	10,415
	BIO-SCIENCES, TOTAL	59	9,501	254	8,670	75	12,963	763	9,759
	BASIC MED. SCIENCES	40	9,661	110	8,640	49	13,344	503	10,163
	OTHER BIO-SCIENCES	19	9,164	144	8,693	26	12,269	260	9,020
	MEDICAL SCIENCES	2	11,885	19	10,766	19	16,555	28	11,220
	AGRIC. SCIENCES	8	9,661	26	9,433	15	13,592	110	10,157
	PSYCHOLOGY	4	9,718	23	9,932	10	17,179	34	10,869
	SOCIAL SCIENCES	34	10,130	276	9,228	62	13,264	115	10,959
	MATHEMATICS	14	10,048	65	10,053	12	16,062	61	13,151
	PHYSICA SCIENCES	20	10,081	74	9,392	43	14,362	208	11,751
	ENGINEERING	8	11,220	24	10,892	18	14,942	51	13,532
	ALL OTHER FIELDS	13	10,251	277	8,892	93	12,787	44	8,348

TABLE 33, Part B
Geometric Mean of Salaries on Present Job, by
Major Function Performed, Fields, and Cohorts

		Admin. 50% Research 50%		Teaching 50% Admin. 50%		All Others		Function Unknown	
COHORT	FIELD	NO.	MEAN	NO.	MEAN	NO.	MEAN	NO.	MEAN
ALL	TOTAL, ALL FIELDS	176	$15,922	74	$12,569	1502	$13,467	451	$13,236
COHORT 35-40	TOTAL, ALL FIELDS	62	18,389	30	13,582	473	15,682	164	14,649
	BIO-SCIENCES, TOTAL	16	16,789	8	13,647	134	15,882	39	14,662
	BASIC MED. SCIENCES	12	15,728	1	18,198	86	16,322	27	17,230
	OTHER BIO-SCIENCES	4	20,418	7	13,095	48	15,121	12	10,193
	MEDICAL SCIENCES	2	13,645			20	17,319	3	7,763
	AGRIC. SCIENCES	4	13,259			29	12,580	7	18,621
	PSYCHOLOGY	2	23,715	1	7,079	41	16,505	4	10,292
	SOCIAL SCIENCES	6	18,980	9	13,945	74	16,015	30	13,122
	MATHEMATICS	4	18,729	3	13,592	14	18,077	3	21,543
	PHYSICAL SCIENCES	20	18,925	2	17,378	66	18,376	30	17,632
	ENGINEERING	4	18,837	2	19,055	23	20,727	13	19,638
	ALL OTHER FIELDS	4	29,684	5	11,589	72	11,920	35	12,474
COHORT 45-50	TOTAL, ALL FIELDS	62	15,657	21	12,452	479	14,568	142	14,596
	BIO-SCIENCES, TOTAL	20	13,980	1	11,749	95	12,532	26	15,213
	BASIC MED. SCIENCES	13	14,302			51	13,843	20	15,668
	OTHER BIO-SCIENCES	7	13,400	1	11,749	44	11,169	6	13,804
	MEDICAL SCIENCES	3	17,919			16	23,647	1	30,201
	AGRIC. SCIENCES	2	16,406			24	12,152	5	16,826
	PSYCHOLOGY	4	13,182	2	14,125	54	13,517	6	8,980
	SOCIAL SCIENCES	7	15,386	5	11,429	88	14,956	36	15,108
	MATHEMATICS	2	20,893	1	10,965	20	18,948	7	13,356
	PHYSICAL SCIENCES	20	16,904	1	14,455	65	16,455	28	18,668
	ENGINEERING	2	17,783	1	12,023	34	19,330	8	16,033
	ALL OTHER FIELDS	2	17,378	10	12,764	83	12,894	25	10,647
COHORT 55-60	TOTAL, ALL FIELDS	52	13,683	23	11,456	550	11,030	145	10,730
	BIO-SCIENCES, TOTAL	23	12,552	3	9,924	152	10,263	35	8,134
	BASIC MED. SCIENCES	18	12,638	2	9,333	92	10,538	23	8,261
	OTHER BIO-SCIENCES	5	12,247	1	11,220	60	9,852	12	7,899
	MEDICAL SCIENCES	2	13,489			20	14,555	8	15,668
	AGRIC. SCIENCES	4	13,259			27	10,779	7	11,482
	PSYCHOLOGY	2	13,645			66	11,993	7	12,924
	SOCIAL SCIENCES	4	11,955	11	10,536	100	11,041	25	12,190
	MATHEMATICS	1	19,055	2	12,303	25	13,957	5	12,023
	PHYSICAL SCIENCES	12	15,516	1	13,804	31	12,031	25	11,770
	ENGINEERING	3	18,481	1	15,849	22	16,270	8	16,885
	ALL OTHER FIELDS	1	12,882	5	13,182	107	9,439	25	8,856

a first general picture, Table 34 is offered to show the salaries by field, at the time of the first postdoctoral job and present job, combining all cohorts and functional categories. The fields are the 24 subfields, without summary into the grosser groupings.

TABLE 34

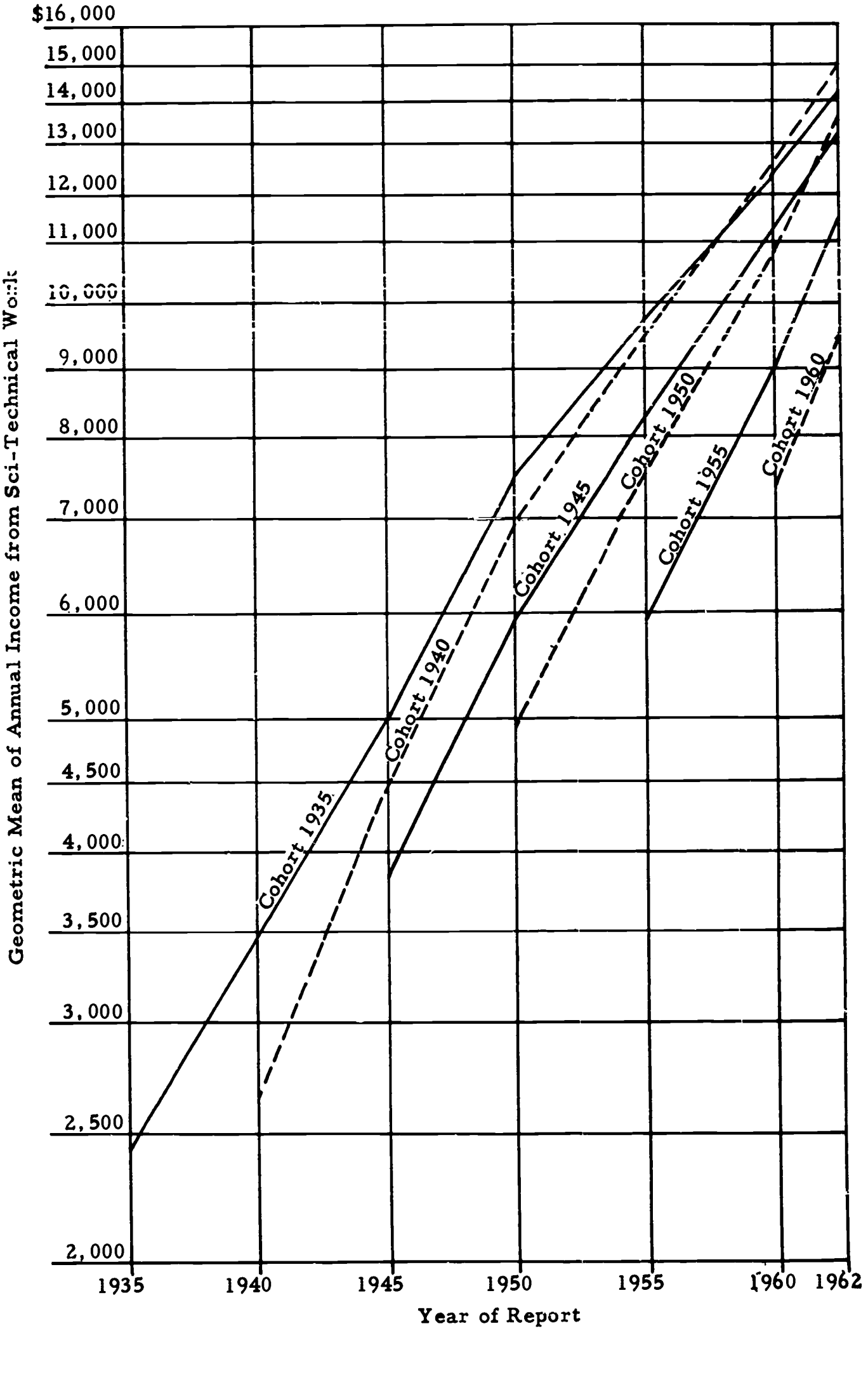
Geometric Mean of First Postdoctoral and Present Salaries by Field of Doctorate

Field of Doctorate	First Post-Doctoral Salary	Present Salary	Field of Doctorate	First Post-Doctoral Salary	Present Salary
Physiology	$ 4375	$ 12,050	Economics	$ 4720	$ 14,280
Pharmacology	4755	13,850	Political Science	4390	12,870
Biochemistry	4595	11,850	History-Geography	3845	10,680
Microbiology	4595	11,650	Mathematics	4325	14,170
Botany	4030	10,590	Physics	4410	15,860
Genetics	4470	10,880	Chemistry	4670	14,660
Zoology	3850	10,480	Geology	4265	12,890
Miscellaneous	5270	11,430	Engineering	4810	16,970
Agricultural Sciences	4370	12,180	Languages and Literature	3630	10,210
Medical Sciences	6015	14,860	Arts and Humanities	3745	10,510
Psychology	4300	13,200	Professions	4950	11,690
Sociology	4190	11,340	Education	5540	12,020

When all fields are combined, and the growth curves of salary are plotted for each cohort separately, an interesting phenomenon emerges, which is best seen in Figure 11. The ordinate of this chart is in logarithmic form; this permits a direct examination of growth rates. On semi-logarithmic paper, which this is in effect, a given percentage growth rate is shown by a straight line whose slope is proportional to the rate of growth. It can be seen in Figure 11 that the steepest growth rates are shown for the youngest cohorts. The growth from first job to the next five-year interval becomes progressively steeper with the successive five-year cohorts shown in Figure 11. The other phenomenon of interest here is that the 1935 and 1945 cohorts seem to be reaching a ceiling, and, in the latest periods, are being surpassed by the cohorts next following them. Although the differences here are small and might possibly be reversed in a more extended data series, it seems probable from the shape of the growth curves that some such overlapping process is actually being manifested here.

Figure 11

Geometric Means of Salaries, by Cohort
All Fields Combined



Conclusions

This is the initial report of a long-term and intensive study of the career patterns of carefully-selected samples of doctorate-holders totaling 10,000 people in several fields, with emphasis on the health-related sciences. The graduates of six sample periods were analyzed separately, the six periods being combined into three for many of the tables. Studies were made of the employer categories, the geographic spread and postdoctoral migration of these groups and their on-the-job functions. The sources of support for graduate education that these people enjoyed, and the sources of support for their present research activities were tabulated. A minor portion had postdoctoral training; the duration of this training, and sources of support for it are described. The social origins of the doctorate-holders, and changes in these sources over a quarter of a century are examined in some detail. The possible relation of such sources to present employment was examined; no significant relationships were discovered. Mobility (geographic, occupational, and by field of specialization) was analyzed. Women as a special group were studied for factors related to their career patterns. Earnings of doctorate-holders, by field, by function on the job, and by graduation cohort, were tabulated. In regard to each of these factors, text tables present the data by more inclusive groupings; appendix tables provide fine detail.

A brief summary of the major findings is given at the beginning of this report. Some of the major conclusions with respect to the present investigation and the indications it offers for answers to manpower questions, as well as needed further research, are described below.

The present report represents the highlights of the first phase of an extensive study. The next phases of this study conducted under contract with the National Institutes of Health will utilize data already stored on tape, examining in greater depth interrelationships too complex for the summary report, but of program significance for NIH. It will also compare data on the six cohorts included in the Career Patterns Study with summary data from the Doctorate Records File of recent PhD's awarded during 1961 to 1965, inclusive.

An example, only one among many possible, will illustrate the additional detail that might well be elicited by further study of one aspect of the data: geographic migration. Such a further study might well involve, in addition to the questionnaire data, information regarding the baccalaureate origins in relation to the institutions of doctorate of the entire doctorate population from which the present cases were drawn. This would not only serve to indicate bias in selection or in questionnaire returns, if such bias exists, but would form a larger context within which to interpret the data. Going further, geographic migration might well be studied by field of doctorate, rather than for the whole doctorate population, as is might be found that scientists and humanists have quite different directions and rates of migratory flow--perhaps even counteracting each other. Further, it seems quite probable that migration patterns vary systematically from one time period to another, by field, in ways that would be important to agencies concerned with the development of training programs and new centers of excellence. This single example has been expanded upon only for purposes of illustration; any of a number of aspects of the data here collected might, with equal value, be intensively studied.

A few additional brief examples might be cited of studies beyond the scope of the present report that might well repay further effort: Employer categories, on-the-job functions, job-changing and field-switching, which could be studied jointly. Cross-tabulations of fields and postdoctoral fellowships in relation to later employer category and job function, perhaps also with a geographic break-out, would be another example. A more extended study of the characteristics of those who switch from one field to another, and their subsequent careers should be very revealing. Are there in the data here at hand statistical clues as to the reasons why such switches were made, or correlates of the changes that were made?

An additional source of information, here used only occasionally, could be brought to bear much more systematically: the accumulated information of the Bureau of the Census. Information from census sources can furnish a normative reference frame within which the data regarding doctorate-holders may become much more meaningful. Without further data collection, and using only the information routinely assembled in the Office of Scientific Personnel in recent years, additional information

of a "normative" type may be derived, regarding social origins and family background of those who have earned doctorates since 1960, the cut-off date for the current study. Another example of an existing data bank concerns the high school backgrounds of recent doctorate-holders, now being studied with the support of the National Science Foundation. In the questionnaire for the present study, information regarding high school of origin was collected. The two sources of information could be related in a highly functional manner, each contributing to the significance of data from the other source. For example, are the high schools that now produce many eventual doctorate-holders the same ones which, in an earlier generation were high producers? What changes have occurred over 30 years in this respect?

The above suggestions as to possible lines of valuable additional research point out a real problem: the very number of possible studies is so great as to require careful thought as to those most worthy of exploration in the next phase of research. The answer must lie in consideration both of data needs for administrative decisions and in the scientific value of the information itself, as a substantive field of knowledge that might be called the sociology of high-level scholarship.

APPENDIXES:

DESCRIPTIVE LIST OF APPENDIX ENTRIES

These appendixes contain a number of tables that amplify data shown in reduced form in tables in the text. They also contain, as the first entry, the questionnaire form used in this study. The tables of the appendixes are listed below, with descriptive information about each of them that was not feasible to include on the same page as the table. For each appendix table listed, there is also a reference to the portion of the text to which it refers.

Appendix 1. Reference: Introduction.
CAREER PATTERNS QUESTIONNAIRE
This is a two-page questionnaire used in the present study.

Appendix 2. Reference: Introduction, section on sample of doctorates included in the study.
QUESTIONNAIRE CONTACT ATTEMPTS: NUMBER OF PRESUMED LIVING PHD'S IN EACH FIELD AND COHORT
This table describes the samples of doctorate-holders to whom the questionnaire was sent, by year of doctorate graduation (cohort) and by field of degree. It excludes graduates who were known to have died, but includes the non-responders.

Appendix 3. Reference: Introduction, section on questionnaire procedure.
NUMBERS OF RETURNED QUESTIONNAIRES, BY FIELD AND COHORT
This table gives the number of doctorate-holders who actually returned useable questionnaires, and thus describes the total group under statistical analysis.

Appendix 4. Reference: Chapter 1, Table 4
CATEGORY OF PRESENT EMPLOYER, BY FIELD AND COHORT
This table provides the data regarding employers of those doctorate-holders who responded to the questionnaire, by field of doctorate and graduation cohort. The various employer categories, from left to right in the table, are as follows: United States colleges and universities; elementary and secondary schools in the United States; the United States government, in either civilian or military capacity; any foreign university; state and local governmental units in the United States; non-profit organizations of all types (typically hospitals); business and industry; self-employed, including consultants: all foreign employment other than universities; and all other categories, including unknown. The first page presents data on graduation cohorts 1935 and 1940; the second on graduation cohorts 1945 and 1950, and the last on graduation cohorts 1955 and 1960. This arrangement, with a fine field break-out within cohort, is typical of the appendix tables.

Appendix 5. Reference: Chapter 1, Table 7
GEOGRAPHIC REGION OF PRESENT JOB
This table gives information on the location of the doctorate-holders as of the end of 1962, sorted into the same graduation cohorts as in Appendix 4, on three pages. The regions are as follows: All non-U.S. addresses, followed by the nine census regions within the United States.
Geographic regions of the United States:
NEW ENGLAND: Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, Connecticut
MIDDLE ATLANTIC: New York, New Jersey, Pennsylvania
EAST NORTH CENTRAL: Ohio, Indiana, Illiois, Michigan, Wisconsin
WEST NORTH CENTRAL: Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas
SOUTH ATLANTIC: Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida
EAST SOUTH CENTRAL: Kentucky, Tennessee, Alabama, Mississippi
WEST SOUTH CENTRAL: Arkansas, Louisiana, Oklahoma, Texas
MOUNTAIN: Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Montana
PACIFIC AND INSULAR: Washington, Oregon, California, Alaska, Hawaii, Virgin Islands, Panama Canal Zone, Puerto Rico

Appendix 6. Reference: Chapter 2, Tables 9 and 10

6A: SHIFT IN FUNCTION FROM TEACHING ON FIRST JOB TO RESEARCH ON PRESENT JOB

6B: SHIFT IN FUNCTION FROM TEACHING ON FIRST JOB TO ADMINISTRATION ON PRESENT JOB

6C: SHIFT IN FUNCTION FROM RESEARCH ON FIRST JOB TO TEACHING ON PRESENT JOB

6D: SHIFT IN FUNCTION FROM RESEARCH ON FIRST JOB TO ADMINISTRATION ON PRESENT JOB

These tables include all graduation cohorts, but only two major fields of doctorate:

Basic medical sciences occupy the top portion of each table, other bio-sciences the bottom portion.

Appendix 7. Reference: Chapter 2, Table 12
NUMBERS OF CASES WITH VARIOUS CATEGORIES OF PRESENT RESEARCH SUPPORT

This table includes only those doctorate-holders who, at the time of follow-up, were spending half or more of their time on research. It has the usual three-page tabulation. On each page the first group of columns indicates those people who have some research support, or all their research support, from the Public Health Service. The second group of columns indicates people who are deriving no research support from the Public Health Service. Within each of these groups, a further break-out is provided according to whether or not research is supported by non-PHS sources, governmental or private, or both.

Appendix 8. Reference: Chapter 3, Table 13
SOURCES OF SUPPORT FOR GRADUATE EDUCATION, IN PERCENTAGES

In this three-page table, sources of support are given as follows: the student's university, the Veterans Administration; governmental sources other than V.A.; a private foundation or health agency; the student's spouse; the student's parents; the student's own earnings; his savings; his borrowings; and all other sources not included in the preceding categories.

Appendix 9. Reference: Chapter 3, Table 14
SOURCES OF SUPPORT FOR FIRST POST-DOCTORAL FELLOWSHIP

This three-page table gives the number of doctorate-holders in each field and cohort who held postdoctoral fellowships, and the sources of support for these fellowships, as follows:

the Public Health Service; the National Science Foundation; the Department of Defense; other U.S. government agencies; private foundations and health agencies; universities; all other sources not included in the preceding categories.

Appendix 10. Reference: Chapter 3
DURATION OF FIRST POSTDOCTORAL FELLOWSHIP

The numbers of individuals holding fellowships, as shown in this three-page table, vary somewhat from those in Appendix 9 because in some cases the respondents indicated source but not duration, or vice versa; the discrepancies are small.

Appendix 11. Reference: Chapter 4, Table 16
EDUCATION OF FATHER

This three-page table indicates the highest level of formal education attained by the fathers of the doctorate-holders included in this study, as follows: no formal education; grades 1-3; grades 4-6; grades 7 and 8; grades 9-11; high school graduation; 1 to 3 years of college; college graduation; graduate education to MA, MD, or MS; PhD or equivalent.

Appendix 12. Reference: Chapter 4, Table 17
EDUCATION OF MOTHER. Parallel to Appendix 11, but refers to mothers of doctorate-holders.

Appendix 13. Reference: Chapter 4, Table 18
OCCUPATIONAL LEVEL OF FATHER

This three-page table indicates the occupations of the fathers of the doctorate-holders included in this study according to the following categories: college or university teacher; other professional worker; manager (any type); farmer; sales or service worker; skilled craftsman; semi-skilled machine operator; unskilled laborer.

Appendix 14. Reference: Chapter 4, Tables 19, 20, and 21

14A: RELATION OF EDUCATION OF FATHER TO CATEGORY OF PRESENT EMPLOYER, BIOLOGICAL FIELDS

14B: RELATION OF EDUCATION OF MOTHER TO CATEGORY OF PRESENT EMPLOYER, BIOLOGICAL FIELDS

14C: RELATION OF OCCUPATION OF FATHER TO CATEGORY OF PRESENT EMPLOYER, BIOLOGICAL FIELDS

The top portion of each of these tables deals

with the basic medical sciences, the bottom portion with the other bio-sciences. Each table shows, in numbers and percentages, the employer categories, by grade level of father or mother, or occupation of father. Four employer categories only are used here: colleges and universities; the U.S. government; business and industry; and all others. The right-hand side of each table gives the details of the discrepancy between the actual values found and those that would be expected if there were no relationship between the variables involved. From this discrepancy, the X^2 statistic is calculated.

Appendix 15. Reference: Chapter 5, Table 26
FIELD-SWITCHING FROM DOCTORATE DEGREE TO 1962 JOB
This table is in four parts. The first includes all graduation cohorts combined; the next three parts include one decade cohort each. The rows in each table indicate the field of doctorate specialization; the columns relate to the field of the present job. The top portion of each table deals with the life sciences, psychology, and sociology; the bottom portion includes the other social sciences, the physical sciences, arts, professions, and education.

Appendix 16. Reference: Chapter 6, Table 27
EMPLOYERS OF WOMEN DOCTORATE-HOLDERS
Included in this table are data on all the women doctorate-holders in the sample, divided into three decade cohorts. Each cohort is sorted into 11 fields of doctorate. The employer categories used are the same as those used in Appendix 4.

Appendix 17. Reference: Chapter 7, Table 33
GEOMETRIC MEAN OF SALARIES ON PRESENT JOB, BY MAJOR FUNCTION PERFORMED, FIELDS, AND COHORTS
This table provides data on the salaries of all the doctorate-holders in the sample who included this information on their questionnaires. There are six pages to this table, as the data are too voluminous for the usual three pages. Each cohort is presented on two facing pages, separated into two tables, each with eight data columns. The left-hand page contains numbers of cases and geometric means of salaries by the following functional categories:

Those doing teaching and research, with 50 per cent time devoted to each
Those doing research and administration, with 50 per cent time devoted to each
Those doing teaching and administration, with 50 per cent time devoted to each
Those doing research as a major function (50 per cent or more, with other functions either divided or totaling less than 50 per cent time)

The right-hand page has four other functional categories, each with numbers of cases and geometric means of salaries, as follows:

Teaching as a major function (50 per cent time or more; other functions less than 50 per cent)
Administration as a major function (50 per cent time or more; other functions less)
All other combinations or functions
Those for whom time-distribution data were not given

For a description of the meaning and rationale of the geometric mean, see Chapter 7.

NATIONAL ACADEMY of SCIENCES CAREER PATTERNS STUDY

Please check the entries in Part I below for accuracy and completeness, make corrections and additions as needed, and proceed to Part II.

Part I

Name_____ Place of birth_____ Year of birth_____ Code Number_____

Year of High School graduation_____ Field of specialization for Institution Granting Sex_____

Baccalaureate degree _____ Bachelor's degree_____ Bachelor's_____ Citizenship_____

Doctorate degree _____ Doctorate degree _____ Doctorate _____

Year in which all academic requirements other than dissertation were met_____ Name of your major adviser_____

If you held one or more postdoctoral fellowships, indicate when and where:

Dates: From	To	Institution	Location	Source of Support
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Part II Employment Since Doctorate

Indicate your gainful employment at present, immediately following receipt of the doctorate degree, and as of December 31 of each of the indicated years (if they followed the doctorate). If you are NOT employed at the present time, please check here____ If you are seeking employment now, indicate by circling: Yes, seeking employment; full time____part-time. No, not seeking employment____ If you are not now employed, indicate your last previous employment on the top line below.

Time Period of Employment	Fld. of specialization (see accompanying list of specialties) Name	No.	Title or Position	Name of Employer Address of Employer	If college or university, check all appropriate categories: Academic Rank: Instr.	Asst. Prof.	Assoc. Prof.	Full Prof	Admin.: Dept. Chm.	Dean	Status: Faculty	Non-Faculty	Average Hours Worked Per Week	Approximate Percent of time spent in teaching, research, administration, other. (total to 100%)	Annual Professional Income (include all sources, such as consulting, royalties, etc.)
Present Job				Name Address										Teaching_____% Research_____% Administration_____% Other_____%	
First Post-doctoral job				Name Address										Teaching_____% Research_____% Administration_____% Other_____%	
Period Ending December 1960				Name Address										Teaching_____% Research_____% Administration_____% Other_____%	
Period Ending December 1955				Name Address										Teaching_____% Research_____% Administration_____% Other_____%	
Period Ending December 1950				Name Address										Teaching_____% Research_____% Administration_____% Other_____%	
Period Ending December 1945				Name Address										Teaching_____% Research_____% Administration_____% Other_____%	
Period Ending December 1940				Name Address										Teaching_____% Research_____% Administration_____% Other_____%	

If your wife or husband is employed, please indicate his or her present employment data on the line below:

Field of Occupation				Name Address										Teaching_____% Research_____% Administration_____% Other_____%	

U.S. Dept. of Health Education and Welfare, Public Health Service: PHS T-195, 4-63

Bureau of the Budget No. 68-S304. Approval expires 12-31-63

Part III

1. **For your current positions only:** If you are engaged in research, please check source of research support: (check all that apply)

a. Public Health Service (NIH)____
b. National Science Foundation____
c. Department of Defense ____
d. National Aeronautics and Space Agency ____
e. Other Federal Agency, please specify_____ ____
f. State or local government ____
g. Company funds (your own employer) ____
h. Industry (other than own employer) ____
i. Private Foundation ____
j. Private Health or Social agency ____
k. University or other non-profit organization (not reported elsewhere) ____
l. Other, please specify _____ ____

2. **In each 5-year interval** reported in Part II, how many times did you change professional jobs? Enter zero if you held the same job for the entire 5-year period.

a. 1936-40 ____ c. 1946-50 ____ e. 1956-60 ____
b. 1941-45 ____ d. 1951-55 ____

3. **Support during graduate school.** Please indicate approximate % of support during graduate years, from each source shown. Enter % estimates to the nearest 10 %, so that categories a to h = 100%.

a. Fellowship, scholarship, assistantship, or traineeship
(1) University ____
(2) Federal gov't. agency ____
(3) Foundation or Health Agency ____
(4) Other, please specify _____ ____
b. Veteran's Benefits ____
c. Own Earnings ____
d. Spouse's Earnings ____
e. Parents' Contributions ____
f. Savings ____
g. Borrowings ____
h. Other, please specify _____ ____
Total 100%

4. **Honors** won in undergraduate years (as PBK, ΣXi, Cum Laude, etc.)

_____

Honors won in graduate years_____

_____

5. **Marital Status:** Single____; Married____; Year of first marriage_____; Widowed, divorced, or separated____.

6. **Number of Children,** if any____. Years of birth: 19___; 19___; 19___; 19___; 19___; _____.

7. a. **High School** from which you graduated: a) Name_____

Address_____

b. Type of school (check one): Public___; Private, denominational____; Private, nondenominational____.

c. Size of graduating class (check one): 1-9____; 10-19____; 20-39____; 40-59____; 60-99____; 100-199____; 200-399____; 400-599____; 600-799____; 800 or more____.

8. Family Background:

a. Which category comes closest to describing your father's occupation? (check one)

(1)____College or University professor or researcher
(2)____Other professional occupation
(3)____Managerial
(4)____Farmer or farm manager
(5)____Sales or service
(6)____Clerical
(7)____Skilled craft
(8)____Semi-skilled
(9)____Unskilled

b. (1) Indicate years of birth of any brothers:

_____ _____ _____ _____ _____ _____ _____ _____

(2) Indicate years of birth of any sisters:

_____ _____ _____ _____ _____ _____ _____ _____

9. Indicate, by circling, the highest grade attained within each level of education for your father and mother.

a. Education up to baccalaureate:

father:	none	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
		Grammar school								High school				College			
mother:	none	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4

b. Post-baccalaureate education:

	Master's or First Professional (MA,MS,JD,MD,DDS,DVM, etc.)	Ph.D. or Equivalent	Postdoctoral
Father:			
Mother:			

10. Please enter here your social security number:

			-		-				

11. Please add any further comments that you feel bear on your career development after the receipt of the Ph.D.

Return this form to the Office of Scientific Personnel, National Academy of Sciences-National Research Council, 2101 Constitution Avenue, Washington 25, D. C.

Appendix 2

QUESTIONNAIRE CONTACT ATTEMPTS:
NUMBER OF PRESUMED LIVING PHD'S IN EACH FIELD AND COHORT

Field	Cohort Group						
	Total	1935	1940	1945	1950	1955	1960
TOTAL ALL FIELDS	14831	2213	2492	2002	2383	2809	2932
BIO-SCIENCES, TOTAL	4481	538	840	470	597	929	1107
Basic Med. Sciences	2712	278	555	231	355	611	682
Physiology	785	127	169	56	74	170	189
Pharmacology	225	20	47	22	41	52	43
Biochemistry	980	63	217	98	123	208	271
Microbiology	722	68	122	55	117	181	179
Other Bio-Sciences	1769	260	285	239	242	318	425
Botany	627	93	105	98	105	116	110
Genetics	222	26	50	16	21	30	79
Zoology	719	97	129	123	115	128	127
Misc. Biology	201	44	1	2	1	44	109
Medical Sciences	385	60	53	35	52	102	83
Agric. Sciences	767	107	107	95	151	187	120
Psychology	662	104	113	115	124	110	96
Social Sciences	2667	431	427	428	417	469	495
Sociology	652	109	106	110	94	117	116
Economics	685	104	120	136	86	124	115
Political Science	615	101	97	63	118	108	128
Hist. & Geog.	715	117	104	119	119	120	136
M-P-E FIELDS	3221	517	523	454	599	574	554
Mathematics	641	100	88	88	102	133	130
Physical Sciences	1880	311	325	277	360	305	302
Physics	630	102	88	112	124	111	93
Chemistry	657	122	115	107	106	98	109
Geo. Sciences	593	87	122	58	130	96	100
Engineering	700	106	110	89	137	136	122
ALL OTHER FIELDS	2648	456	429	405	443	438	477
Lang. & Lit.	752	141	133	116	116	116	130
Arts & Humanities	636	113	118	78	118	104	105
Professions	616	103	94	92	101	100	126
Education	644	99	84	119	108	118	116

Appendix 3

NUMBERS OF RETURNED QUESTIONNAIRES, BY FIELD AND COHORT

Field	Cohort Group						
	Total	1935	1940	1945	1950	1955	1960
TOTAL ALL FIELDS	10016	1354	1610	1289	1627	1912	2224
BIO-SCIENCES, TOTAL	3165	351	570	328	418	663	835
Basic Med. Sciences	1887	180	378	156	246	425	502
Physiology	533	79	112	36	43	123	140
Pharmacology	153	15	25	18	29	36	30
Biochemistry	688	35	155	64	90	139	205
Microbiology	513	51	86	38	84	127	127
Other Bio-Sciences	1278	171	192	172	172	238	333
Botany	445	59	69	69	71	91	86
Genetics	155	19	32	13	14	21	56
Zoology	525	63	90	89	87	93	103
Misc. Biology	153	30	1	1	0	33	88
Medical Sciences	254	39	31	26	37	66	55
Agric. Sciences	536	77	74	65	103	125	92
Psychology	468	61	83	76	95	73	80
Social Sciences	1712	254	252	257	267	318	364
Sociology	449	78	65	64	61	84	97
Economics	436	56	80	80	54	84	82
Political Science	378	61	49	32	75	76	85
Hist. & Geog.	449	59	58	81	77	74	100
M-P-E FIELDS	2283	346	367	296	435	405	434
Mathematics	458	69	62	63	68	96	100
Physical Sciences	1362	206	238	185	271	222	240
Physics	436	71	69	67	90	70	69
Chemistry	493	76	92	78	77	80	90
Geo. Sciences	433	59	77	40	104	72	81
Engineering	463	71	67	48	96	87	94
ALL OTHER FIELDS	1598	226	233	241	272	262	364
Lang. & Lit.	457	77	76	67	74	67	96
Arts & Humanities	379	60	62	46	69	64	78
Professions	366	48	43	56	61	56	102
Education	396	41	52	72	68	75	88

Appendix 4

CATEGORY OF PRESENT EMPLOYER, BY FIELD AND COHORT

COHORT	FIELD	TOTAL GROUP	COLL & U	ELEM & HS	U.S. GOVT	FRGN UNIV	ST & LOC	NON-PRFT	BUS, IND	SELF EMPL	FRN, NON-U	OTHER & UNK
ALL	TOTAL, ALL FIELDS	10016	5916	173	825	303	164	435	1506	218	254	222
COHORT 1935	TOTAL, ALL FIELDS	1354	777	32	123	23	32	71	199	45	24	28
	BIO-SCIENCES, TOTAL	351	198	8	38	5	12	25	38	11	9	7
	BASIC MED. SCIENCES	180	86	5	22	2	6	15	26	11	5	2
	PHYSIOLOGY	79	48	2	6	1	2	4	5	9	2	
	PHARMACOLOGY	15	7		1	1		2	3		1	
	BIOCHEMISTRY	35	7	2	3		2	6	13		1	1
	MICROBIOLOGY	51	24	1	12		2	3	5	2	1	1
	OTHER BIO-SCIENCES	171	112	3	16	3	6	10	12		4	5
	BOTANY	59	34	1	11		2	2	4		2	3
	GENETICS	19	14	1	1			1	1		1	
	ZOOLOGY	63	44	1	2	2	3	5	5		1	
	MISC. BIOLOGY	30	20		2	1	1	2	2			2
	MEDICAL SCIENCES	39	21	1	3	1	2	2	2	5	1	1
	AGRIC. SCIENCES	77	33	1	22	3	3	1	10		3	1
	PSYCHOLOGY	61	31	5	2	3	3	5	4	6		2
	SOCIAL SCIENCES	254	172	9	18	5	7	15	10	7	4	7
	SOCIOLOGY	78	54	1	3	2	2	8	2	2	1	3
	ECONOMICS	56	41		3	2	1	1	5	1	1	1
	POLITICAL SCIENCE	61	36	3	9		3	5	1	1	1	2
	HIST., GEOGRAPHY	59	41	5	3	1	1	1	2	3	1	1
	M-P-E FIELDS	346	158		32	3	2	8	121	8	5	9
	MATHEMATICS	69	55		6			1	5	1		1
	PHYSICAL SCIENCES	206	78		21	3	1	7	80	4	4	8
	PHYSICS	71	29		8			1	24		2	7
	CHEMISTRY	76	17		5			5	47	1		1
	GEOLOGY	59	32		8	3	1	1	9	3	2	
	ENGINEERING	71	25		5		1		36	3	1	
	ALL OTHER FIELDS	226	164	8	8	3	3	15	14	8	2	1
	LANG. & LIT.	77	62	3	3	2		1	5	1		
	ARTS, HUMANITIES	60	49	1	3	1	1	2	3			
	PROFESSIONS	48	27					8	5	6	2	
	EDUCATION	41	26	4	2		2	4	1	1		1
COHORT 1940	TOTAL, ALL FIELDS	1610	877	32	141	26	24	77	293	70	40	30
	BIO-SCIENCES, TOTAL	570	299	9	61	11	10	33	100	24	11	12
	BASIC MED. SCIENCES	378	181	5	39	4	8	23	88	18	5	7
	PHYSIOLOGY	112	67	3	10			12	8	11		1
	PHARMACOLOGY	25	9		2	2			11	1		
	BIOCHEMISTRY	155	60	1	14	1	5	8	53	4	4	5
	MICROBIOLOGY	86	45	1	13	1	3	3	16	2	1	1
	OTHER BIO-SCIENCES	192	118	4	22	7	2	10	12	6	6	5
	BOTANY	69	45	2	7	2		5	4	1	2	1
	GENETICS	32	20		3	2		2	2	2		1
	ZOOLOGY	90	52	2	12	3	2	3	6	3	4	3
	MISC. BIOLOGY	1	1									
	MEDICAL SCIENCES	31	9		3		2	2	1	10	1	3
	AGRIC. SCIENCES	74	39		11	3	1	2	10	3	5	
	PSYCHOLOGY	83	30	5	11	3	3	8	16	6	1	
	SOCIAL SCIENCES	252	169	4	22	5	2	12	15	12	9	2
	SOCIOLOGY	65	44	1	3	2	2	7	2	3	1	
	ECONOMICS	80	49		12	2		1	8	4	2	2
	POLITICAL SCIENCE	49	31	1	4	1		2	4	4	2	
	HIST., GEOGRAPHY	58	45	2	3			2	1	1	4	
	M-P-E FIELDS	367	156	2	25	4	3	6	140	11	10	10
	MATHEMATICS	62	43	1	1	1			14	2		
	PHYSICAL SCIENCES	238	90	1	20	1	3	4	97	6	8	8
	PHYSICS	69	34		9			1	18		2	5
	CHEMISTRY	92	21		4			3	60	1		3
	GEOLOGY	77	35	1	7	1	3		19	5	6	
	ENGINEERING	67	23		4	2		2	29	3	2	2
	ALL OTHER FIELDS	233	175	12	8		3	14	11	4	3	3
	LANG. & LIT.	76	65	3	1			2	2		2	1
	ARTS, HUMANITIES	62	48	1	1		1	4	6		1	
	PROFESSIONS	43	26		3		1	6	3	2		2
	EDUCATION	52	36	8	3		1	2		2		

Appendix 4, continued

CATEGORY OF PRESENT EMPLOYER, BY FIELD AND COHORT

COHORT	FIELD	TOTAL GROUP	COLL & U	ELEM & HS	U.S. GOVT	FRGN UNIV	ST & LOC	NON-PRFT	BUS, IND	SELF EMPL	FRN, NON-U	OTHER & UNK
COHORT 1945	TOTAL, ALL FIELDS	1289	838	17	88	23	19	51	170	37	25	21
	BIO-SCIENCES, TOTAL	328	209	2	28	9	6	14	41	10	4	5
	BASIC MED. SCIENCES	156	89		15	3	3	8	28	7	1	2
	PHYSIOLOGY	36	25		3		1	1	3	2		1
	PHARMACOLOGY	18	8		1	1		2	3	2	1	
	BIOCHEMISTRY	64	38		7	1	1	3	12	1		1
	MICROBIOLOGY	38	18		4	1	1	2	10	2		
	OTHER BIO-SCIENCES	172	120	2	13	6	3	6	13	3	3	3
	BOTANY	69	42	1	8	3	2	1	9	1	2	
	GENETICS	13	10		1					1		1
	ZOOLOGY	89	67	1	4	3	1	5	4	1	1	2
	MISC. BIOLOGY	1	1									
	MEDICAL SCIENCES	26	12		4		1	3	1	5		
	AGRIC. SCIENCES	65	41		5	2			9	3	3	2
	PSYCHOLOGY	76	50	2	6		4	4	8	2		
	SOCIAL SCIENCES	185	82	2	12	2		3	68	6	5	5
	SOCIOLOGY	64	47		6	1	1	6		1	2	
	ECONOMICS	80	46		10			3	11	2	4	4
	POLITICAL SCIENCE	32	23		3	2			1	1	1	1
	HIST., GEOGRAPHY	81	70	1	2	1	2	3		2		
	M-P-E FIELDS	296	154	2	16	4		3	95	7	7	8
	MATHEMATICS	63	51		1	1			8		1	1
	PHYSICAL SCIENCES	233	103	2	15	3		3	87	7	6	7
	PHYSICS	67	36		4	1			19	1	1	5
	CHEMISTRY	78	25	2	4			3	42	2		
	GEOGRAPHY	40	21		4	1			7	3	4	
	ENGINEERING	48	21		3	1			19	1	1	2
	ALL OTHER FIELDS	241	186	10	8	4	5	15	4	4	4	1
	LANG. & LIT.	67	64		1	1	1					
	ARTS, HUMANITIES	46	36	1	1	1	2	1		2	1	1
	PROFESSIONS	56	36		1	2	1	10	3	1	2	
	EDUCATION	72	50	9	5		1	4	1	1	1	
COHORT 1950	TOTAL, ALL FIELDS	1627	923	25	142	44	23	69	275	34	44	48
	BIO-SCIENCES, TOTAL	418	229	3	50	13	5	23	63	10	12	10
	BASIC MED. SCIENCES	246	125	1	26	4	2	15	51	9	6	7
	PHYSIOLOGY	43	26	1	5	1		3	2	5		
	PHARMACOLOGY	29	15		1	1			10	1		1
	BIOCHEMISTRY	90	40		12	2		7	21	1	5	2
	MICROBIOLOGY	84	44		8		2	5	18	2	1	4
	OTHER BIO-SCIENCES	172	104	2	24	9	3	8	12	1	6	3
	BOTANY	71	43		10	4	2	4	5	1	2	
	GENETICS	14	4		3	2			4		1	
	ZOOLOGY	87	57	2	11	3	1	4	3		3	3
	MISC. BIOLOGY											
	MEDICAL SCIENCES	37	13		6	1	1	5	3	5	2	1
	AGRIC. SCIENCES	103	71		10	3	2	1	12		4	
	PSYCHOLOGY	95	42		18		1	8	14	9	1	2
	SOCIAL SCIENCES	267	196	2	17	5	5	11	12	6	10	3
	SOCIOLOGY	61	44		2	2	2	3	4	2	2	
	ECONOMICS	54	37		4	2	1	1	5	2	2	
	POLITICAL SCIENCE	75	53		9		2	3	1	1	4	2
	HIST., GEOGRAPHY	77	62	2	2	1		4	2	1	2	1
	M-P-E FIELDS	435	179	1	30	13	3	7	159	2	10	31
	MATHEMATICS	68	46		3	3		1	13			2
	PHYSICAL SCIENCES	271	98	1	25	9	2	4	99	1	6	26
	PHYSICS	90	37		8	2		2	24		1	16
	CHEMISTRY	77	15		2			2	50		1	7
	GEOGRAPHY	104	46	1	15	7	2		25	1	4	3
	ENGINEERING	96	35		2	1	1	2	47	1	4	3
	ALL OTHER FIELDS	272	193	19	11	9	6	14	12	2	5	1
	LANG. & LIT.	74	66	2	3	1			2			
	ARTS, HUMANITIES	69	59	3		2		2	1		1	1
	PROFESSIONS	61	29		6	4	1	12	8		1	
	EDUCATION	68	39	14	2	2	5		1	2	3	

Appendix 4, continued

CATEGORY OF PRESENT EMPLOYER, BY FIELD AND COHORT

COHORT	FIELD	TOTAL GROUP	COLL & U	ELEM & HS	U.S. GOVT	FRGN UNIV	ST & LOC	NON-PRFT	BUS, IND	SELF EMPL	FRN, NON-U	OTHER & UNK
COHORT 1955	TOTAL, ALL FIELDS	1912	1145	36	164	73	33	70	283	20	48	40
	BIO-SCIENCES, TOTAL	663	393	2	77	30	10	41	77	5	15	13
	BASIC MED. SCIENCES	425	240	2	49	17	9	27	60	3	9	9
	PHYSIOLOGY	123	83		9	5	2	5	12	1		6
	PHARMACOLOGY	36	23		3	2		2	5			1
	BIOCHEMISTRY	139	67	2	15	5	3	12	29		5	1
	MICROBIOLOGY	127	67		22	5	4	8	14	2	4	1
	OTHER BIO-SCIENCES	238	153		28	13	1	14	17	2	6	4
	BOTANY	91	61		11	5		4	7		2	1
	GENETICS	21	11		4	3			1		2	
	ZOOLOGY	93	65		8	4		5	6	2	2	1
	MISC. BIOLOGY	33	16		5	1	1	5	3			2
	MEDICAL SCIENCES	66	33		4	4	2	3	15	4	1	
	AGRIC. SCIENCES	125	81		16	6	3	1	11	1	6	
	PSYCHOLOGY	73	32	4	12		3	6	9	5	1	1
	SOCIAL SCIENCES	318	248	5	15	9	5	9	12	2	9	4
	SOCIOLOGY	84	66	1	4	1	2	4	1	1	3	1
	ECONOMICS	84	65		4	1		1	8		3	2
	POLITICAL SCIENCE	76	58		7	2	3	1	1	1	2	1
	HIST., GEOGRAPHY	74	59	4		5		3	2		1	
	M-P-E FIELDS	405	162		33	14	5	6	150	2	12	21
	MATHEMATICS	96	63		3	5		1	20			4
	PHYSICAL SCIENCES	222	71		26	5	5	4	86	1	11	13
	PHYSICS	70	20		8	2		2	28		2	8
	CHEMISTRY	80	26		2			1	49			2
	GEOLOGY	72	25		16	3	5	1	9	1	9	3
	ENGINEERING	87	28		4	4		1	44	1	1	4
	ALL OTHER FIELDS	262	196	25	7	10	5	4	9	1	4	1
	LANG. & LIT.	67	58	4	1	2			2			
	ARTS, HUMANITIES	64	57		1	2	1	1	1	1		
	PROFESSIONS	56	38	1	2	4	1	3	3		3	1
	EDUCATION	75	43	20	3	2	3		3		1	
COHORT 1960	TOTAL, ALL FIELDS	2224	1356	31	167	114	33	97	286	12	73	55
	BIO-SCIENCES, TOTAL	835	505		74	52	11	52	81	4	36	20
	BASIC MED. SCIENCES	502	295		41	30	5	40	65	2	15	9
	PHYSIOLOGY	140	96		6	11		5	12	1	4	5
	PHARMACOLOGY	30	14		1	2		3	9		1	
	BIOCHEMISTRY	205	120		17	8	1	19	33	1	3	3
	MICROBIOLOGY	127	65		17	9	4	13	11		7	1
	OTHER BIO-SCIENCES	333	210		33	22	6	12	16	2	21	11
	BOTANY	86	54		4	7	2	3	3		12	1
	GENETICS	56	33		4	3	2	2	5		3	4
	ZOOLOGY	103	73		13	7	1	4	3		2	
	MISC. BIOLOGY	88	50		12	5	1	3	5	2	4	6
	MEDICAL SCIENCES	55	16		7	4	3	3	14	2	4	2
	AGRIC. SCIENCES	92	46		15	8	4	1	11		7	
	PSYCHOLOGY	80	38	3	11	3	6	7	5	5		2
	SOCIAL SCIENCES	364	279	3	24	17	4	7	16		11	3
	SOCIOLOGY	97	77		6	5	2	3	2		2	
	ECONOMICS	82	50		7	4		2	13		6	
	POLITICAL SCIENCE	85	61		10	4	2	2	1		3	2
	HIST., GEOGRAPHY	100	91	3	1	4						1
	M-P-E FIELDS	434	190		32	19	3	6	150		9	25
	MATHEMATICS	100	66		7	5			18		1	3
	PHYSICAL SCIENCES	240	89		22	12	2	4	92		7	12
	PHYSICS	69	34		3	4		2	22			4
	CHEMISTRY	90	27		4			1	51		2	5
	GEOLOGY	81	28		15	8	2	1	19		5	3
	ENGINEERING	94	35		3	2	1	2	40		1	10
	ALL OTHER FIELDS	364	282	25	4	11	2	21	9	1	6	3
	LANG. & LIT.	96	87	2	1	1	1	1	2	1		
	ARTS, HUMANITIES	78	63	2		4		4	2		1	2
	PROFESSIONS	102	70	1	2	5	1	15	5		3	
	EDUCATION	88	62	20	1	1		1			2	1

Appendix 5

GEOGRAPHIC REGION OF PRESENT JOB

COHORT	FIELD	TOTAL GROUP	FRGN	NEW ENG	MID. ATL.	E.N. CENT	W.N. CENT	SO. ATL	E.S. CENT	W.S. CENT	MTN	PAC	UNK
ALL	TOTAL, ALL FIELDS	10016	556	730	1968	1772	715	1529	320	560	421	1411	34
COHORT 1935	TOTAL, ALL FIELDS	1354	47	100	289	249	101	229	33	79	43	176	8
	BIO-SCIENCES, TOTAL	351	14	13	70	77	26	54	11	25	16	43	2
	BASIC MED. SCIENCES	180	7	3	36	47	11	30	5	13	7	21	
	PHYSIOLOGY	79	3	2	15	19	5	15	3	8	1	8	
	PHARMACOLOGY	15	2		2	3	1	4		1		2	
	BIOCHEMISTRY	35	1		10	12	3	3		1	1	4	
	MICROBIOLOGY	51	1	1	9	13	2	8	2	3	5	7	
	OTHER BIO-SCIENCES	171	7	10	34	30	15	24	6	12	9	22	2
	BOTANY	59	2	5	10	9	4	12	1	4	4	7	1
	GENETICS	19	1	1	3	4	3	1		2	1	3	
	ZOOLOGY	63	3	3	14	12	5	4	4	5	3	10	
	MISC. BIOLOGY	30	1	1	7	5	3	7	1	1	1	2	1
	MEDICAL SCIENCES	39	2	1	8	6	4	8	2		1	7	
	AGRIC. SCIENCES	77	6	5	10	10	7	18	4	4	3	10	
	PSYCHOLOGY	61	3	6	12	16	9	7	1	2		5	
	SOCIAL SCIENCES	254	9	27	55	44	19	52	1	8	6	29	4
	SOCIOLOGY	78	3	9	19	13	8	8	1	2	2	10	3
	ECONOMICS	56	3	10	11	9	3	14		1	1	4	
	POLITICAL SCIENCE	61	1	2	12	13	3	17		4	1	8	
	HIST., GEOGRAPHY	59	2	6	13	9	5	13		1	2	7	1
	M-P-E FIELDS	346	8	26	84	48	23	54	7	25	11	59	1
	MATHEMATICS	69		3	8	9	4	15	4	6	1	19	
	PHYSICAL SCIENCES	206	7	15	54	29	15	27		17	9	32	1
	PHYSICS	71	2	6	23	10	5	8		3	2	12	
	CHEMISTRY	76		4	27	14	4	14		6	1	5	1
	GEOLOGY	59	5	5	4	5	6	5		8	6	15	
	ENGINEERING	71	1	8	22	10	4	12	3	2	1	8	
	ALL OTHER FIELDS	226	5	22	50	48	13	36	7	15	6	23	1
	LANG. & LIT.	77	2	8	16	13	5	12	4	7	3	7	
	ARTS, HUMANITIES	60	1	8	11	18	2	10	1	2	1	6	
	PROFESSIONS	48	2	4	15	6	5	4	2	3	1	6	
	EDUCATION	41		2	8	11	1	10		3	1	4	1
COHORT 1940	TOTAL, ALL FIELDS	1610	66	121	329	295	115	258	47	94	61	215	9
	BIO-SCIENCES, TOTAL	570	22	33	112	108	43	98	20	27	25	77	5
	BASIC MED. SCIENCES	378	9	19	81	78	32	60	11	17	14	55	2
	PHYSIOLOGY	112		7	24	21	9	19	5	4	5	18	
	PHARMACOLOGY	25	2		3	7	2	6		2		3	
	BIOCHEMISTRY	155	5	9	35	32	13	25	4	4	5	21	2
	MICROBIOLOGY	86	2	3	19	18	8	10	2	7	4	13	
	OTHER BIO-SCIENCES	192	13	14	31	30	11	38	9	10	11	22	3
	BOTANY	69	4	8	9	12	3	12		6	4	10	1
	GENETICS	32	2	4	4	6	3	4	3		1	5	
	ZOOLOGY	90	7	2	18	11	5	22	6	4	6	7	2
	MISC. BIOLOGY	1				1							
	MEDICAL SCIENCES	31	1	2	7	4	3	5	1			6	2
	AGRIC. SCIENCES	74	8	2	8	13	4	15	7	3	4	10	
	PSYCHOLOGY	83	4	4	17	15	6	15	2	5	4	11	
	SOCIAL SCIENCES	252	14	22	46	42	25	44	8	19	9	22	1
	SOCIOLOGY	65	3	3	15	11	7	6	1	7	4	8	
	ECONOMICS	80	4	8	16	12	9	17	3	3	4	3	1
	POLITICAL SCIENCE	49	3	7	9	6		14	2	5		3	
	HIST., GEOGRAPHY	58	4	4	6	13	9	7	2	4	1	8	
	M-P-E FIELDS	367	14	36	77	61	17	54	6	25	12	65	
	MATHEMATICS	62	1	10	8	14	3	6		3		17	
	PHYSICAL SCIENCES	238	9	16	53	37	9	36	5	21	11	41	
	PHYSICS	69	2	4	12	12	2	12	2	1	2	20	
	CHEMISTRY	92		5	33	16	6	15	3	3	1	10	
	GEOLOGY	77	7	7	8	9	1	9		17	8	11	
	ENGINEERING	67	4	10	16	10	5	12	1	1	1	7	
	ALL OTHER FIELDS	233	3	22	62	52	17	27	3	15	7	24	1
	LANG. & LIT.	76	2	6	19	22	4	8	1	8	2	4	
	ARTS, HUMANITIES	62	1	7	22	15	3	5		3	2	4	
	PROFESSIONS	43		6	10	4	4	9	2		1	6	1
	EDUCATION	52		3	11	11	6	5		4	2	10	

Appendix 5, continued

GEOGRAPHIC REGION OF PRESENT JOB

COHORT	FIELD	TOTAL GROUP	FRGN	NEW ENG	MID. ATL.	E.N. CENT	W.N. CENT	SO. ATL	E.S. CENT	W.S. CENT	MTN	PAC	UNK
COHORT 1945	TOTAL, ALL FIELDS	1289	48	97	277	232	99	202	44	57	42	190	1
	BIO-SCIENCES, TOTAL	328	13	14	68	57	25	50	17	15	10	59	
	BASIC MED. SCIENCES	156	4	5	44	32	10	17	7	7	5	25	
	PHYSIOLOGY	36		2	7	7	4	4	3	2		7	
	PHARMACOLOGY	18	2		6	3	1	2		1	1	2	
	BIOCHEMISTRY	64	1	2	17	11	4	8	3	4	2	12	
	MICROBIOLOGY	38	1	1	14	11	1	3	1		2	4	
	OTHER BIO-SCIENCES	172	9	9	24	25	15	33	10	8	5	34	
	BOTANY	69	5	4	11	7	6	15	2	1	4	14	
	GENETICS	13			2	1	2	3	1	3		1	
	ZOOLOGY	89	4	5	11	17	7	15	6	4	1	19	
	MISC. BIOLOGY	1							1				
	MEDICAL SCIENCES	26		1	9	5	2	5		1	1	2	
	AGRIC. SCIENCES	65	5	4	14	9	7	10	1	3	4	8	
	PSYCHOLOGY	76		9	17	16	7	14	1	2	2	8	
	SOCIAL SCIENCES	257	11	20	51	49	16	53	9	12	7	28	1
	SOCIOLOGY	64	3	3	14	17	4	12	1	3	4	3	
	ECONOMICS	80	4	8	11	10	7	24	6	2	1	6	1
	POLITICAL SCIENCE	32	3	1	10	3	2	7	1	1		4	
	HIST., GEOGRAPHY	81	1	8	16	19	3	10	1	6	2	15	
	M-P-E FIELDS	296	11	35	62	48	17	41	6	11	15	50	
	MATHEMATICS	63	2	8	13	14	3	5	1	3	1	13	
	PHYSICAL SCIENCES	185	7	20	35	27	10	31	5	7	11	32	
	PHYSICS	67	2	10	12	13	5	7	2	1	5	10	
	CHEMISTRY	78		4	16	11	3	20	3	3	1	17	
	GEOLOGY	40	5	6	7	3	2	4		3	5	5	
	ENGINEERING	48	2	7	14	7	4	5		1	3	5	
	ALL OTHER FIELDS	241	8	14	56	48	25	29	10	13	3	35	
	LANG. & LIT.	67	1	3	15	14	10	9	3	5	1	6	
	ARTS, HUMANITIES	46	2	4	13	10	3	4	1	1	2	6	
	PROFESSIONS	56	4	4	11	10	5	5	3	3		11	
	EDUCATION	72	1	3	17	14	7	11	3	4		12	
COHORT 1950	TOTAL, ALL FIELDS	1627	88	116	277	295	112	253	51	81	79	270	5
	BIO-SCIENCES, TOTAL	418	25	26	78	84	24	66	13	12	13	75	2
	BASIC MED. SCIENCES	246	10	11	54	56	16	35	6	8	4	45	1
	PHYSIOLOGY	43	1	4	10	9	2	6		1	1	9	
	PHARMACOLOGY	29	1	1	5	12	1	5			1	2	1
	BIOCHEMISTRY	90	7	3	21	20	5	8	3	4		19	
	MICROBIOLOGY	84	1	3	18	15	8	16	3	3	2	15	
	OTHER BIO-SCIENCES	172	15	15	24	28	8	31	7	4	9	30	1
	BOTANY	71	6	5	10	11	4	11	4	2	2	16	
	GENETICS	14	3	1	1		1	2	1		1	4	
	ZOOLOGY	87	6	9	13	17	3	18	2	2	6	10	1
	MISC. BIOLOGY												
	MEDICAL SCIENCES	37	3	3	10	4	5	4	3	1		3	1
	AGRIC. SCIENCES	103	7	4	6	20	8	18	5	11	6	18	
	PSYCHOLOGY	95	1	8	9	21	10	12	5	6	4	19	
	SOCIAL SCIENCES	267	15	20	35	48	23	53	11	13	12	37	
	SOCIOLOGY	61	4	7	8	8	4	10	3	3	4	10	
	ECONOMICS	54	4	4	4	12	4	13		3	3	7	
	POLITICAL SCIENCE	75	4	5	12	12	5	20	3	4		8	
	HIST., GEOGRAPHY	77	3	4	11	16	10	10	5	3		12	
	M-P-E FIELDS	435	23	34	81	68	28	58	8	26	34	75	
	MATHEMATICS	68	3	6	12	14	11	6		1	3	12	
	PHYSICAL SCIENCES	271	15	20	46	37	12	44	7	19	27	44	
	PHYSICS	90	3	8	13	11	4	17	4	4	11	15	
	CHEMISTRY	77	1	5	24	15	2	13	3	2	5	7	
	GEOLOGY	104	11	7	9	11	6	14		13	11	22	
	ENGINEERING	96	5	8	23	17	5	8	1	6	4	19	
	ALL OTHER FIELDS	272	14	21	58	50	14	42	6	12	10	43	2
	LANG. & LIT.	74	1	8	15	20	5	11	1	2	2	9	
	ARTS, HUMANITIES	69	3	9	14	12	2	14	1	4	2	7	1
	PROFESSIONS	61	5	4	12	9	4	13	1		2	10	1
	EDUCATION	68	5		17	9	3	4	3	6	4	17	

Appendix 5, continued

GEOGRAPHIC REGION OF PRESENT JOB

COHORT	FIELD	TOTAL GROUP	FRGN	NEW ENG	MID. ATL	E.N. CENT	W.N. CENT	SO. ATL	E.S. CENT	W.S. CENT	MTN	PAC	UNK
COHORT 1955	TOTAL, ALL FIELDS	1912	120	134	362	320	124	293	74	125	96	261	3
	BIO-SCIENCES, TOTAL	663	45	37	118	121	49	113	25	39	33	82	1
	BASIC MED. SCIENCES	425	26	29	79	88	32	64	18	24	21	43	1
	PHYSIOLOGY	123	5	9	28	17	10	16	6	10	6	16	
	PHARMACOLOGY	36	2	2	7	6	4	4	3	4	1	3	
	BIOCHEMISTRY	139	10	13	28	35	11	16	4	3	6	12	1
	MICROBIOLOGY	127	9	5	16	30	7	28	5	7	8	12	
	OTHER BIO-SCIENCES	238	19	8	39	33	17	49	7	15	12	39	
	BOTANY	91	7	2	14	13	5	19	6	5	7	13	
	GENETICS	21	5		1	2	2	4		1	2	4	
	ZOOLOGY	93	6	4	20	15	9	20		8	2	9	
	MISC. BIOLOGY	33	1	2	4	3	1	6	1	1	1	13	
	MEDICAL SCIENCES	66	5	4	19	7	3	10	3	8	3	4	
	AGRIC. SCIENCES	125	12	2	12	17	11	26	5	14	10	16	
	PSYCHOLOGY	73	1	8	17	10	7	8	3	4	2	13	
	SOCIAL SCIENCES	318	17	26	59	61	19	49	17	24	8	37	1
	SOCIOLOGY	84	4	6	14	18	8	11	3	7	3	9	1
	ECONOMICS	84	3	6	12	12	6	15	6	10	2	12	
	POLITICAL SCIENCE	76	4	8	19	13	3	13	3	5	1	7	
	HIST., GEOGRAPHY	74	6	6	14	18	2	10	5	2	2	9	
	M-P-E FIELDS	405	26	37	83	53	19	56	14	20	27	70	
	MATHEMATICS	96	5	8	21	9	5	14	2	3	9	20	
	PHYSICAL SCIENCES	222	16	20	44	33	11	33	8	11	13	33	
	PHYSICS	70	4	8	14	10	2	11	1	3	4	13	
	CHEMISTRY	80		8	23	15	5	9	5	3	1	11	
	GEOLOGY	72	12	4	7	8	4	13	2	5	8	9	
	ENGINEERING	87	5	9	18	11	3	9	4	6	5	17	
	ALL OTHER FIELDS	262	14	20	54	51	16	31	7	16	13	39	1
	LANG. & LIT.	67	2	2	11	15	7	9	2	5	5	9	
	ARTS, HUMANITIES	64	2	9	12	12	2	8	1	4	1	13	
	PROFESSIONS	56	7	7	14	8	1	6		3	4	5	1
	EDUCATION	75	3	2	17	16	6	8	4	4	3	12	
COHORT 1960	TOTAL, ALL FIELDS	2224	187	162	434	381	164	294	71	124	100	299	8
	BIO-SCIENCES, TOTAL	835	88	57	159	132	57	115	31	58	23	113	2
	BASIC MED. SCIENCES	502	45	33	112	82	34	70	12	33	12	68	1
	PHYSIOLOGY	140	15	5	25	18	13	16	5	13	5	24	1
	PHARMACOLOGY	30	3		9	10		2	1		1	4	
	BIOCHEMISTRY	205	11	17	48	34	12	33	4	15	5	26	
	MICROBIOLOGY	127	16	11	30	20	9	19	2	5	1	14	
	OTHER BIO-SCIENCES	333	43	24	47	50	23	45	19	25	11	45	1
	BOTANY	86	19	8	7	14	10	8	9	4	4	3	
	GENETICS	56	6	1	6	9	3	7	4	3	1	16	
	ZOOLOGY	103	9	7	19	14	6	12	4	12	5	15	
	MISC. BIOLOGY	88	9	8	15	13	4	18	2	6	1	11	1
	MEDICAL SCIENCES	55	8	2	8	17	5	7		2	1	5	
	AGRIC. SCIENCES	92	15	4	9	14	10	10	6	4	7	13	
	PSYCHOLOGY	80	3	9	16	9	6	9	2	7	7	12	
	SOCIAL SCIENCES	364	28	26	67	62	30	68	12	10	17	42	2
	SOCIOLOGY	97	7	12	21	17	4	14	3	1	6	12	
	ECONOMICS	82	10	4	12	11	5	20	5	2	6	7	
	POLITICAL SCIENCE	85	7	4	10	19	11	20	1	2	2	8	1
	HIST., GEOGRAPHY	100	4	6	24	15	10	14	3	5	3	15	1
	M-P-E FIELDS	434	28	35	100	69	20	54	8	25	24	69	2
	MATHEMATICS	100	6	7	22	21	5	13		6	5	15	
	PHYSICAL SCIENCES	240	19	19	53	27	10	34	5	17	14	40	2
	PHYSICS	69	4	5	25	6		6	2	2	4	15	
	CHEMISTRY	90	2	10	21	18	7	15	1	5	2	8	1
	GEOLOGY	81	13	4	7	3	3	13	2	10	8	17	1
	ENGINEERING	94	3	9	25	21	5	7	3	2	5	14	
	ALL OTHER FIELDS	364	17	29	75	78	36	31	12	18	21	45	2
	LANG. & LIT.	96	1	10	22	22	7	9	2	4	6	13	
	ARTS, HUMANITIES	78	5	5	21	14	6	4	3	2	4	13	1
	PROFESSIONS	102	8	9	19	23	11	10	5	5	3	9	
	EDUCATION	88	3	5	13	19	12	8	2	7	8	10	1

Appendix 6

6A. SHIFT IN FUNCTION FROM TEACHING ON FIRST JOB TO RESEARCH ON PRESENT JOB

BASIC MEDICAL SCIENCES

Percentage of Time Devoted to Research on Present Job

Percentage of Time Devoted to Teaching on First Postdoctoral Job		Total	None	10-29%	30-49%	50-89%	90-100%	Unknown
Total	N	1888	259	220	305	572	388	144
	%	100.0	13.7	11.7	16.2	30.3	20.6	7.6
None	N	772	116	60	90	230	265	11
	%	100.0	15.0	7.8	11.7	29.8	34.3	1.4
10-29%	N	262	23	17	39	129	49	5
	%	100.0	8.8	6.5	14.9	49.2	18.7	1.9
30-49%	N	172	13	17	42	73	18	9
	%	100.0	7.6	9.9	24.4	42.4	10.5	5.2
50-89%	N	338	56	70	101	81	19	11
	%	100.0	16.6	20.7	29.9	24.0	5.6	3.3
90-100%	N	135	39	33	19	26	11	7
	%	100.0	28.9	24.4	14.1	19.3	8.1	5.2
Unknown	N	209	12	23	14	33	26	101
	%	100.0	5.7	11.0	6.7	15.8	12.4	48.3

OTHER BIO-SCIENCES

Percentage of Time Devoted to Research on Present Job

Percentage of Time Devoted to Teaching on First Postdoctoral Job		Total	None	10-29%	30-49%	50-89%	90-100%	Unknown
Total	N	1278	226	210	226	314	239	63
	%	100.0	17.7	16.4	17.7	24.6	18.7	4.9
None	N	485	80	45	53	124	177	6
	%	100.0	16.5	9.3	10.9	25.6	36.5	1.2
10-29%	N	98	4	20	14	43	15	2
	%	100.0	4.1	20.4	14.3	43.9	15.3	2.0
30-49%	N	100	7	13	30	44	4	2
	%	100.0	7.0	13.0	30.0	44.0	4.0	2.0
50-89%	N	289	50	78	82	67	8	4
	%	100.0	17.3	27.0	28.4	23.2	2.8	1.4
90-100%	N	195	79	41	33	19	19	4
	%	100.0	40.5	21.0	16.9	9.7	9.7	2.1
Unknown	N	111	6	13	14	17	16	45
	%	100.0	5.4	11.7	12.6	15.3	14.4	40.5

6B. SHIFT IN FUNCTION FROM TEACHING ON FIRST JOB TO ADMINISTRATION ON PRESENT JOB

BASIC MEDICAL SCIENCES

Percentage of Time Devoted to Administration on Present Job

Percentage of Time Devoted to Teaching on First Postdoctoral Job

		Total	None	10-29%	30-49%	50-89%	90-100%	Unknown
Total	N	1888	744	504	178	185	133	144
	%	100.0	39.4	26.7	9.4	9.8	7.0	7.6
None	N	772	347	178	52	98	86	11
	%	100.0	44.9	23.1	6.7	12.7	11.1	1.4
10-29%	N	262	101	88	35	23	10	5
	%	100.0	38.5	33.6	13.4	8.8	3.8	1.9
30-49%	N	172	58	65	24	11	5	9
	%	100.0	33.7	37.8	14.0	6.4	2.9	5.2
50-89%	N	338	121	112	38	37	19	11
	%	100.0	35.8	33.1	11.2	10.9	5.6	3.3
90-100%	N	135	68	32	14	5	9	7
	%	100.0	50.4	23.7	10.4	3.7	6.7	5.2
Unknown	N	209	49	29	15	11	4	101
	%	100.0	23.4	13.9	7.2	5.3	1.9	48.3

OTHER BIO-SCIENCES

Percentage of Time Devoted to Administration on Present Job

Percentage of Time Devoted to Teaching on First Postdoctoral Job

		Total	None	10-29%	30-49%	50-89%	90-100%	Unknown
Total	N	278	600	294	128	119	74	63
	%	100.0	46.9	23.0	10.0	9.3	5.8	4.9
None	N	485	259	94	33	53	40	6
	%	100.0	53.4	19.4	6.8	10.9	8.2	1.2
10-29%	N	98	34	37	11	13	1	2
	%	100.0	34.7	37.8	11.2	13.3	1.0	2.0
30-49%	N	100	41	26	19	8	4	2
	%	100.0	41.0	26.0	19.0	8.0	4.0	2.0
50-89%	N	289	116	90	36	27	16	4
	%	100.0	40.1	31.1	12.5	9.3	5.5	1.4
90-100%	N	195	117	35	20	10	9	4
	%	100.0	60.0	17.9	10.3	5.1	4.6	2.1
Unknown	N	111	33	12	9	8	4	45
	%	100.0	29.7	10.8	8.1	7.2	3.6	40.5

C. SHIFT IN FUNCTION FROM RESEARCH ON FIRST JOB TO TEACHING ON PRESENT JOB

BASIC MEDICAL SCIENCES

Percentage of Time Devoted to Research on First Postdoctoral Job × Percentage of Time Devoted to Teaching on Present Job

		Total	None	10-29%	30-49%	50-89%	90-100%	Unknown
Total	N	1888	705	387	328	276	48	144
	%	100.0	37.3	20.5	17.4	14.6	2.5	7.6
None	N	184	63	23	23	48	20	7
	%	100.0	34.2	12.5	12.5	26.1	10.9	3.8
10-29%	N	147	29	27	25	53	5	8
	%	100.0	19.7	18.4	17.0	36.1	3.4	5.4
30-49%	N	179	37	30	53	52		7
	%	100.0	20.7	16.8	29.6	29.1		3.9
50-89%	N	477	139	134	127	55	9	13
	%	100.0	29.1	28.1	26.6	11.5	1.9	2.7
90-100%	N	692	396	141	84	51	12	8
	%	100.0	57.2	20.4	12.1	7.4	1.7	1.2
Unknown	N	209	41	32	16	17	2	101
	%	100.0	19.6	15.3	7.7	8.1	1.0	48.3

OTHER BIO-SCIENCES

Percentage of Time Devoted to Research on First Postdoctoral Job × Percentage of Time Devoted to Teaching on Present Job

		Total	None	10-29%	30-49%	50-89%	90-100%	Unknown
Total	N	1278	409	208	209	291	98	63
	%	100.0	32.0	16.3	16.4	22.8	7.7	4.9
None	N	215	53	12	23	72	52	3
	%	100.0	24.7	5.6	10.7	33.5	24.2	1.4
10-29%	N	176	31	28	25	70	20	2
	%	100.0	17.6	15.9	14.2	39.8	11.4	1.1
30-49%	N	138	20	18	43	53	1	3
	%	100.0	14.5	13.0	31.2	38.4	.7	2.2
50-89%	N	229	62	62	62	32	7	4
	%	100.0	27.1	27.1	27.1	14.0	3.1	1.7
90-100%	N	409	220	77	41	50	15	6
	%	100.0	53.8	18.8	10.0	12.2	3.7	1.5
Unknown	N	111	23	11	15	14	3	45
	%	100.0	20.7	9.9	13.5	12.6	2.7	40.5

6D. SHIFT IN FUNCTION FROM RESEARCH ON FIRST JOB TO ADMINISTRATION ON PRESENT JOB

BASIC MEDICAL SCIENCES

Percentage of Time Devoted to Research on First Postdoctoral Job × Percentage of Time Devoted to Administration on Present Job

Percentage of Time Devoted to Research on First Postdoctoral Job		Total	None	10-29%	30-49%	50-89%	90-100%	Unknown
Total	N	1888	744	504	178	185	133	144
	%	100.0	39.4	26.7	9.4	9.8	7.0	7.6
None	N	184	77	46	16	14	24	7
	%	100.0	41.8	25.0	8.7	7.6	13.0	3.8
10-29%	N	147	50	48	15	20	6	8
	%	100.0	34.0	32.7	10.2	13.6	4.1	5.4
30-49%	N	179	46	64	24	26	12	7
	%	100.0	25.7	35.8	13.4	14.5	6.7	3.9
50-89%	N	477	157	159	73	50	25	13
	%	100.0	32.9	33.3	15.3	10.5	5.2	2.7
90-100%	N	692	365	158	35	64	62	8
	%	100.0	52.7	22.8	5.1	9.2	9.0	1.2
Unknown	N	209	46	29	15	11	4	101
	%	100.0	23.4	13.9	7.2	5.3	1.9	48.3

OTHER BIO-SCIENCES

Percentage of Time Devoted to Research on First Postdoctoral Job × Percentage of Time Devoted to Administration on Present Job

Percentage of Time Devoted to Research on First Postdoctoral Job		Total	None	10-29%	30-49%	50-89%	90-100%	Unknown
Total	N	1278	600	294	128	119	74	63
	%	100.0	46.9	23.0	10.0	9.3	5.8	4.9
None	N	215	115	41	31	18	7	3
	%	100.0	53.5	19.1	14.4	8.4	3.3	1.4
10-29%	N	176	69	61	19	10	15	2
	%	100.0	39.2	34.7	10.8	5.7	8.5	1.1
30-49%	N	138	46	42	24	18	5	3
	%	100.0	33.3	30.4	17.4	13.0	3.6	2.2
50-89%	N	229	97	64	22	29	13	4
	%	100.0	42.4	27.9	9.6	12.7	5.7	1.7
90-100%	N	409	240	74	23	36	30	6
	%	100.0	58.7	18.1	5.6	8.8	7.3	1.5
Unknown	N	111	33	12	9	8	4	45
	%	100.0	29.7	10.8	8.1	7.2	3.6	40.5

Appendix 7

NUMBERS OF CASES WITH VARIOUS CATEGORIES OF PRESENT RESEARCH SUPPORT

COHORT	FIELD	TOTAL GROUP	RESEARCH PHS-SUPPORTED				NOT SUPPORTED BY PHS			
			OTHER SUPPORT	ONLY	ONLY		OTHER SUPPORT	ONLY	ONLY	
			NONE	GOVT	PRIV	BOTH	NONE	GOVT	PRIV	BOTH
ALL	TOTAL, ALL FIELDS	3240	337	85	286	131	273	606	1059	463
COHORT 1935	TOTAL, ALL FIELDS	284	19	1	24	9	35	65	97	34
	BIO-SCIENCES, TOTAL	115	14	1	14	5	9	18	36	18
	BASIC MED. SCIENCES	53	10	1	5	2	7	4	17	7
	PHYSIOLOGY	24	5		2	1	5	2	5	4
	PHARMACOLOGY	3							3	
	BIOCHEMISTRY	13	2		2		2		6	1
	MICROBIOLOGY	13	3	1	1	1		2	3	2
	OTHER BIO-SCIENCES	62	4		9	3	2	14	19	11
	BOTANY	19	1			1		9	2	6
	GENETICS	10	1					1	4	4
	ZOOLOGY	24	2		4	2	2	2	11	1
	MISC. BIOLOGY	9			5			2	2	
	MEDICAL SCIENCES	4			2		1	1		
	AGRIC. SCIENCES	24			1	2	3	10	7	1
	PSYCHOLOGY	5	1		2					2
	SOCIAL SCIENCES	36	3		1		8	5	17	2
	SOCIOLOGY	14	3		1		3		5	2
	ECONOMICS	8					2	1	5	
	POLITICAL SCIENCE	7					1	1	5	
	HIST., GEOGRAPHY	7					2	3	2	
	M-P-E FIELDS	76	1		2	2	5	27	28	11
	MATHEMATICS	12						10	1	1
	PHYSICAL SCIENCES	49	1		2	2	3	14	21	6
	PHYSICS	18			1	1		7	5	4
	CHEMISTRY	19	1		1	1		2	12	2
	GEOLOGY	12					3	5	4	
	ENGINEERING	15					2	3	6	4
	ALL OTHER FIELDS	24			2		9	4	9	
	LANG. & LIT.	5			2		1	2		
	ARTS, HUMANITIES	11					6	2	3	
	PROFESSIONS	5					2		3	
	EDUCATION	3							3	
COHORT 1940	TOTAL, ALL FIELDS	365	23	9	36	19	35	72	131	40
	BIO-SCIENCES, TOTAL	169	18	7	32	13	7	26	52	14
	BASIC MED. SCIENCES	124	14	5	27	12	6	17	37	6
	PHYSIOLOGY	38	6	2	12	3	3	6	4	2
	PHARMACOLOGY	6	1			2			3	
	BIOCHEMISTRY	56	6	3	11	3	2	6	22	3
	MICROBIOLOGY	24	1		4	4	1	5	8	1
	OTHER BIO-SCIENCES	45	4	2	5	1	1	9	15	8
	BOTANY	18	1		3		1	3	7	3
	GENETICS	8		1					5	2
	ZOOLOGY	19	3	1	2	1		6	3	3
	MISC. BIOLOGY									
	MEDICAL SCIENCES	3	1			1		1		
	AGRIC. SCIENCES	22						6	7	9
	PSYCHOLOGY	15			2	2	3	3	5	
	SOCIAL SCIENCES	51	1		2		13	10	20	5
	SOCIOLOGY	12			2		4	3	2	1
	ECONOMICS	20					5	4	8	3
	POLITICAL SCIENCE	9	1				3	2	2	1
	HIST., GEOGRAPHY	10					1	1	8	
	M-P-E FIELDS	82	1	1		3	4	24	38	11
	MATHEMATICS	9						2	4	3
	PHYSICAL SCIENCES	63	1	1		2	3	21	29	6
	PHYSICS	25	1				1	11	9	3
	CHEMISTRY	25		1		2	1	5	14	2
	GEOLOGY	13					1	5	6	1
	ENGINEERING	10				1	1	1	5	2
	ALL OTHER FIELDS	23	2	1			8	2	9	1
	LANG. & LIT.	8	1				4		3	
	ARTS, HUMANITIES	7					2	1	3	1
	PROFESSIONS	4					1	1	2	
	EDUCATION	4	1	1			1		1	

Appendix 7, continued

NUMBERS OF CASES WITH VARIOUS CATEGORIES OF PRESENT RESEARCH SUPPORT

COHORT	FIELD	TOTAL GROUP	RESEARCH PHS-SUPPORTED				NOT SUPPORTED BY PHS			
			OTHER SUPPORT				OTHER SUPPORT			
			NONE	ONLY GOVT	ONLY PRIV	BOTH	NONE	ONLY GOVT	ONLY PRIV	BOTH
COHORT 1945	TOTAL, ALL FIELDS	336	30	8	29	22	29	57	115	46
	BIO-SCIENCES, TOTAL	129	20	5	20	14	5	17	34	14
	BASIC MED. SCIENCES	65	17	4	12	8	2	6	15	1
	PHYSIOLOGY	15	2	2	5	1	1	2	2	
	PHARMACOLOGY	3							3	
	BIOCHEMISTRY	30	10	2	6	6	1		4	1
	MICROBIOLOGY	17	5		1	1		4	6	
	OTHER BIO-SCIENCES	64	3	1	8	6	3	11	19	13
	BOTANY	31	1		2	2	2	5	12	7
	GENETICS	5						1	1	3
	ZOOLOGY	28	2	1	6	4	1	5	6	3
	MISC. BIOLOGY									
	MEDICAL SCIENCES	7	2		2	1		1	1	
	AGRIC. SCIENCES	30			1	2	2	4	14	7
	PSYCHOLOGY	19	4		3	2	3	3	2	2
	SOCIAL SCIENCES	45	2				8	4	24	7
	SOCIOLOGY	9	1				3	2	1	2
	ECONOMICS	24	1				2	2	17	2
	POLITICAL SCIENCE	4					1			3
	HIST., GEOGRAPHY	8					2		6	
	M-P-E FIELDS	79	2	2	3	3	2	26	26	15
	MATHEMATICS	16				2	1	6	1	6
	PHYSICAL SCIENCES	54	2	2	3	1		17	20	9
	PHYSICS	22				1		11	4	6
	CHEMISTRY	23	2	2	3			4	11	1
	GEOLOGY	9						2	5	2
	ENGINEERING	9					1	3	5	
	ALL OTHER FIELDS	27		1			9	2	14	1
	LANG. & LIT.	12		1			5		6	
	ARTS, HUMANITIES	6					4		2	
	PROFESSIONS	6						2	4	
	EDUCATION	3							2	1
COHORT 1950	TOTAL, ALL FIELDS	487	42	10	32	32	20	104	155	92
	BIO-SCIENCES, TOTAL	198	38	6	24	19	4	26	50	31
	BASIC MED. SCIENCES	121	27	3	22	15	3	13	30	8
	PHYSIOLOGY	22	8	1	2	1		2	5	3
	PHARMACOLOGY	10	1		1	2			5	1
	BIOCHEMISTRY	48	10	1	11	7	1	7	11	
	MICROBIOLOGY	41	8	1	8	5	2	4	9	4
	OTHER BIO-SCIENCES	77	11	3	2	4	1	13	20	23
	BOTANY	30	4	1		2		6	8	9
	GENETICS	12			1				7	4
	ZOOLOGY	35	7	2	1	2	1	7	5	10
	MISC. BIOLOGY									
	MEDICAL SCIENCES	12	2	1	2	3			3	1
	AGRIC. SCIENCES	51			1	4	3	5	17	21
	PSYCHOLOGY	17	1	1	3	1		4	2	5
	SOCIAL SCIENCES	37		1	2	2	3	6	19	4
	SOCIOLOGY	13			2	2		2	5	2
	ECONOMICS	10						2	7	1
	POLITICAL SCIENCE	5						1	3	1
	HIST., GEOGRAPHY	9		1			3	1	4	
	M-P-E FIELDS	151	1	1		2	5	61	53	29
	MATHEMATICS	25						9	6	10
	PHYSICAL SCIENCES	107	1	1		1	3	48	36	17
	PHYSICS	37		1			1	22	6	7
	CHEMISTRY	28	1			1	1	7	16	2
	GEOLOGY	42					1	19	14	8
	ENGINEERING	19				1	2	4	10	2
	ALL OTHER FIELDS	21				1	5	2	12	1
	LANG. & LIT.	5					2		3	
	ARTS, HUMANITIES	8					2	1	4	1
	PROFESSIONS	5				1		1	3	
	EDUCATION	3					1		2	

Appendix 7, continued

NUMBERS OF CASES WITH VARIOUS CATEGORIES OF PRESENT RESEARCH SUPPORT

COHORT	FIELD	TOTAL GROUP	RESEARCH PHS-SUPPORTED				NOT SUPPORTED BY PHS			
			OTHER SUPPORT				OTHER SUPPORT			
			NONE	ONLY GOVT	ONLY PRIV	BOTH	NONE	ONLY GOVT	ONLY PRIV	BOTH
COHORT 1955	TOTAL, ALL FIELDS	768	89	32	75	30	52	143	224	123
	BIO-SCIENCES, TOTAL	378	68	28	60	18	13	64	82	45
	BASIC MED. SCIENCES	259	53	20	55	10	10	36	53	22
	PHYSIOLOGY	74	22	4	18	2	1	6	10	11
	PHARMACOLOGY	21	6	2	4			2	5	2
	BIOCHEMISTRY	95	12	9	20	4	7	9	26	8
	MICROBIOLOGY	69	13	5	13	4	2	19	12	1
	OTHER BIO-SCIENCES	119	15	8	5	8	3	28	29	23
	BOTANY	45	2		1	2		14	18	8
	GENETICS	15	3	1		4		1	2	4
	ZOOLOGY	35	6	3	2	1	2	6	5	10
	MISC. BIOLOGY	24	4	4	2	1	1	7	4	1
	MEDICAL SCIENCES	20	4		3	1	2	2	7	1
	AGRIC. SCIENCES	78	2		4	5	2	10	28	27
	PSYCHOLOGY	20	2	3	3	2		5	4	1
	SOCIAL SCIENCES	74	5		4	1	12	9	32	11
	SOCIOLOGY	26	4		4	1	1	2	8	6
	ECONOMICS	18					1	4	9	4
	POLITICAL SCIENCE	18					4	2	11	1
	HIST., GEOGRAPHY	12	1				6	1	4	
	M-P-E FIELDS	171	6			2	12	49	65	37
	MATHEMATICS	32	2				3	8	11	8
	PHYSICAL SCIENCES	107	4			2	5	32	42	22
	PHYSICS	37					1	12	12	12
	CHEMISTRY	41	4			1	4	5	20	7
	GEOLOGY	29				1		15	10	3
	ENGINEERING	32					4	9	12	7
	ALL OTHER FIELDS	27	2	1	1	1	11	4	6	1
	LANG. & LIT.	5				1	3		1	
	ARTS, HUMANITIES	10	1	1			5	2		1
	PROFESSIONS	10			1		3	1	5	
	EDUCATION	2	1					1		
COHORT 1960	TOTAL, ALL FIELDS	1000	134	25	90	19	102	165	337	128
	BIO-SCIENCES, TOTAL	524	123	22	82	13	17	74	152	41
	BASIC MED. SCIENCES	338	101	18	63	8	7	38	90	13
	PHYSIOLOGY	76	17	3	17	2	1	8	23	5
	PHARMACOLOGY	20	7		1		1	1	10	
	BIOCHEMISTRY	156	47	10	29	5	2	15	42	6
	MICROBIOLOGY	86	30	5	16	1	3	14	15	2
	OTHER BIO-SCIENCES	186	22	4	19	5	10	36	62	28
	BOTANY	53	4		7	1	3	6	24	8
	GENETICS	37	5	2	3	1	2	7	12	5
	ZOOLOGY	50	3		5	2	2	12	18	8
	MISC. BIOLOGY	46	10	2	4	1	3	11	8	7
	MEDICAL SCIENCES	16	3		1			2	9	1
	AGRIC. SCIENCES	53	1		1			12	26	13
	PSYCHOLOGY	23	2	2	3	1		6	6	3
	SOCIAL SCIENCES	93	3	1	2	2	13	9	46	17
	SOCIOLOGY	29	3	1	2	1	4	3	11	4
	ECONOMICS	33				1		4	16	12
	POLITICAL SCIENCE	19					5	2	11	1
	HIST., GEOGRAPHY	12					4		8	
	M-P-E FIELDS	251	1		1	1	59	60	80	49
	MATHEMATICS	50	1				4	14	16	15
	PHYSICAL SCIENCES	150			1	1	4	46	64	34
	PHYSICS	55				1	1	16	16	21
	CHEMISTRY	58			1		1	13	35	8
	GEOLOGY	37					2	17	13	5
	ENGINEERING	51					51			
	ALL OTHER FIELDS	40	1			2	13	2	18	4
	LANG. & LIT.	11	1				6		4	
	ARTS, HUMANITIES	14				1	6		7	
	PROFESSIONS	11				1	1	1	6	2
	EDUCATION	4						1	1	2

Appendix 8

SOURCES OF SUPPORT FOR GRADUATE EDUCATION, IN PERCENT

COHORT	FIELD	TOTAL	UNIV	V.A.	OTHR GOVT	PRIV FDN.	OTHR FSHP	HUSB WIFE	FA., MO.	OWN EARN	SAV-INGS	BOR-ROW.	OTHER
ALL	TOTAL, ALL FIELDS	100.0	34.8	8.7	5.5	2.9	3.1	7.5	7.0	21.5	5.3	2.0	1.7
COHORT 1935	TOTAL, ALL FIELDS	100.0	40.9	.1	.4	2.3	1.6	3.7	11.8	27.9	6.9	3.1	1.3
	BIO-SCIENCES, TOTAL	100.0	51.3	.5	.7	3.2	2.6	3.5	8.7	20.2	5.6	2.8	.9
	BASIC MED. SCIENCES	100.0	49.3	.7	.6	5.3	3.6	3.8	8.6	18.2	6.1	2.7	1.1
	PHYSIOLOGY	100.0	58.4			6.1	.4	3.9	11.3	12.9	5.0	2.0	
	PHARMACOLOGY	99.9	27.9		.7		15.0	1.4	5.0	27.1	9.3	6.4	7.1
	BIOCHEMISTRY	99.9	53.1			4.4	4.1	3.4	7.8	18.4	7.8	.9	
	MICROBIOLOGY	100.1	38.0	2.4	2.0	6.3	5.0	4.6	5.9	24.1	5.7	4.1	2.0
	OTHER BIO-SCIENCES	99.9	53.4	.3	.8	1.1	1.6	3.2	8.7	22.2	5.1	2.9	.6
	BOTANY	100.0	50.4	.9	1.6	1.4	3.3	3.0	9.1	22.6	3.3	2.6	1.8
	GENETICS	100.0	58.3				3.9	6.7		20.0	8.3	2.8	
	ZOOLOGY	100.1	55.2		.8	1.8		1.9	11.6	22.6	4.7	1.5	
	MISC. BIOLOGY	100.0	52.4					4.1	7.2	22.1	7.6	6.6	
	MEDICAL SCIENCES	100.1	23.0			14.1	1.6	6.8	18.1	28.6	3.8	3.8	.3
	AGRIC. SCIENCES	99.9	54.2		1.4	.3	3.0	4.2	3.7	23.6	4.9	4.2	.4
	PSYCHOLOGY	99.9	34.6		.2	4.9		3.4	10.8	32.7	9.3	3.7	.3
	SOCIAL SCIENCES	99.8	31.9		.1	1.7	.6	5.0	14.0	33.2	8.5	3.5	1.3
	SOCIOLOGY	100.1	24.1		.3	2.3	1.3	7.7	13.8	37.6	7.2	3.4	2.4
	ECONOMICS	100.1	35.3			2.0	.4	2.0	9.4	37.1	10.8	3.1	
	POLITICAL SCIENCE	100.1	46.1	.2		.9	.5	4.0	20.2	21.1	5.3	1.6	.2
	HIST., GEOGRAPHY	100.1	24.2		.2	1.8	.2	5.4	12.3	36.5	11.4	6.0	2.1
	M-P-E FIELDS	100.0	45.0		.2	.9	1.8	2.1	14.4	25.4	6.1	2.8	1.3
	MATHEMATICS	100.1	48.5				1.1	.6	12.9	22.8	6.8	2.5	4.9
	PHYSICAL SCIENCES	99.8	47.5		.3	.3	1.4	2.6	13.3	25.3	5.7	2.8	.6
	PHYSICS	100.0	51.8		.3	.3	.8	3.5	12.7	21.7	6.8	1.5	.6
	CHEMISTRY	100.0	50.3		.1		2.8	1.5	12.5	26.1	3.9	1.9	.9
	GEOLOGY	100.0	38.8	.2	.5	.8	.2	3.1	15.1	28.6	6.8	5.6	.3
	ENGINEERING	100.1	33.8		.2	3.4	3.7	2.0	19.1	28.2	6.8	2.9	
	ALL OTHER FIELDS	100.1	27.8			1.5	.9	4.5	12.2	38.7	8.9	2.8	2.8
	LANG. & LIT.	100.0	33.0			.3		5.7	13.3	34.3	7.4	1.7	4.3
	ARTS, HUMANITIES	100.1	28.9			2.0	1.9	5.4	16.3	28.1	10.6	2.8	4.1
	PROFESSIONS	99.9	24.5		.2	1.2	2.1	2.6	13.1	44.0	6.7	4.5	1.0
	EDUCATION	100.0	19.7			3.3		2.8	2.8	56.7	11.9	2.8	
COHORT 1940	TOTAL, ALL FIELDS	100.2	42.2	.1	1.1	2.6	3.5	4.3	10.6	25.0	5.4	3.2	2.2
	BIO-SCIENCES, TOTAL	100.0	48.0		1.5	3.4	4.7	4.3	9.6	20.6	4.1	2.5	1.3
	BASIC MED. SCIENCES	100.0	47.3		1.3	3.8	5.9	4.2	10.4	19.9	4.0	2.4	.8
	PHYSIOLOGY	100.0	48.9		.7	3.4	2.9	4.6	10.8	21.7	4.0	1.6	1.4
	PHARMACOLOGY	100.0	25.0			2.9	23.8	2.5	20.8	19.2	.8	1.7	3.3
	BIOCHEMISTRY	100.1	49.5		.6	5.2	5.2	3.7	9.9	19.3	3.5	2.8	.4
	MICROBIOLOGY	100.1	48.0		3.5	2.2	6.0	5.2	7.8	18.8	5.7	2.9	
	OTHER BIO-SCIENCES	99.9	49.4		1.9	2.5	2.2	4.5	8.1	21.9	4.3	2.7	2.4
	BOTANY	99.9	47.0		1.6	2.8	.9	4.9	7.8	23.6	2.1	2.5	6.7
	GENETICS	99.9	50.0		5.0		3.1	3.4	8.4	17.5	8.1	4.4	
	ZOOLOGY	99.9	50.9		1.0	3.2	3.0	4.7	7.7	22.5	4.7	2.2	
	MISC. BIOLOGY	100.0	50.0						50.0				
	MEDICAL SCIENCES	100.0	21.6		.4	15.2	4.0	3.2	14.8	36.8	.8	3.2	
	AGRIC. SCIENCES	99.9	42.7		4.8	1.4	9.4	3.1	4.2	27.0	3.2	4.1	
	PSYCHOLOGY	99.9	43.7			1.4	1.3	7.1	12.7	22.4	3.7	3.8	3.8
	SOCIAL SCIENCES	100.0	33.7	.2	.3	3.8	1.4	4.6	11.8	27.0	8.1	4.2	4.9
	SOCIOLOGY	100.0	30.2	.7	1.0	3.7	1.3	2.8	15.7	26.8	7.5	6.3	4.0
	ECONOMICS	100.1	36.7			6.3	3.3	4.1	7.4	23.2	10.0	2.9	6.2
	POLITICAL SCIENCE	99.8	36.3			3.8		8.3	9.4	31.0	5.6	3.3	2.1
	HIST., GEOGRAPHY	100.0	30.9		.2	.2		4.2	15.8	28.9	8.5	4.5	6.8
	M-P-E FIELDS	100.2	49.6	.1	.7	1.3	3.8	3.4	12.0	21.2	4.5	2.8	.8
	MATHEMATICS	101.4	56.9		.5	.3	1.5	1.6	9.2	21.1	6.1	2.6	1.6
	PHYSICAL SCIENCES	99.9	50.3	.1	.5	1.8	3.1	4.4	14.7	18.4	3.0	2.8	.8
	PHYSICS	100.0	57.2		.4	.6	2.4	6.7	14.8	11.9	3.0	2.4	.6
	CHEMISTRY	99.9	54.6		.4	2.7	4.4	2.2	14.6	14.7	2.3	2.9	1.1
	GEOLOGY	100.0	38.8	.4	.7	1.6	2.2	5.0	14.7	28.9	3.8	3.2	.7
	ENGINEERING	99.9	40.4		1.8	.4	8.4	1.6	5.1	30.9	8.5	2.8	
	ALL OTHER FIELDS	100.0	26.0	.2	.6	.9	1.4	4.6	10.6	39.2	8.8	3.9	3.8
	LANG. & LIT.	99.9	33.1			.1	.9	4.3	15.7	29.4	5.4	6.4	4.6
	ARTS, HUMANITIES	100.1	28.4	.2	1.8	1.1	2.8	5.1	13.1	34.1	8.9	3.0	1.6
	PROFESSIONS	100.1	22.1	1.1	.3	2.4	1.3	4.7	9.5	42.1	8.7	2.9	5.0
	EDUCATION	100.0	16.6			.6	.4	4.2	1.6	56.2	13.6	2.4	4.4

Appendix 8, continued

SOURCES OF SUPPORT FOR GRADUATE EDUCATION, IN PERCENT

COHORT	FIELD	TOTAL	UNIV	V.A.	OTHR GOVT	PRIV FDN.	OTHR FSHP	HUSB WIFE	FA., MO.	OWN EARN	SAV-INGS	BOR-ROW	OTHER
COHORT 1945	TOTAL, ALL FIELDS	100.0	40.2	.7	2.4	2.7	3.9	5.8	7.4	27.2	5.4	1.9	2.4
	BIO-SCIENCES, TOTAL	100.1	46.9	.9	2.2	3.7	5.0	6.0	6.7	21.1	3.9	1.8	1.9
	BASIC MED. SCIENCES	99.8	43.9	.7	2.1	5.5	7.3	4.9	6.5	22.7	3.9	.9	1.4
	PHYSIOLOGY	100.1	43.2		1.5	2.1	6.2	2.4	13.8	29.7	1.2		
	PHARMACOLOGY	100.0	36.1			.6	12.2	3.9	.6	33.9	3.3	1.1	8.3
	BIOCHEMISTRY	100.0	48.5		4.4	8.7	6.9	3.3	4.4	16.9	4.6	1.3	1.0
	MICROBIOLOGY	99.9	40.8	2.7		5.9	6.8	10.5	6.2	20.5	5.4	1.1	
	OTHER BIO-SCIENCES	100.0	49.6	1.1	2.2	2.1	3.0	6.9	6.8	19.6	3.8	2.5	2.4
	BOTANY	99.8	52.2	2.2	2.8	1.0	4.6	6.7	6.9	15.2	3.9	1.9	2.4
	GENETICS	100.0	59.2			7.5		9.2	.8	20.8		2.5	
	ZOOLOGY	99.7	46.5	.4	2.0	2.1	2.1	6.4	7.6	23.0	4.0	2.9	2.7
	MISC. BIOLOGY	100.0	30.0					40.0			30.0		
	MEDICAL SCIENCES	100.0	31.2		8.8	6.4	2.0	10.0	9.6	20.4	8.8	2.0	.8
	AGRIC. SCIENCES	100.0	49.1	.3	3.8	1.4	13.1	4.7	2.3	17.7	6.7	.9	
	PSYCHOLOGY	100.1	39.1	1.9	.8	.3		8.9	13.4	26.5	3.9	1.5	3.8
	SOCIAL SCIENCES	100.0	35.2	1.0	1.0	3.3	2.9	7.3	8.1	30.0	6.6	2.8	1.8
	SOCIOLOGY	100.0	33.5	1.7	.5	4.9	4.8	9.2	10.6	24.6	5.7	3.2	1.3
	ECONOMICS	100.2	39.3	1.2	2.9	5.0	.7	4.5	5.7	29.1	8.6	1.6	1.6
	POLITICAL SCIENCE	99.9	33.7		.3	1.3	4.0	5.0	15.3	30.3	7.7	2.3	
	HIST., GEOGRAPHY	99.9	33.3	.5		1.2	3.1	9.4	5.8	34.8	4.9	3.8	3.1
	M-P-E FIELDS	99.9	48.0	.3	4.7	2.4	3.1	3.6	7.4	25.0	3.1	1.4	.9
	MATHEMATICS	99.9	47.1	.6	4.8	1.6	.6	3.2	8.7	26.0	4.7	1.0	1.6
	PHYSICAL SCIENCES	100.1	49.6	.3	5.1	2.6	2.3	3.9	7.8	23.0	2.9	1.8	.8
	PHYSICS	100.0	53.1	.5	3.5	2.6	.2	2.3	8.6	23.2	3.1	1.4	1.5
	CHEMISTRY	100.0	51.4		9.0	2.7	2.3	6.4	4.7	19.4	2.1	1.5	.5
	GEOLOGY	100.0	40.0	.5		2.4	5.8	1.3	12.6	30.0	4.2	3.2	
	ENGINEERING	99.9	42.8		2.8	2.6	9.8	2.8	4.3	31.7	2.0	.4	.7
	ALL OTHER FIELDS	100.1	24.9	.3	.6	1.7	3.2	5.7	7.1	39.6	8.7	2.4	5.9
	LANG. & LIT.	100.0	39.7	.3	.6	.5	.9	4.8	10.0	22.7	7.7	2.2	10.6
	ARTS, HUMANITIES	100.1	26.0	.7		3.6	4.8	7.4	10.0	32.4	4.5	2.4	8.3
	PROFESSIONS	100.1	27.0		.6	1.3	3.8	2.5	8.3	46.8	5.3	2.6	1.9
	EDUCATION	100.2	8.2	.2	1.1	2.0	3.9	8.2	1.4	54.7	15.2	2.3	3.0
COHORT 1950	TOTAL, ALL FIELDS	99.9	26.9	23.8	5.7	2.2	3.4	6.8	4.6	16.6	6.9	1.3	1.7
	BIO-SCIENCES, TOTAL	100.0	30.6	25.6	6.2	4.1	4.2	6.3	4.1	11.9	5.5	1.1	.4
	BASIC MED. SCIENCES	100.1	28.7	25.7	8.2	5.5	4.2	6.2	3.7	12.3	4.3	.9	.4
	PHYSIOLOGY	100.0	26.5	16.0	17.2	3.3	5.1	9.1	3.7	13.7	4.2	1.2	
	PHARMACOLOGY	100.0	24.8	22.4	7.6	19.3	2.4	2.1	.7	16.6	.7		3.4
	BIOCHEMISTRY	99.8	27.0	26.3	8.9	3.7	6.5	5.1	5.8	9.6	5.7	1.2	
	MICROBIOLOGY	99.9	33.0	31.6	2.8	3.5	1.8	7.2	2.5	12.8	4.1	.6	
	OTHER BIO-SCIENCES	100.1	33.3	25.3	3.4	2.1	4.3	6.6	4.7	11.4	7.2	1.4	.4
	BOTANY	99.9	35.9	23.9	2.7		3.8	7.9	3.1	14.1	7.7	.8	
	GENETICS	100.0	27.1	22.9	.7	9.3	7.1	5.0	2.1	10.0	8.6	2.9	4.3
	ZOOLOGY	99.8	32.1	26.9	4.5	2.6	4.2	5.7	6.4	9.4	6.5	1.5	
	MISC. BIOLOGY												
	MEDICAL SCIENCES	100.0	22.4	7.6	15.6	9.7	4.4	5.9	8.5	18.8	4.7	2.4	
	AGRIC. SCIENCES	99.9	34.4	25.5	2.4	2.0	6.4	8.4	1.4	8.4	7.8	.8	2.4
	PSYCHOLOGY	99.9	21.3	27.1	18.6	1.5	.7	8.8	3.2	14.4	2.7	1.6	
	SOCIAL SCIENCES	100.0	23.3	27.7	.8	1.5	1.3	8.4	4.3	19.6	9.2	1.6	2.3
	SOCIOLOGY	100.1	26.8	23.0	.4	3.0	.4	10.7	4.6	18.6	8.2	.9	3.5
	ECONOMICS	100.0	25.8	21.9	.8	3.6	.9	7.0	4.0	21.9	7.5	2.8	3.8
	POLITICAL SCIENCE	100.2	18.8	36.5	1.1		.7	9.2	4.9	18.9	6.0	1.3	2.8
	HIST., GEOGRAPHY	100.0	23.2	26.9	.8	.4	2.7	6.8	3.9	19.3	14.2	1.8	
	M-P-E FIELDS	100.0	30.8	21.7	8.4	.7	4.8	5.6	4.9	14.6	6.4	1.2	.9
	MATHEMATICS	100.0	34.2	24.6	5.1	.3	.4	3.6	7.2	15.7	6.0	.7	2.2
	PHYSICAL SCIENCES	99.8	30.9	22.1	8.1	.8	4.9	6.6	4.7	12.5	6.8	1.7	.7
	PHYSICS	100.0	32.8	19.9	15.3	.5	2.6	5.7	5.9	8.3	6.4	1.7	.9
	CHEMISTRY	99.9	30.9	26.5	5.2	1.2	9.2	7.1	4.4	7.5	6.1	1.3	.5
	GEOLOGY	100.1	29.3	20.7	4.2	.9	3.7	7.1	3.8	19.9	7.8	1.9	.8
	ENGINEERING	100.1	28.2	18.5	11.5	.8	7.7	4.1	3.8	19.7	5.3	.2	.3
	ALL OTHER FIELDS	100.0	17.9	20.8	.7	1.5	1.8	6.5	6.6	28.0	9.3	1.7	5.2
	LANG. & LIT.	100.0	28.8	23.0	1.1	2.3	.3	6.3	7.9	20.1	8.1	.7	1.4
	ARTS, HUMANITIES	100.0	20.0	21.7		2.0	.6	7.3	8.9	20.9	8.5	1.2	8.9
	PROFESSIONS	100.1	13.6	13.6	1.7	1.5	6.8	6.6	8.5	26.1	7.8	4.1	9.8
	EDUCATION	99.9	7.9	23.9			.4	5.7	1.3	45.2	12.8	1.2	1.5

Appendix 8, continued

SOURCES OF SUPPORT FOR GRADUATE EDUCATION, IN PERCENT

COHORT	FIELD	TOTAL	UNIV	V.A.	OTHR GOVT	PRIV FDN.	OTHR FSHP	HUSB WIFE	FA., MO	OWN EARN	SAV-INGS	BOR-ROW	OTHER
COHORT 1955	TOTAL, ALL FIELDS	99.8	29.7	13.8	8.3	2.9	3.1	11.3	5.5	17.8	4.6	1.6	1.2
	BIO-SCIENCES, TOTAL	100.1	34.2	11.1	10.6	3.9	3.4	12.5	5.1	14.6	2.9	1.1	.7
	BASIC MED. SCIENCES	100.1	31.5	10.8	11.9	4.0	3.9	12.8	5.3	14.9	3.2	1.0	.8
	PHYSIOLOGY	100.2	31.9	11.0	8.6	3.3	3.3	14.3	7.3	16.1	2.8	1.2	.4
	PHARMACOLOGY	99.9	26.6	7.7	8.0	5.4	7.1	11.4	6.0	18.6	6.0	3.1	
	BIOCHEMISTRY	99.9	31.2	8.7	16.9	4.4	4.4	14.2	5.6	9.7	2.8	.6	1.4
	MICROBIOLOGY	100.2	32.9	13.9	10.8	3.8	3.2	10.1	2.8	18.3	3.1	.7	.6
	OTHER BIO-SCIENCES	100.1	38.9	11.5	8.2	3.7	2.5	12.1	4.7	14.2	2.5	1.2	.6
	BOTANY	100.1	43.7	11.0	6.2	4.9	2.8	12.3	5.2	11.7	1.7	.6	
	GENETICS	100.1	36.2	14.8	11.0		8.6	10.0	1.4	10.0	1.0		7.1
	ZOOLOGY	100.1	35.9	12.8	6.1	2.9	1.6	12.3	5.3	17.7	3.6	1.9	
	MISC. BIOLOGY	100.0	35.6	7.5	17.8	5.0	.3	11.9	3.4	14.1	2.8	1.6	
	MEDICAL SCIENCES	100.0	29.8	4.8	5.4	7.9	5.9	9.7	7.9	15.4	10.5	2.7	
	AGRIC. SCIENCES	100.0	35.7	15.2	5.3	3.8	3.9	11.1	3.2	12.7	6.0	2.0	1.1
	PSYCHOLOGY	99.9	21.4	16.7	11.8	1.6	.1	14.9	6.0	21.6	4.4	1.4	
	SOCIAL SCIENCES	100.0	25.3	20.2	2.4	2.5	1.4	11.5	6.4	20.1	6.7	2.0	1.5
	SOCIOLOGY	100.1	24.7	19.6	3.7	3.2		12.2	5.9	22.1	4.0	2.1	2.6
	ECONOMICS	100.0	29.4	22.0	2.9	2.7	3.1	9.4	6.3	16.3	5.4	1.3	1.2
	POLITICAL SCIENCE	100.0	25.6	21.1	1.2	3.3	.4	12.1	7.2	18.3	8.7	2.1	
	HIST., GEOGRAPHY	100.0	21.1	17.9	1.6	.7	2.1	12.6	6.2	24.1	8.9	2.5	2.3
	M-P-E FIELDS	99.9	32.7	10.4	14.0	2.0	4.8	9.8	5.0	15.6	3.6	1.3	.7
	MATHEMATICS	99.9	33.6	12.3	10.9	.8	1.6	8.8	6.8	19.1	4.7	1.3	
	PHYSICAL SCIENCES	99.9	31.6	10.6	16.4	2.1	5.0	10.7	5.2	12.6	3.1	1.4	1.2
	PHYSICS	99.9	32.9	11.4	17.7	.9	3.3	11.3	5.2	13.9	1.7	.6	1.0
	CHEMISTRY	100.0	35.5	3.6	20.5	4.4	5.1	10.0	5.3	7.9	3.8	2.2	1.7
	GEOLOGY	100.0	26.1	17.6	10.6	.8	6.5	10.8	5.2	16.5	3.7	1.4	.8
	ENGINEERING	99.8	34.3	7.4	11.4	3.1	7.8	8.8	2.6	19.5	3.6	1.0	.3
	ALL OTHER FIELDS	100.0	18.1	19.3	2.0	1.1	1.7	9.9	6.5	29.2	6.3	2.3	3.6
	LANG. & LIT.	100.1	16.9	20.3	2.8	.2	1.5	10.5	7.5	26.4	5.6	1.5	6.9
	ARTS, HUMANITIES	100.2	26.1	18.9	1.5	.7	2.0	10.5	8.5	21.5	5.6	1.5	3.4
	PROFESSIONS	100.1	17.6	11.1	1.7	3.7	3.1	9.6	9.3	34.3	3.9	1.7	4.1
	EDUCATION	100.0	12.7	25.3	1.9	.4	.7	9.0	1.6	34.4	9.3	4.3	.4
COHORT 1960	TOTAL, ALL FIELDS	100.1	32.7	9.2	11.1	4.4	3.1	10.3	4.0	18.4	3.7	1.6	1.6
	BIO-SCIENCES, TOTAL	100.1	35.4	7.5	16.2	4.8	3.2	10.3	2.8	14.8	2.5	1.4	1.2
	BASIC MED. SCIENCES	100.1	32.2	7.2	18.2	5.6	3.1	10.3	2.5	16.1	2.2	1.5	1.2
	PHYSIOLOGY	100.1	28.8	7.1	17.6	3.7	3.6	10.8	2.5	20.4	2.9	1.4	1.3
	PHARMACOLOGY	100.1	33.0	10.7	9.0	10.3	3.0	8.7	.7	22.0	1.7	1.0	
	BIOCHEMISTRY	99.9	36.4	7.1	17.7	6.7	3.6	10.4	2.3	12.2	1.7	1.6	.2
	MICROBIOLOGY	100.0	29.0	6.5	22.0	4.6	1.6	10.2	3.0	16.3	2.4	1.6	2.8
	OTHER BIO-SCIENCES	99.9	40.1	7.9	13.1	3.6	3.4	10.2	3.3	12.8	3.0	1.3	1.2
	BOTANY	100.1	54.1	7.3	6.2	3.3	5.1	8.9	1.7	9.4	.9	2.1	1.1
	GENETICS	100.0	43.0	7.6	16.3	1.1	3.7	8.3	3.1	9.3	6.7	.9	
	ZOOLOGY	100.2	35.3	10.0	13.3	4.7	2.1	12.1	3.2	14.6	2.5	.8	1.6
	MISC. BIOLOGY	100.1	30.9	6.3	17.5	4.3	3.2	10.6	5.0	16.0	3.3	1.4	1.6
	MEDICAL SCIENCES	100.0	21.7	1.7	25.6	10.0	5.0	7.9	3.1	17.3	6.2	1.5	
	AGRIC. SCIENCES	100.1	47.2	12.2	2.8	6.3	3.8	10.0	2.4	11.2	3.2	1.0	
	PSYCHOLOGY	99.9	23.7	8.7	20.5	3.9	1.5	12.3	2.8	20.4	4.4	1.6	.1
	SOCIAL SCIENCES	100.0	29.5	12.0	1.7	5.4	1.9	10.6	6.8	23.5	4.6	2.0	2.0
	SOCIOLOGY	100.1	32.9	11.4	2.9	4.5	3.0	10.6	7.7	21.6	1.6	1.6	2.3
	ECONOMICS	100.0	31.2	12.8	.9	7.8	1.2	7.3	8.5	20.9	5.0	2.0	2.4
	POLITICAL SCIENCE	100.2	24.0	13.9	2.3	5.3	2.8	11.6	3.9	28.2	4.8	2.2	1.2
	HIST., GEOGRAPHY	100.1	29.4	10.2	.7	4.4	.7	12.7	6.8	23.8	7.2	2.3	1.9
	M-P-E FIELDS	100.0	38.0	8.0	15.8	2.6	5.3	9.2	3.5	13.5	2.0	1.3	.8
	MATHEMATICS	99.9	42.1	9.5	14.7	1.4	1.9	6.7	2.7	16.0	1.9	.8	2.2
	PHYSICAL SCIENCES	100.0	36.3	7.4	16.2	3.0	6.7	10.2	3.8	12.6	2.1	1.4	.3
	PHYSICS	100.0	35.4	4.2	21.7	1.6	5.9	7.1	5.8	16.1	1.0	1.2	
	CHEMISTRY	100.2	39.7	8.0	17.0	6.4	6.9	10.8	1.5	6.5	1.9	1.5	
	GEOLOGY	100.0	33.5	9.6	10.6	.5	7.1	12.1	4.8	16.3	3.1	1.6	.8
	ENGINEERING												
	ALL OTHER FIELDS	100.0	24.5	11.8	2.6	2.8	2.0	10.7	5.5	27.5	6.6	2.2	3.8
	LANG. & LIT.	99.9	31.6	15.2	1.6	1.9	.6	11.5	7.7	18.1	5.1	3.4	3.2
	ARTS, HUMANITIES	99.9	26.4	10.4	3.1	1.8	3.0	15.7	6.6	21.3	7.1	1.3	3.2
	PROFESSIONS	99.9	23.4	7.7	2.7	4.6	3.0	9.1	5.6	32.2	4.9	1.0	5.7
	EDUCATION	100.0	16.1	14.1	3.2	2.3	1.5	7.2	2.0	38.4	9.6	2.9	2.7

Appendix 9

SOURCES OF SUPPORT FOR FIRST POSTDOCTORAL FELLOWSHIP

COHORT	FIELD	GRAND TOTAL	WITH FSHP	PHS	NSF	DOD	OTHR FED.	IND, BUS.	PRIV FDN.	HLTH AGCY	UNIV	OTHER
ALL	TOTAL, ALL FIELDS	10016	1626	293	150	38	168	73	375	46	419	64
COHORT 1935	TOTAL, ALL FIELDS	1354	201	4	2	1	10	12	61	5	101	5
	BIO-SCIENCES, TOTAL	351	68	3	1		2	5	22	4	31	
	BASIC MED. SCIENCES	180	34	2				4	10	3	15	
	PHYSIOLOGY	79	13					1	5	1	6	
	PHARMACOLOGY	15	1								1	
	BIOCHEMISTRY	35	10	1				2	3	1	3	
	MICROBIOLOGY	51	10	1				1	2	1	5	
	OTHER BIO-SCIENCES	171	34	1	1		2	1	12	1	16	
	BOTANY	59	8				1		2		5	
	GENETICS	19	5						3		2	
	ZOOLOGY	63	14	1	1		1	1	4	1	5	
	MISC. BIOLOGY	30	7						3		4	
	MEDICAL SCIENCES	39	5	1					2		2	
	AGRIC. SCIENCES	77	6					1			5	
	PSYCHOLOGY	61	10				1		2		7	
	SOCIAL SCIENCES	254	39			1	2	1	8	1	24	2
	SOCIOLOGY	78	19						1		17	1
	ECONOMICS	56	4				1		2		1	
	POLITICAL SCIENCE	61	7			1		1	1	1	2	1
	HIST., GEOGRAPHY	59	9				1		4		4	
	M-P-E FIELDS	346	41		1		1	5	11		22	1
	MATHEMATICS	69	13		1		1	1	2		8	
	PHYSICAL SCIENCES	206	25					3	7		14	1
	PHYSICS	71	13					1	3		8	1
	CHEMISTRY	76	8					2	1		5	
	GEOLOGY	59	4						3		1	
	ENGINEERING	71	3					1	2			
	ALL OTHER FIELDS	226	32				4		16		10	2
	LANG. & LIT.	77	13				3		5		5	
	ARTS, HUMANITIES	60	14						8		4	2
	PROFESSIONS	48	4				1		2		1	
	EDUCATION	41	1						1			
COHORT 1940	TOTAL, ALL FIELDS	1610	218	5	9	3	27	24	64	2	79	5
	BIO-SCIENCES, TOTAL	570	99	4	5	1	5	12	29	2	38	3
	BASIC MED. SCIENCES	378	76	1	1	1	4	12	24	2	29	2
	PHYSIOLOGY	112	21			1	4	1	6	1	8	
	PHARMACOLOGY	25	9					2	1		6	
	BIOCHEMISTRY	155	33	1	1			8	12	1	8	2
	MICROBIOLOGY	86	13					1	5		7	
	OTHER BIO-SCIENCES	192	23	3	4		1		5		9	1
	BOTANY	69	5		2						3	
	GENETICS	32	4						2		1	1
	ZOOLOGY	90	13	3	2		1		3		4	
	MISC. BIOLOGY	1	1								1	
	MEDICAL SCIENCES	31	1						1			
	AGRIC. SCIENCES	74	3				1	2				
	PSYCHOLOGY	83	6				1		2		3	
	SOCIAL SCIENCES	252	38			1	8	3	10		16	
	SOCIOLOGY	65	10				1		3		6	
	ECONOMICS	80	11			1	3	1	4		2	
	POLITICAL SCIENCE	49	6				1	1	1		3	
	HIST., GEOGRAPHY	58	11				3	1	2		5	
	M-P-E FIELDS	367	37	1	4	1	5	7	9		10	
	MATHEMATICS	62	11		3	1	2		2		3	
	PHYSICAL SCIENCES	238	25	1	1		3	6	7		7	
	PHYSICS	69	8	1			1	1	5			
	CHEMISTRY	92	11				1	4	1		5	
	GEOLOGY	77	6		1		1	1	1		2	
	ENGINEERING	67	1					1				
	ALL OTHER FIELDS	233	34				7		13		12	2
	LANG. & LIT.	76	12				2		4		5	1
	ARTS, HUMANITIES	62	20				5		9		6	
	PROFESSIONS	43	1								1	
	EDUCATION	52	1									1

Appendix 9, continued

SOURCES OF SUPPORT FOR FIRST POSTDOCTORAL FELLOWSHIP

COHORT	FIELD	GRAND TOTAL	WITH FSHP	PHS	NSF	DOD	OTHR FED.	IND, BUS.	PRIV FDN.	HLTH AGCY	UNIV	OTHER
COHORT 1945	TOTAL, ALL FIELDS	1289	221	20	12	5	22	11	77	4	60	10
	BIO-SCIENCES, TOTAL	328	66	16	4		2	5	15	3	17	4
	BASIC MED. SCIENCES	156	30	6			1	4	9	2	6	2
	PHYSIOLOGY	36	6	1			1	1	2		1	
	PHARMACOLOGY	18	2					1	1			
	BIOCHEMISTRY	64	14	4				1	5		3	1
	MICROBIOLOGY	38	8	1				1	1	2	2	1
	OTHER BIO-SCIENCES	172	36	10	4		1	1	6	1	11	2
	BOTANY	69	16	1	2		1	1	4		5	2
	GENETICS	13	4		1						3	
	ZOOLOGY	89	16	9	1				2	1	3	
	MISC. BIOLOGY	1										
	MEDICAL SCIENCES	26	3	1							2	
	AGRIC. SCIENCES	65	6				1		3		2	
	PSYCHOLOGY	76	11	3					6		2	
	SOCIAL SCIENCES	257	46				7	1	22		13	3
	SOCIOLOGY	64	14				4	1	6		3	
	ECONOMICS	80	11				1		4		3	3
	POLITICAL SCIENCE	32	7						4		3	
	HIST., GEOGRAPHY	81	14				2		8		4	
	M-P-E FIELDS	296	55		8	5	7	4	14	1	15	1
	MATHEMATICS	63	18		3	1	2		3		9	
	PHYSICAL SCIENCES	185	33		3	4	4	4	10	1	6	1
	PHYSICS	67	12			3	1		5	1	1	1
	CHEMISTRY	78	17		1	1	3	4	5		3	
	GEOLOGY	40	4		2						2	
	ENGINEERING	48	4		2		1		1			
	ALL OTHER FIELDS	241	34				5	1	17		9	2
	LANG. & LIT.	67	12				3		5		4	
	ARTS, HUMANITIES	46	11				1	1	9			
	PROFESSIONS	56	10				1		3		4	2
	EDUCATION	72	1								1	
COHORT 1950	TOTAL, ALL FIELDS	1627	277	27	27	8	45	8	74	8	72	8
	BIO-SCIENCES, TOTAL	418	81	17	13		4	5	15	7	15	5
	BASIC MED. SCIENCES	246	45	12	5		3	4	9	6	4	2
	PHYSIOLOGY	43	11	4	3				2		2	
	PHARMACOLOGY	29	4					1	2	1		
	BIOCHEMISTRY	90	18	4	1		1	2	3	4	1	2
	MICROBIOLOGY	84	12	4	1		2	1	2	1	1	
	OTHER BIO-SCIENCES	172	36	5	8		1	1	6	1	11	3
	BOTANY	71	12	1	3				1		5	2
	GENETICS	14	2		1				1			
	ZOOLOGY	87	22	4	4		1	1	4	1	6	1
	MISC. BIOLOGY											
	MEDICAL SCIENCES	37	5	2		1					2	
	AGRIC. SCIENCES	103	7		1		1	1			3	1
	PSYCHOLOGY	95	9	2	1		2		1	1	2	
	SOCIAL SCIENCES	267	65	1		1	13	1	28		21	
	SOCIOLOGY	61	13				5		4		4	
	ECONOMICS	54	10				1	1	2		6	
	POLITICAL SCIENCE	75	18	1			5		9		3	
	HIST., GEOGRAPHY	77	24			1	2		13		8	
	M-P-E FIELDS	435	60	4	12	6	10	1	9		17	1
	MATHEMATICS	68	16		5	2	2		2		5	
	PHYSICAL SCIENCES	271	37	3	5	3	6		7		12	1
	PHYSICS	90	14	1	2	1	2		4		3	1
	CHEMISTRY	77	9	2	1	1	1		1		3	
	GEOLOGY	104	14		2	1	3		2		6	
	ENGINEERING	96	7	1	2	1	2	1				
	ALL OTHER FIELDS	272	50	1			15		21		12	1
	LANG. & LIT.	74	23				9		12		2	
	ARTS, HUMANITIES	69	15	1			4		7		3	
	PROFESSIONS	61	8						1		6	1
	EDUCATION	68	4				2		1		1	

Appendix 9, continued

SOURCES OF SUPPORT FOR FIRST POSTDOCTORAL FELLOWSHIP

COHORT	FIELD	GRAND TOTAL	WITH FSHP	PHS	NSF	DOD	OTHR FED.	IND, BUS.	PRIV FDN.	HLTH AGCY	UNIV	OTHER
COHORT 1955	TOTAL, ALL FIELDS	1912	338	87	43	10	37	7	59	21	57	17
	BIO-SCIENCES, TOTAL	663	169	75	17	3	12	2	13	20	20	6
	BASIC MED. SCIENCES	425	115	54	11	2	8	3	9	12	13	3
	PHYSIOLOGY	123	29	15	4		1		3	1	4	1
	PHARMACOLOGY	36	8	6						1	1	
	BIOCHEMISTRY	139	46	19	5		4		2	8	6	2
	MICROBIOLOGY	127	32	14	2	2	3	3	4	2	2	
	OTHER BIO-SCIENCES	238	54	21	6	1	4		4	8	7	3
	BOTANY	91	13	3	1	1	1			3	2	2
	GENETICS	21	7	3	1		1				1	1
	ZOOLOGY	93	20	11	1		1		4		3	
	MISC. BIOLOGY	33	14	4	3		1			5	1	
	MEDICAL SCIENCES	66	6	3	1						2	
	AGRIC. SCIENCES	125	11	1	3		3		3		1	
	PSYCHOLOGY	73	8	5	1		1				1	
	SOCIAL SCIENCES	318	59	1	2		5	1	24		20	6
	SOCIOLOGY	84	14	1	2		2	1	1		5	2
	ECONOMICS	84	15				2		9		3	1
	POLITICAL SCIENCE	76	24				1		12		9	2
	HIST., GEOGRAPHY	74	6						2		3	1
	M-P-E FIELDS	405	60	2	17	7	10	3	6	1	10	4
	MATHEMATICS	96	17		8		2		3		2	2
	PHYSICAL SCIENCES	222	37	2	7	6	5	3	3	1	8	2
	PHYSICS	70	13		2	1	3		2		3	2
	CHEMISTRY	80	17	2	3	5	2	2	1	1	1	
	GEOLOGY	72	7		2			1			4	
	ENGINEERING	87	6		2	1	3					
	ALL OTHER FIELDS	262	25		2		6		13		3	1
	LANG. & LIT.	67	5				3				1	1
	ARTS, HUMANITIES	64	10		1		2		6		1	
	PROFESSIONS	56	8				1		6		1	
	EDUCATION	75	2		1				1			
COHORT 1960	TOTAL, ALL FIELDS	2224	371	150	57	11	27	11	40	6	50	19
	BIO-SCIENCES, TOTAL	835	231	137	32	1	8	5	17	6	16	9
	BASIC MED. SCIENCES	502	164	102	18	1	6	4	11	4	14	4
	PHYSIOLOGY	140	44	25	4		2	1	2	1	5	4
	PHARMACOLOGY	30	7	4	1				2			
	BIOCHEMISTRY	205	79	48	11		3	2	6	3	6	
	MICROBIOLOGY	127	34	25	2	1	1	1	1		3	
	OTHER BIO-SCIENCES	333	67	35	14		2	1	6	2	2	5
	BOTANY	86	12	4	3		2	1	1			1
	GENETICS	56	14	9	1				1		1	2
	ZOOLOGY	103	18	9	6				2			1
	MISC. BIOLOGY	88	23	13	4				2	2	1	1
	MEDICAL SCIENCES	55	5	4							1	
	AGRIC. SCIENCES	92	7	1			2	2			2	
	PSYCHOLOGY	80	10	5	2	1	2					
	SOCIAL SCIENCES	364	51	1	2		7	4	16		18	3
	SOCIOLOGY	97	9	1	1		1		3		2	1
	ECONOMICS	82	13		1			4	7		1	
	POLITICAL SCIENCE	85	18				5		4		9	
	HIST., GEOGRAPHY	100	11				1		2		6	2
	M-P-E FIELDS	434	50	2	20	9	2		1		9	7
	MATHEMATICS	100	17	1	7	3					4	2
	PHYSICAL SCIENCES	240	33	1	13	6	2		1		5	5
	PHYSICS	69	10		3	2	1		1		2	1
	CHEMISTRY	90	18	1	8	4	1				2	2
	GEOLOGY	81	5		2						1	2
	ENGINEERING	94										
	ALL OTHER FIELDS	364	17		1		6		6		4	
	LANG. & LIT.	96	5				3		1		1	
	ARTS, HUMANITIES	78	6				2		1		3	
	PROFESSIONS	102	5				1		4			
	EDUCATION	88	1		1							

Appendix 10

DURATION OF FIRST POSTDOCTORAL FELLOWSHIP

COHORT	FIELD	NO. HOLDING FELLOWSHIPS	SUMMER ONLY	ACADEMIC CALENDAR YEAR	1-1.5 YEARS	TWO YEARS	OTHER
ALL	TOTAL, ALL FIELDS	1679	168	199	893	52	260	107
COHORT 1935	TOTAL, ALL FIELDS	209	16	20	128	6	28	11
	BIO-SCIENCES, TOTAL	70	5	7	42	1	10	5
	BASIC MED. SCIENCES	35		2	19		9	5
	PHYSIOLOGY	13		1	8		4	
	PHARMACOLOGY	1						1
	BIOCHEMISTRY	11			4		3	4
	MICROBIOLOGY	10		1	7		2	
	OTHER BIO-SCIENCES	35	5	5	23	1	1	
	BOTANY	8	2	1	5			
	GENETICS	5		1	4			
	ZOOLOGY	13	2	2	7	1	1	
	MISC. BIOLOGY	9	1	1	7			
	MEDICAL SCIENCES	7			4		2	1
	AGRIC. SCIENCES	6			6			
	PSYCHOLOGY	11		1	9		1	
	SOCIAL SCIENCES	40	4	4	20	3	6	3
	SOCIOLOGY	19	1		11	3	2	2
	ECONOMICS	5	1	1	3			
	POLITICAL SCIENCE	7	1	1	4			1
	HIST., GEOGRAPHY	9	1	2	2		4	
	M-P-E FIELDS	44		4	28	2	8	2
	MATHEMATICS	14		2	10	2		
	PHYSICAL SCIENCES	27		2	17		6	2
	PHYSICS	15		1	9		4	1
	CHEMISTRY	8		1	4		2	1
	GEOLOGY	4			4			
	ENGINEERING	3			1		2	
	ALL OTHER FIELDS	31	7	4	19		1	
	LANG. & LIT.	13	3		9		1	
	ARTS, HUMANITIES	13	2	4	7			
	PROFESSIONS	4	2		2			
	EDUCATION	1			1			
COHORT 1940	TOTAL, ALL FIELDS	232	20	33	134	4	26	15
	BIO-SCIENCES, TOTAL	107	5	9	63	3	19	8
	BASIC MED. SCIENCES	79	3	5	48	2	14	7
	PHYSIOLOGY	23	1	2	15		4	1
	PHARMACOLOGY	9		1	7		1	
	BIOCHEMISTRY	34	1	1	18	2	7	5
	MICROBIOLOGY	13	1	1	8		2	1
	OTHER BIO-SCIENCES	28	2	4	15	1	5	1
	BOTANY	8	2	2	2		2	
	GENETICS	4			3			1
	ZOOLOGY	15		2	9	1	3	
	MISC. BIOLOGY	1			1			
	MEDICAL SCIENCES	1			1			
	AGRIC. SCIENCES	3		1	1		1	
	PSYCHOLOGY	6	1	2	3			
	SOCIAL SCIENCES	39	5	10	22	1		1
	SOCIOLOGY	11	1	4	5			1
	ECONOMICS	11	1	2	7			
	POLITICAL SCIENCE	6		1	4			
	HIST., GEOGRAPHY	11	1	3	6	1		
	M-P-E FIELDS	40	3	5	22		5	5
	MATHEMATICS	12	2	2	7		1	
	PHYSICAL SCIENCES	27	1	3	14		4	5
	PHYSICS	9	1	2	5		1	
	CHEMISTRY	12		1	4		3	4
	GEOLOGY	6			5			1
	ENGINEERING	1			1			
	ALL OTHER FIELDS	36	6	6	22		1	1
	LANG. & LIT.	12	2	2	8			
	ARTS, HUMANITIES	21	3	3	14		1	
	PROFESSIONS	3	1	1				1
	EDUCATION							

Appendix 10, continued

DURATION OF FIRST POSTDOCTORAL FELLOWSHIP

COHORT	FIELD	NO. HOLDING FELLOWSHIPS	SUMMER ONLY	ACADEMIC CALENDAR 1-1.5 YEAR	YEAR	TWO YEARS	OTHER
COHORT 1945	TOTAL, ALL FIELDS	225	21	25	139	2	21	17
	BIO-SCIENCES, TOTAL	68	4	8	31	2	11	12
	BASIC MED. SCIENCES	31	1	1	15	1	9	4
	PHYSIOLOGY	5			2	1	1	1
	PHARMACOLOGY	2					1	1
	BIOCHEMISTRY	16		1	8		5	2
	MICROBIOLOGY	8	1		5		2	
	OTHER BIO-SCIENCES	37	3	7	16	1	2	8
	BOTANY	17		4	6	1	1	5
	GENETICS	4	1	1	2			
	ZOOLOGY	16	2	2	8		1	3
	MISC. BIOLOGY							
	MEDICAL SCIENCES	3	1		1			1
	AGRIC. SCIENCES	6			6			
	PSYCHOLOGY	10	2		7		1	
	SOCIAL SCIENCES	48	6	6	34		2	
	SOCIOLOGY	15	4	2	9			
	ECONOMICS	12	1	1	9		1	
	POLITICAL SCIENCE	7		1	5		1	
	HIST., GEOGRAPHY	14	1	2	11			
	M-P-E FIELDS	55	3	9	33		6	4
	MATHEMATICS	18		3	10		5	
	PHYSICAL SCIENCES	33	3	5	20		1	4
	PHYSICS	12		3	8			1
	CHEMISTRY	17	2	2	9		1	3
	GEOLOGY	4	1		3			
	ENGINEERING	4		1	3			
	ALL OTHER FIELDS	35	5	2	27		1	
	LANG. & LIT.	13	2		11			
	ARTS, HUMANITIES	10	2		7		1	
	PROFESSIONS	10	1	2	7			
	EDUCATION	2			2			
COHORT 1950	TOTAL, ALL FIELDS	284	27	35	178	2	30	12
	BIO-SCIENCES, TOTAL	89	6	7	56		15	5
	BASIC MED. SCIENCES	51		3	34		12	2
	PHYSIOLOGY	11			10			1
	PHARMACOLOGY	5			3		1	1
	BIOCHEMISTRY	22		1	14		7	
	MICROBIOLOGY	13		2	7		4	
	OTHER BIO-SCIENCES	38	6	4	22		3	3
	BOTANY	12	1	1	8		2	
	GENETICS	2			2			
	ZOOLOGY	24	5	3	12		1	3
	MISC. BIOLOGY							
	MEDICAL SCIENCES	5		1	3		1	
	AGRIC. SCIENCES	7	1	3	2			1
	PSYCHOLOGY	9		1	6		1	1
	SOCIAL SCIENCES	63	10	10	38		2	3
	SOCIOLOGY	11	1	2	6		1	1
	ECONOMICS	10	2	2	4			2
	POLITICAL SCIENCE	18		2	16			
	HIST., GEOGRAPHY	24	7	4	12		1	
	M-P-E FIELDS	61	3	8	36	2	10	.
	MATHEMATICS	16	1	3	8		4	
	PHYSICAL SCIENCES	37	2	4	23	2	4	2
	PHYSICS	14	1	2	8	1		2
	CHEMISTRY	9	1		6		2	
	GEOLOGY	14		2	9	1	2	
	ENGINEERING	8		1	5		2	
	ALL OTHER FIELDS	50	7	5	37		1	
	LANG. & LIT.	23	2	1	19		1	
	ARTS, HUMANITIES	15		3	12			
	PROFESSIONS	8	2	1	5			
	EDUCATION	4	3		1			

Appendix 10, continued

DURATION OF FIRST POSTDOCTORAL FELLOWSHIP

COHORT	FIELD	NO. HOLDING FELLOWSHIPS	SUMMER ONLY	ACADEMIC YEAR	CALENDAR YEAR	1-1.5 YEARS	TWO YEARS	OTHER
COHORT 1955	TOTAL, ALL FIELDS	344	46	3(	159	15	67	21
	BIO-SCIENCES, TOTAL	172	9	15	81	9	41	17
	BASIC MED. SCIENCES	116	6	9	52	7	30	12
	PHYSIOLOGY	29	2	2	15	3	4	3
	PHARMACOLOGY	8			3	1	3	1
	BIOCHEMISTRY	46		4	20	2	16	4
	MICROBIOLOGY	33	4	3	14	1	7	4
	OTHER BIO-SCIENCES	56	3	6	29	2	11	5
	BOTANY	15		1	8	1	3	2
	GENETICS	7	1	2	2		1	1
	ZOOLOGY	20	1	1	11	1	4	2
	MISC. BIOLOGY	14	1	2	8		3	
	MEDICAL SCIENCES	6			3	1	2	
	AGRIC. SCIENCES	11	3	5	2		1	
	PSYCHOLOGY	8		2	3		3	
	SOCIAL SCIENCES	61	17	4	31	3	6	
	SOCIOLOGY	15	5	1	5	1	3	
	ECONOMICS	16	5	1	10			
	POLITICAL SCIENCE	24	5	1	13	2	3	
	HIST., GEOGRAPHY	6	2	1	3			
	M-P-E FIELDS	60	9	5	29	2	11	4
	MATHEMATICS	17	3	2	12			
	PHYSICAL SCIENCES	37	4	3	13	2	11	4
	PHYSICS	13		2	4	1	5	1
	CHEMISTRY	17	3	1	5		5	3
	GEOLOGY	7	1		4	1	1	
	ENGINEERING	6	2		4			
	ALL OTHER FIELDS	26	8	5	10		3	
	LANG. & LIT.	5	1	1	3			
	ARTS, HUMANITIES	11		4	5		2	
	PROFESSIONS	8	5		2		1	
	EDUCATION	2	2					
COHORT 1960	TOTAL, ALL FIELDS	385	38	50	155	23	88	31
	BIO-SCIENCES, TOTAL	236	9	21	96	18	68	24
	BASIC MED. SCIENCES	168	6	16	70	11	49	16
	PHYSIOLOGY	46	3	5	19	4	11	4
	PHARMACOLOGY	7		1	4		2	
	BIOCHEMISTRY	80	2	9	32	6	22	9
	MICROBIOLOGY	35	1	1	15	1	14	3
	OTHER BIO-SCIENCES	68	3	5	26	7	19	8
	BOTANY	12		2	3	1	5	1
	GENETICS	14			5		6	3
	ZOOLOGY	19	1	2	11	1	3	1
	MISC. BIOLOGY	23	2	1	7	5	5	3
	MEDICAL SCIENCES	5			4			1
	AGRIC. SCIENCES	7		4	3			
	PSYCHOLOGY	10	1	2	1	1	3	2
	SOCIAL SCIENCES	53	17	16	17		3	
	SOCIOLOGY	11	3	1	4		3	
	ECONOMICS	13	5	5	3			
	POLITICAL SCIENCE	18	5	7	6			
	HIST., GEOGRAPHY	11	4	3	4			
	M-P-E FIELDS	56	4	4	28	4	12	4
	MATHEMATICS	18	1	1	11		5	
	PHYSICAL SCIENCES	35	2	3	16	3	7	4
	PHYSICS	11	1	2	4	1	2	1
	CHEMISTRY	19	1	1	9	2	4	2
	GEOLOGY	5			3		1	1
	ENGINEERING	3	1		1	1		
	ALL OTHER FIELDS	18	7	3	6		2	
	LANG. & LIT.	5		2	3			
	ARTS, HUMANITIES	7	3		3		1	
	PROFESSIONS	5	3	1			1	
	EDUCATION	1	1					

Appendix 11

EDUCATION OF FATHER

COHORT	FIELD	TOTAL GROUP	NUMBER TERMINATING EDUCATION AT EACH LEVEL										
			NONE	GR. 1-3	GR. 4-6	GR. 7-8	GR. 9-11	H.S. GRAD	COLL 1-3	COLL GRAD	M.D. & M A	PHD	UNK
ALL	TOTAL, ALL FIELDS	10017	215	213	878	2027	932	1612	1110	1361	887	443	339
COHORT 1935	TOTAL, ALL FIELDS	1355	23	25	132	286	110	188	140	172	129	61	89
	BIO-SCIENCES, TOTAL	352	10	10	37	82	25	53	28	44	25	11	27
	BASIC MED. SCIENCES	181	3	3	22	41	17	29	9	22	12	6	17
	PHYSIOLOGY	80	1	1	7	15	10	11	3	10	8	5	9
	PHARMACOLOGY	15			6	5	1	1					2
	BIOCHEMISTRY	35	2	1	5	6	1	7	3	7	1	1	1
	MICROBIOLOGY	51		1	4	15	5	10	3	5	3		5
	OTHER BIO-SCIENCES	171	7	7	15	41	8	24	19	22	13	5	10
	BOTANY	59	2	1	4	15	2	9	5	11	3	2	5
	GENETICS	19		2	4	1	4	4	2		1		1
	ZOOLOGY	63	1	4	7	17		9	7	8	4	3	3
	MISC. BIOLOGY	30	4			8	2	2	5	3	5		1
	MEDICAL SCIENCES	39			2	7	4	5	2	2	6	3	8
	AGRIC. SCIENCES	77	1	2	9	28	9	7	5	3	9	1	3
	PSYCHOLOGY	61			6	14	2	10	7	5	1	4	2
	SOCIAL SCIENCES	254	3	4	21	45	16	34	29	44	28	14	16
	SOCIOLOGY	78		2	3	13	5	13	8	11	11	3	9
	ECONOMICS	56		1	5	7	3	8	7	12	5	3	5
	POLITICAL SCIENCE	61	2	1	5	15	5	9	6	10	4	3	1
	HIST., GEOGRAPHY	59	1		8	10	3	4	8	11	8	5	1
	M-P-E FIELDS	346	4	6	31	68	34	55	41	44	34	17	12
	MATHEMATICS	69	2	2	11	12	4	15	8	6	3	3	3
	PHYSICAL SCIENCES	206	1	4	16	40	20	28	23	33	23	13	5
	PHYSICS	71			11	17	4	6	9	7	7	7	3
	CHEMISTRY	76	1		4	10	9	14	12	15	8	2	1
	GEOLOGY	59		4	1	13	7	8	2	11	8	4	1
	ENGINEERING	71	1		4	16	10	12	10	5	8	1	4
	ALL OTHER FIELDS	226	5	3	26	42	20	24	28	30	16	11	21
	LANG. & LIT.	77	1	1	8	20	7	9	12	7	5	1	6
	ARTS, HUMANITIES	60	3	2	7	6	5	6	5	10	6	6	4
	PROFESSIONS	48			4	7	4	6	6	7	4	3	7
	EDUCATION	41	1		7	9	4	3	5	6	1	1	4
COHORT 1940	TOTAL, ALL FIELDS	1610	45	32	131	353	129	259	185	197	131	89	59
	BIO-SCIENCES, TOTAL	570	15	6	47	151	41	95	57	66	48	28	16
	BASIC MED. SCIENCES	378	14	3	33	99	25	58	35	51	30	17	13
	PHYSIOLOGY	112	2	1	7	22	9	22	10	17	12	4	6
	PHARMACOLOGY	25	1	1	5	3	1	5	3	1	2	1	2
	BIOCHEMISTRY	155	7	1	13	47	12	21	11	23	9	9	2
	MICROBIOLOGY	86	4		8	27	3	10	11	10	7	3	3
	OTHER BIO-SCIENCES	192	1	3	14	52	16	37	22	15	18	11	3
	BOTANY	69			4	17	3	15	10	7	5	5	3
	GENETICS	32		1	5	5	4	4	4	3	3	3	
	ZOOLOGY	90	1	2	5	30	9	17	8	5	10	3	
	MISC. BIOLOGY	1						1					
	MEDICAL SCIENCES	31	2	1		6		5	4	2	5	3	3
	AGRIC. SCIENCES	74	2	4	5	28	6	11	5	4	4	3	2
	PSYCHOLOGY	83	1	2	2	14	4	11	16	10	12	8	3
	SOCIAL SCIENCES	252	9	3	20	46	24	32	30	44	22	10	12
	SOCIOLOGY	65	4	2	5	14	1	10	5	8	6	4	6
	ECONOMICS	80	1		8	15	10	9	10	16	6	1	4
	POLITICAL SCIENCE	49	3		4	8	7	9	5	5	6	1	1
	HIST., GEOGRAPHY	58	1	1	3	9	6	4	10	15	4	4	1
	M-P-E FIELDS	367	8	11	34	63	32	66	51	40	27	26	9
	MATHEMATICS	62	2	5	6	12	3	8	8	9	5	2	2
	PHYSICAL SCIENCES	238	5	4	21	33	24	44	32	27	18	24	6
	PHYSICS	69	1	1	6	7	6	12	7	10	6	11	2
	CHEMISTRY	92	2	2	9	14	10	16	16	8	5	7	3
	GEOLOGY	77	2	1	6	12	8	16	9	9	7	6	1
	ENGINEERING	67	1	2	7	18	5	14	11	4	4		1
	ALL OTHER FIELDS	233	8	5	23	45	22	39	22	31	13	11	14
	LANG. & LIT.	76	4	1	3	14	8	15	10	8	8	1	4
	ARTS, HUMANITIES	62	2	1	4	10	6	13	5	18		1	2
	PROFESSIONS	43	1	1	8	6	3	4	2	2	5	6	5
	EDUCATION	52	1	2	8	15	5	7	5	3		3	3

Appendix 11, continued

EDUCATION OF FATHER

COHORT	FIELD	TOTAL GROUP	NUMBER TERMINATING EDUCATION AT EACH LEVEL										
			NONE	GR. 1-3	GR. 4-6	GR. 7-8	GR. 9-11	H.S. GRAD	COLL 1-3	COLL GRAD	M.D. & MA	PHD	UNK
COHORT 1945	TOTAL, ALL FIELDS	1289	27	26	129	265	112	199	136	170	123	58	44
	BIO-SCIENCES, TOTAL	328	9	7	43	74	32	52	32	27	28	17	7
	BASIC MED. SCIENCES	156	7	1	19	40	10	26	15	12	13	7	6
	PHYSIOLOGY	36			6	8	1	9	4	2	3	2	1
	PHARMACOLOGY	18	1	1	3	2	2	3	3		1		2
	BIOCHEMISTRY	64	5		7	21	4	7	4	6	4	4	2
	MICROBIOLOGY	38	1		3	9	3	7	4	4	5	1	1
	OTHER BIO-SCIENCES	172	2	6	24	34	22	26	17	15	15	10	1
	BOTANY	69	1	2	10	13	7	10	7	9	8	2	
	GENETICS	13		1	2	3	2	2		1		2	
	ZOOLOGY	89	1	3	12	18	13	14	9	5	7	6	1
	MISC. BIOLOGY	1							1				
	MEDICAL SCIENCES	26		1	1	4	2	5	3	3	6		1
	AGRIC. SCIENCES	65	2	2	5	23	3	12	8	5	4		1
	PSYCHOLOGY	76	3	3	5	14	11	10	8	11	6	2	3
	SOCIAL SCIENCES	257	5	3	25	47	23	36	31	50	17	10	10
	SOCIOLOGY	64			6	12	5	10	8	15	6	2	
	ECONOMICS	80	3	1	9	13	5	12	9	14	3	5	6
	POLITICAL SCIENCE	32	1	1	1	8	4	3	4	6	1	1	2
	HIST., GEOGRAPHY	81	1	1	9	14	9	11	10	15	7	2	2
	M-P-E FIELDS	296	6	3	20	46	23	52	32	44	38	21	11
	MATHEMATICS	63	1		6	9	6	8	8	9	8	5	3
	PHYSICAL SCIENCES	185	1	2	13	29	13	35	18	30	28	11	5
	PHYSICS	67	1		3	8	3	13	5	13	14	5	2
	CHEMISTRY	78		1	8	12	9	15	9	12	6	4	2
	GEOLOGY	40		1	2	9	1	7	4	5	8	2	1
	ENGINEERING	48	4	1	1	8	4	9	6	5	2	5	3
	ALL OTHER FIELDS	241	2	7	30	57	18	32	22	30	24	8	11
	LANG. & LIT.	67		1	7	15	7	14	5	5	8	3	2
	ARTS, HUMANITIES	46		1	3	10	4	4	4	7	7	2	4
	PROFESSIONS	56	1	4	4	14	2	5	5	13	4	2	2
	EDUCATION	72	1	1	16	18	5	9	8	5	5	1	3
COHORT 1950	TOTAL, ALL FIELDS	1627	27	43	139	332	156	251	185	226	153	68	47
	BIO-SCIENCES, TOTAL	418	10	14	30	83	48	78	42	44	38	12	19
	BASIC MED. SCIENCES	246	9	7	18	48	29	51	21	24	20	8	11
	PHYSIOLOGY	43		1	4	4	5	6	4	5	10	3	1
	PHARMACOLOGY	29	2	2	1	7	2	5	4	4		1	1
	BIOCHEMISTRY	90	5	2	5	21	14	16	6	6	7	3	5
	MICROBIOLOGY	84	2	2	8	16	8	24	7	9	3	1	4
	OTHER BIO-SCIENCES	172	1	7	12	35	19	27	21	20	18	4	8
	BOTANY	71		2	4	15	10	12	8	11	3	3	3
	GENETICS	14		2		5		1	2	1	1		2
	ZOOLOGY	87	1	3	8	15	9	14	11	8	14	1	3
	MISC. BIOLOGY												
	MEDICAL SCIENCES	37	1	1	2	2	2	5	3	6	10	2	3
	AGRIC. SCIENCES	103		5	16	29	7	13	13	8	7	4	1
	PSYCHOLOGY	95	1	4	8	30	6	13	10	6	7	5	5
	SOCIAL SCIENCES	267	4	8	17	68	23	35	36	35	25	12	4
	SOCIOLOGY	61	1	3	6	15	6	7	9	3	3	5	3
	ECONOMICS	54	2	1	4	14	5	6	6	12	3	1	
	POLITICAL SCIENCE	75		2	5	16	6	8	12	9	11	5	1
	HIST., GEOGRAPHY	77	1	2	2	23	6	14	9	11	8	1	
	M-P-E FIELDS	435	5	8	41	61	43	73	43	84	46	21	10
	MATHEMATICS	68	2	2	7	14	7	9	5	11	9	1	1
	PHYSICAL SCIENCES	271	2	4	25	33	24	46	30	53	31	17	6
	PHYSICS	90			11	7	6	13	15	22	9	6	1
	CHEMISTRY	77		3	7	18	6	16	5	10	6	5	1
	GEOLOGY	104	2	1	7	8	12	17	10	21	16	6	4
	ENGINEERING	96	1	2	9	14	12	18	8	20	6	3	3
	ALL OTHER FIELDS	272	6	3	25	59	27	34	38	43	20	12	5
	LANG. & LIT.	74	1	1	5	12	9	12	6	12	10	4	2
	ARTS, HUMANITIES	69	1		4	13	4	6	12	20	5	3	1
	PROFESSIONS	61	2		5	13	5	10	9	8	4	3	2
	EDUCATION	68	2	2	11	21	9	6	11	3	1	2	

Appendix 11, continued

EDUCATION OF FATHER

COHORT	FIELD	TOTAL GROUP	NUMBER TERMINATING EDUCATION AT EACH LEVEL									
			NONE	GR. 1-3	GR. 4-6	GR. 7-8	GR. 9-11	H.S. GRAD	COLL 1-3	COLL GRAD	M.D. & MA	PHD	UNK
COHORT 1955	TOTAL, ALL FIELDS	1912	52	48	173	376	182	334	202	285	142	72	46
	BIO-SCIENCES, TOTAL	663	24	10	63	129	79	121	62	88	47	23	17
	BASIC MED. SCIENCES	425	17	6	37	88	53	80	32	54	30	16	12
	PHYSIOLOGY	123	3	1	11	24	17	21	11	18	9	5	3
	PHARMACOLOGY	36	1	2	4	9	7	4	4	2	2		1
	BIOCHEMISTRY	139	9	2	10	28	13	27	6	20	9	10	5
	MICROBIOLOGY	127	4	1	12	27	16	28	11	14	10	1	3
	OTHER BIO-SCIENCES	238	7	4	26	41	26	41	30	34	17	7	5
	BOTANY	91	2	4	11	18	10	20	11	6	6	1	2
	GENETICS	21	2		1	4	2	2	2	7		1	
	ZOOLOGY	93	3		10	14	11	15	11	15	10	2	2
	MISC. BIOLOGY	33			4	5	3	4	6	6	1	3	1
	MEDICAL SCIENCES	66	2	3	4	9	5	15	5	8	9	2	4
	AGRIC. SCIENCES	125		6	15	24	15	22	15	14	5	5	4
	PSYCHOLOGY	73	4	4	7	14	3	13	6	11	5	5	1
	SOCIAL SCIENCES	318	7	7	35	72	29	44	32	55	21	11	5
	SOCIOLOGY	84		2	9	19	11	11	8	14	6	2	2
	ECONOMICS	84	2	3	15	13	8	10	9	12	5	5	2
	POLITICAL SCIENCE	76	4	2	6	10	5	15	7	16	8	3	
	HIST., GEOGRAPHY	74	1		5	30	5	8	8	13	2	1	1
	M-P-E FIELDS	405	8	13	23	81	37	67	43	75	36	14	8
	MATHEMATICS	96	5	4	12	12	5	13	8	19	7	7	4
	PHYSICAL SCIENCES	222	3	8	8	53	20	38	21	38	23	6	4
	PHYSICS	70	1	1	2	12	8	14	8	14	6	4	
	CHEMISTRY	80		5	4	26	8	11	3	11	10		2
	GEOLOGY	72	2	2	2	15	4	13	10	13	7	2	2
	ENGINEERING	87		1	3	16	12	16	14	18	6	1	
	ALL OTHER FIELDS	262	7	5	26	47	14	52	39	34	19	12	7
	LANG. & LIT.	67	1		5	11	5	12	15	13	2	1	2
	ARTS, HUMANITIES	64			6	9	3	14	8	8	6	9	1
	PROFESSIONS	56	4	1	6	11	1	9	10	7	3	2	2
	EDUCATION	75	2	4	9	16	5	17	6	6	8		2
COHORT 1960	TOTAL, ALL FIELDS	2224	41	39	174	415	243	381	262	311	209	95	54
	BIO-SCIENCES, TOTAL	835	18	12	76	149	87	154	84	113	82	35	25
	BASIC MED. SCIENCES	502	13	6	47	101	44	96	56	63	45	18	13
	PHYSIOLOGY	140	2	1	7	33	14	29	24	11	11	5	3
	PHARMACOLOGY	30	2		2	6	5	7	1	7			
	BIOCHEMISTRY	205	7	2	24	35	9	40	19	32	23	9	5
	MICROBIOLOGY	127	2	3	14	27	16	20	12	13	11	4	5
	OTHER BIO-SCIENCES	333	5	6	29	48	43	58	28	50	37	17	12
	BOTANY	86	1	1	7	9	10	15	6	11	14	7	5
	GENETICS	56		1	6	7	8	8	8	7	8	1	2
	ZOOLOGY	103	3	2	6	21	14	18	6	20	7	3	3
	MISC. BIOLOGY	88	1	2	10	11	11	17	8	12	8	6	2
	MEDICAL SCIENCES	55	1	3	5	8	7	13	1	4	9	3	1
	AGRIC. SCIENCES	92		3	8	21	11	19	14	9	6		1
	PSYCHOLOGY	80	2	2	7	9	8	19	8	12	11	2	
	SOCIAL SCIENCES	364	8	11	25	67	35	50	52	49	42	21	4
	SOCIOLOGY	97	2	3	5	22	6	13	14	10	11	9	2
	ECONOMICS	82			8	20	7	11	10	12	8	6	
	POLITICAL SCIENCE	85	2	3	7	9	11	14	14	9	13	2	1
	HIST., GEOGRAPHY	100	4	5	5	16	11	12	14	18	10	4	1
	M-P-E FIELDS	434	5	3	28	82	47	67	58	68	40	22	14
	MATHEMATICS	100	2	1	6	17	12	13	17	14	10	5	3
	PHYSICAL SCIENCES	240	3	2	11	42	21	41	32	44	23	12	9
	PHYSICS	69	1		1	12	6	7	11	14	8	5	4
	CHEMISTRY	90	2	1	8	16	10	22	10	11	4	4	2
	GEOLOGY	81		1	2	14	5	12	11	19	11	3	3
	ENGINEERING	94			11	23	14	13	9	10	7	5	2
	ALL OTHER FIELDS	364	7	5	25	79	48	59	45	56	19	12	9
	LANG. & LIT.	96	1	1	4	22	11	17	15	15	5	3	2
	ARTS, HUMANITIES	78		1	6	12	11	12	9	16	6	4	1
	PROFESSIONS	102	2	2	6	23	16	14	11	17	3	3	5
	EDUCATION	88	4	1	9	22	10	16	10	8	5	2	1

Appendix 12

EDUCATION OF MOTHER

COHORT	FIELD	TOTAL GROUP	NUMBER TERMINATING EDUCATION AT EACH LEVEL										
			NONE	GR. 1-3	GR. 4-6	GR. 7-8	GR. 9-11	H.S. GRAD	COLL 1-3	COLL GRAD	M.D. & MA	PHD	UNK
ALL	TOTAL, ALL FIELDS	10017	232	119	656	1959	1012	2642	1728	1039	227	33	370
COHORT 1935	TOTAL, ALL FIELDS	1355	25	11	84	305	114	349	232	119	20	2	94
	BIO-SCIENCES, TOTAL	352	10	5	24	84	22	95	59	27	4	1	21
	BASIC MED. SCIENCES	181	5	2	15	40	12	46	27	15	3	1	15
	PHYSIOLOGY	80	1	1	6	18	5	15	13	9	2	1	9
	PHARMACOLOGY	15			4	7	1		1				2
	BIOCHEMISTRY	35	4		2	6	3	11	7	2			
	MICROBIOLOGY	51		1	3	9	3	20	6	4	1		4
	OTHER BIO-SCIENCES	171	5	3	9	44	10	49	32	12	1		6
	BOTANY	59		1	3	18	1	16	11	5			4
	GENETICS	19		1	1	2	2	5	6	1			1
	ZOOLOGY	63	1	1	4	17	5	19	13	2	1		
	MISC. BIOLOGY	30	4		1	7	2	9	2	4			1
	MEDICAL SCIENCES	39			1	11	3	5	5	3	2		9
	AGRIC. SCIENCES	77	1		7	20	10	13	13	7	3		3
	PSYCHOLOGY	61	1		3	16	5	16	12	6	1		1
	SOCIAL SCIENCES	254	4	1	14	56	20	66	41	24	6		22
	SOCIOLOGY	78	2		5	12	6	25	8	6	1		13
	ECONOMICS	56			1	17	3	12	12	5	1		5
	POLITICAL SCIENCE	61	1	1	4	13	7	18	10	6			1
	HIST., GEOGRAPHY	59	1		4	14	4	11	11	7	4		3
	M-P-E FIELDS	346	4	3	20	68	32	103	64	33	4	1	14
	MATHEMATICS	69	2	1	9	12	6	16	11	7	2		3
	PHYSICAL SCIENCES	206	1	1	8	40	20	68	36	22	2	1	7
	PHYSICS	71		1	4	16	8	18	13	8			3
	CHEMISTRY	76	1		1	12	3	33	14	10	1		1
	GEOLOGY	59			3	12	9	17	9	4	1	1	3
	ENGINEERING	71	1	1	3	16	6	19	17	4			4
	ALL OTHER FIELDS	226	5	2	15	50	22	51	38	19			24
	LANG. & LIT.	77	1		7	15	11	19	13	5			6
	ARTS, HUMANITIES	60	3	2	3	8	5	13	12	8			6
	PROFESSIONS	48			2	10	4	12	8	5			7
	EDUCATION	41	1		3	17	2	7	5	1			5
COHORT 1940	TOTAL, ALL FIELDS	1610	48	21	103	337	150	415	291	160	19	4	62
	BIO-SCIENCES, TOTAL	570	16	5	40	145	47	144	98	49	4	2	20
	BASIC MED. SCIENCES	378	14	4	26	96	29	92	60	37	2	2	16
	PHYSIOLOGY	112	1		5	29	7	30	15	15	2		8
	PHARMACOLOGY	25	1	1	5	5		3	4	3			3
	BIOCHEMISTRY	155	8	3	10	38	12	36	30	14		2	2
	MICROBIOLOGY	86	4		6	24	10	23	11	5			3
	OTHER BIO-SCIENCES	192	2	1	14	49	18	52	38	12	2		4
	BOTANY	69			3	11	8	23	16	4	1		3
	GENETICS	32		1	1	10	3	7	10				
	ZOOLOGY	90	2		10	28	7	21	12	8	1		1
	MISC. BIOLOGY	1						1					
	MEDICAL SCIENCES	31	2		1	4	3	10	5	1	1		4
	AGRIC. SCIENCES	74	3	1	4	20	8	18	14	4			2
	PSYCHOLOGY	83	2	3	1	14	7	21	21	9	2		3
	SOCIAL SCIENCES	252	7	3	15	47	22	58	54	29	5	1	11
	SOCIOLOGY	65	2	1	5	9	7	18	7	8	3		5
	ECONOMICS	80		1	5	17	9	14	22	7	1		4
	POLITICAL SCIENCE	49	4		3	9	2	14	10	6			1
	HIST., GEOGRAPHY	58	1	1	2	12	4	12	15	8	1	1	1
	M-P-E FIELDS	367	13	6	17	54	43	112	61	46	7	1	7
	MATHEMATICS	62	4	2	2	11	9	17	10	5	2		
	PHYSICAL SCIENCES	238	7	4	9	23	27	75	43	39	4	1	6
	PHYSICS	69	3	2	3	5	11	12	11	17	2	1	2
	CHEMISTRY	92	3	2	5	11	9	33	17	8	1		3
	GEOLOGY	77	1		1	7	7	30	15	14	1		1
	ENGINEERING	67	2		6	20	7	20	8	2	1		1
	ALL OTHER FIELDS	233	5	3	25	53	20	52	38	22			15
	LANG. & LIT.	76	2	2	4	15	8	15	18	6			6
	ARTS, HUMANITIES	62	2	1	6	14	3	22	5	6			3
	PROFESSIONS	43	1		2	10	4	9	5	8			4
	EDUCATION	52			13	14	5	6	10	2			2

Appendix 12, continued

EDUCATION OF MOTHER

COHORT	FIELD	TOTAL GROUP	NUMBER TERMINATING EDUCATION AT EACH LEVEL										
			NONE	GR. 1-3	GR. 4-6	GR. 7-8	GR. 9-11	H.S. GRAD	COLL 1-3	COLL GRAD	M.D. & MA	PHD	UNK
COHORT 1945	TOTAL, ALL FIELDS	1289	24	14	107	261	134	312	212	144	29	2	50
	BIO-SCIENCES, TOTAL	328	9	5	27	82	43	62	56	30	4	1	9
	BASIC MED. SCIENCES	156	5	1	11	42	19	28	28	14		1	7
	PHYSIOLOGY	36			5	6	4	7	7	4		1	2
	PHARMACOLOGY	18			2	4	5	3	2				2
	BIOCHEMISTRY	64	3	1	3	23	4	10	12	6			2
	MICROBIOLOGY	38	2		1	9	6	8	7	4			1
	OTHER BIO-SCIENCES	172	4	4	16	40	24	34	28	16	4		2
	BOTANY	69	3	1	4	15	8	17	12	7	2		
	GENETICS	13			2	3	2	1	1	4			
	ZOOLOGY	89	1	3	10	22	14	16	14	5	2		2
	MISC. BIOLOGY	1							1				
	MEDICAL SCIENCES	26			4	2	2	8	5	4			1
	AGRIC. SCIENCES	65	1		5	16	7	17	12	5	1		1
	PSYCHOLOGY	76	1		5	10	11	22	14	9	2		2
	SOCIAL SCIENCES	257	5	4	21	43	25	69	46	28	5	1	10
	SOCIOLOGY	64	1	1	7	9	8	19	13	4	2		
	ECONOMICS	80	1	1	6	16	4	16	15	13	2	1	5
	POLITICAL SCIENCE	32	2		2	5	2	10	5	3	1		2
	HIST., GEOGRAPHY	81	1	2	6	13	11	24	13	8			3
	M-P-E FIELDS	296	6	3	21	45	21	80	43	49	15		13
	MATHEMATICS	63	2		3	10	5	18	9	9	4		3
	PHYSICAL SCIENCES	185		3	17	25	11	51	26	37	9		6
	PHYSICS	67		1	4	11	4	14	7	16	7		3
	CHEMISTRY	78		2	9	10	5	29	10	9	2		2
	GEOLOGY	40			4	4	2	8	9	12			1
	ENGINEERING	48	4		1	10	5	11	8	3	2		4
	ALL OTHER FIELDS	241	2	2	24	63	25	54	36	19	2		14
	LANG. & LIT.	67	1		4	17	6	22	7	5	1		4
	ARTS, HUMANITIES	46		1	3	9	7	9	9	2	1		5
	PROFESSIONS	56			5	13	5	11	11	8			3
	EDUCATION	72	1	1	12	24	7	12	9	4			2
COHORT 1950	TOTAL, ALL FIELDS	1627	41	21	97	327	147	443	277	179	38	3	54
	BIO-SCIENCES, TOTAL	418	12	5	24	88	34	123	66	36	8		22
	BASIC MED. SCIENCES	246	9	3	13	54	13	72	40	22	6		14
	PHYSIOLOGY	43			2	11	2	11	5	7	3		2
	PHARMACOLOGY	29	3	1	1	7		7	7	1	1		1
	BIOCHEMISTRY	90	3		6	20	5	24	13	11	1		7
	MICROBIOLOGY	84	3	2	4	16	6	30	15	3	1		4
	OTHER BIO-SCIENCES	172	3	2	11	34	21	51	26	14	2		8
	BOTANY	71	1		2	17	6	27	7	6	1		4
	GENETICS	14			1	1	5	3	1	1			2
	ZOOLOGY	37	2	2	8	16	10	21	18	7	1		2
	MISC. BIOLOGY												
	MEDICAL SCIENCES	37	1	1	1	4	1	9	7	10		1	2
	AGRIC. SCIENCES	103		1	5	24	13	24	22	9	3		2
	PSYCHOLOGY	95	3	2	6	28	7	19	16	8	3		3
	SOCIAL SCIENCES	267	8	5	14	60	28	66	45	29	5	1	6
	SOCIOLOGY	61	1	3	3	18	4	17	8	4	1		2
	ECONOMICS	54	3		3	12	8	13	10	3	1		1
	POLITICAL SCIENCE	75	2	1	3	15	7	16	15	12	1	1	2
	HIST., GEOGRAPHY	77	2	1	5	15	9	20	12	10	2		1
	M-P-E FIELDS	435	8	4	32	66	36	135	76	52	11	1	14
	MATHEMATICS	68	2	1	9	12	6	18	9	7	3		1
	PHYSICAL SCIENCE	271	4	2	17	33	21	88	54	35	7		10
	PHYSICS	90		1	6	10	7	25	17	16	4		4
	CHEMISTRY	77	1	1	5	9	6	28	15	9	3		
	GEOLOGY	104	3		6	14	8	35	22	10			6
	ENGINEERING	96	2	1	6	21	9	29	13	10	1	1	3
	ALL OTHER FIELDS	272	9	3	15	57	28	67	45	35	8		5
	LANG. & LIT.	74	2	1	3	14	6	19	16	9	3		1
	ARTS, HUMANITIES	69	2		3	11	5	16	13	17	1		1
	PROFESSIONS	61	5	1	2	14	3	14	11	6	3		2
	EDUCATION	68		1	7	18	14	18	5	3	1		1

Appendix 12, continued

EDUCATION OF MOTHER

COHORT	FIELD	TOTAL GROUP	NUMBER TERMINATING EDUCATION AT EACH LEVEL										
			NONE	GR. 1-3	GR. 4-6	GR. 7-8	GR. 9-11	H.S. GRAD	COLL 1-3	COLL GRAD	M.D. & MA	PHD	UNK
COHORT 1955	TOTAL, ALL FIELDS	1912	56	24	127	358	210	519	329	189	46	11	43
	BIO-SCIENCES, TOTAL	663	20	8	45	129	76	195	114	46	13	1	16
	BASIC MED. SCIENCES	425	15	5	23	86	49	130	70	27	9	1	10
	PHYSIOLOGY	123	2	1	8	26	11	40	24	7	1		3
	PHARMACOLOGY	36	1	2	5	7	7	10	2	1			1
	BIOCHEMISTRY	139	7	1	4	30	13	37	22	13	7	1	4
	MICROBIOLOGY	127	5	1	6	23	18	43	22	6	1		2
	OTHER BIO-SCIENCES	238	5	3	22	43	27	65	44	19	4		6
	BOTANY	91	2	3	8	18	11	26	15	4	2		2
	GENETICS	21	1		3	2	1	5	6	3			
	ZOOLOGY	93	2		6	20	14	25	15	7	1		3
	MISC. BIOLOGY	33			5	3	1	9	8	5	1		1
	MEDICAL SCIENCES	66	2		2	17	8	12	15	4	1	1	4
	AGRIC. SCIENCES	125	2	5	9	25	19	25	23	10	2	1	4
	PSYCHOLOGY	73	4	1	5	11	4	27	11	7	2		1
	SOCIAL SCIENCES	318	10	2	21	71	28	74	47	46	9	4	6
	SOCIOLOGY	84	2	1	7	19	10	16	12	14	1	1	1
	ECONOMICS	84	4	1	7	18	6	16	11	14	3	2	2
	POLITICAL SCIENCE	76	3		4	12	5	22	15	8	4	1	2
	HIST., GEOGRAPHY	74	1		3	22	7	20	9	10	1		1
	M-P-E FIELDS	405	11	5	27	59	42	125	64	51	13	1	7
	MATHEMATICS	96	5	1	11	8	6	28	13	14	6	1	3
	PHYSICAL SCIENCES	222	3	4	12	33	25	71	38	26	6		4
	PHYSICS	70	1		6	7	5	22	16	8	3		2
	CHEMISTRY	80	1	2	2	17	12	22	13	7	2		2
	GEOLOGY	72	1	2	4	9	8	27	9	11	1		
	ENGINEERING	87	3		4	18	11	26	13	11	1		
	ALL OTHER FIELDS	262	7	3	18	46	33	61	55	25	6	3	5
	LANG. & LIT.	67	1		4	10	6	19	15	9		1	2
	ARTS, HUMANITIES	64	1		4	8	9	18	10	9	3	2	
	PROFESSIONS	56	3	1	7	9	7	12	10	5	1		1
	EDUCATION	75	2	2	3	19	11	12	20	2	2		2
COHORT 1960	TOTAL, ALL FIELDS	2224	38	28	138	371	257	604	387	248	75	11	67
	BIO-SCIENCES, TOTAL	835	16	11	57	129	99	235	135	90	25	7	31
	BASIC MED. SCIENCES	502	10	8	36	80	56	151	78	48	14	4	17
	PHYSIOLOGY	140	2	2	8	26	17	48	20	8	3	1	5
	PHARMACOLOGY	30	2	2	1	3	7	10	2	3			
	BIOCHEMISTRY	205	3	3	11	35	19	57	40	23	6	2	6
	MICROBIOLOGY	127	3	1	16	16	13	36	16	14	5	1	6
	OTHER BIO-SCIENCES	333	6	3	21	49	43	84	57	42	11	3	14
	BOTANY	86			8	6	12	21	14	14	4	1	6
	GENETICS	56	1		4	6	8	12	16	5	2		2
	ZOOLOGY	103	3	2	6	23	8	25	14	14	3	1	4
	MISC. BIOLOGY	88	2	1	3	14	15	26	13	9	2	1	2
	MEDICAL SCIENCES	55	2	1	3	14	6	11	8	8	1		1
	AGRIC. SCIENCES	92	2	2	5	21	9	25	23	2	1		2
	PSYCHOLOGY	80			7	12	10	27	11	7	4		2
	SOCIAL SCIENCES	364	8	8	21	63	39	90	69	41	17	1	7
	SOCIOLOGY	97	2		10	21	8	19	17	11	7		2
	ECONOMICS	82	1	3	1	20	11	24	12	7	2	1	
	POLITICAL SCIENCE	85	1	3	4	11	7	24	20	10	3		2
	HIST., GEOGRAPHY	100	4	2	6	11	13	23	20	13	5		3
	M-P-E FIELDS	434	7	1	24	59	50	126	80	54	17	2	14
	MATHEMATICS	100	2	1	5	16	8	28	17	14	3	2	4
	PHYSICAL SCIENCES	240	4		10	23	27	77	48	33	10		8
	PHYSICS	69	2		2	7	5	24	13	6	6		4
	CHEMISTRY	90	1		5	12	11	32	11	15	1		2
	GEOLOGY	81	1		3	4	11	21	24	12	3		2
	ENGINEERING	94	1		9	20	15	21	15	7	4		2
	ALL OTHER FIELDS	364	3	5	21	73	44	90	61	46	10	1	10
	LANG. & LIT.	96		3	2	18	13	23	16	12	5	1	3
	ARTS, HUMANITIES	78		1	5	13	8	18	13	16	2		2
	PROFESSIONS	102	2		7	17	11	33	17	11			4
	EDUCATION	88	1	1	7	25	12	16	15	7	3		1

Appendix 13

OCCUPATIONAL LEVEL OF FATHER

COHORT	FIELD	TOTAL GROUP	COLL TCHR	OTHER PROF	MNGR	FARM	SLS. SVC.	CLER	SKLD LABR	SEMI SKLD	UN-SKLD	UNK
ALL	TOTAL, ALL FIELDS	10017	551	2257	1815	1566	1124	440	1380	523	243	118
COHORT 1935	TOTAL, ALL FIELDS	1355	87	304	254	279	119	57	161	49	20	25
	BIO-SCIENCES, TOTAL	352	16	67	59	89	31	13	47	18	6	6
	BASIC MED. SCIENCES	181	8	35	34	39	17	7	23	12	4	2
	PHYSIOLOGY	80	7	16	16	17	7	1	8	5	2	1
	PHARMACOLOGY	15		1	1	4	3	1	4	1		
	BIOCHEMISTRY	35	1	8	6	7	3	2	4	3	1	
	MICROBIOLOGY	51		10	11	11	4	3	7	3	1	1
	OTHER BIO-SCIENCES	171	8	32	25	50	14	6	24	6	2	4
	BOTANY	59	4	11	6	20	7	2	5	2		2
	GENETICS	19		1	5	6	3	1	1		1	1
	ZOOLOGY	63	3	11	9	16	2	3	13	4	1	1
	MISC. BIOLOGY	30	1	9	5	8	2		5			
	MEDICAL SCIENCES	39	2	10	7	6	6	1	3	2	1	1
	AGRIC. SCIENCES	77	3	10	9	37	4	1	7	2	1	3
	PSYCHOLOGY	61	5	20	11	6	8	1	6	3	1	
	SOCIAL SCIENCES	254	23	64	54	53	20	8	18	4	4	6
	SOCIOLOGY	78	6	19	24	11	8	2	5	1		2
	ECONOMICS	56	6	13	7	15	2	3	6		1	3
	POLITICAL SCIENCE	61	3	16	15	18	2	2	2	1	2	
	HIST., GEOGRAPHY	59	8	16	8	9	8	1	5	2	1	1
	M-P-E FIELDS	346	25	76	69	52	34	20	52	12	3	3
	MATHEMATICS	69	3	13	10	12	11	2	13	3	1	1
	PHYSICAL SCIENCES	206	19	52	39	32	18	11	25	9		1
	PHYSICS	71	8	14	9	11	7	5	14	2		1
	CHEMISTRY	76	5	23	16	13	5	3	5	6		
	GEOLOGY	59	6	15	14	8	6	3	6	1		
	ENGINEERING	71	3	11	20	8	5	7	14		2	1
	ALL OTHER FIELDS	226	13	57	45	36	16	13	28	8	4	6
	LANG. & LIT.	77	1	22	13	9	7	7	11	4	2	1
	ARTS, HUMANITIES	60	7	14	18	7	3	1	5	2	2	1
	PROFESSIONS	48	3	13	8	8	5	2	5	1		3
	EDUCATION	41	2	8	6	12	1	3	7	1		1
COHORT 1940	TOTAL, ALL FIELDS	1610	107	367	300	299	148	66	205	68	30	20
	BIO-SCIENCES, TOTAL	570	40	115	91	107	60	25	89	27	9	7
	BASIC MED. SCIENCES	378	26	78	58	61	43	15	66	18	7	6
	PHYSIOLOGY	112	9	23	21	12	17	2	17	7	2	2
	PHARMACOLOGY	25	1	5	2	2	6	2	4		3	
	BIOCHEMISTRY	155	13	35	27	24	13	7	26	6	2	2
	MICROBIOLOGY	86	3	15	8	23	7	4	19	5		2
	OTHER BIO-SCIENCES	192	14	37	33	46	17	10	23	9	2	1
	BOTANY	69	8	12	13	16	4	4	9	2		1
	GENETICS	32	3	6	2	15	2	2	2			
	ZOOLOGY	90	3	19	17	15	11	4	12	7	2	
	MISC. BIOLOGY	1			1							
	MEDICAL SCIENCES	31	2	10	5	2	3	2	6	1		
	AGRIC. SCIENCES	74	2	8	11	38	4	1	6	3		1
	PSYCHOLOGY	83	9	32	15	5	6	2	8	2	2	2
	SOCIAL SCIENCES	252	13	64	55	59	18	7	22	8	3	3
	SOCIOLOGY	65	6	11	19	11	4	4	6	3	1	
	ECONOMICS	80		18	19	26	5	2	6	2		2
	POLITICAL SCIENCE	49	2	12	10	12	6		4	2	1	
	HIST., GEOGRAPHY	58	5	23	7	10	3	1	6	1	1	1
	M-P-E FIELDS	367	30	77	76	51	40	19	48	17	9	
	MATHEMATICS	62	6	11	16	6	8	3	7	4	1	
	PHYSICAL SCIENCES	238	24	53	46	37	26	14	24	8	6	
	PHYSICS	69	11	22	10	8	1	5	4	4	4	
	CHEMISTRY	92	5	16	20	13	16	6	13	2	1	
	GEOLOGY	77	8	15	16	16	9	3	7	2	1	
	ENGINEERING	67		13	14	8	6	2	17	5	2	
	ALL OTHER FIELDS	233	11	61	47	37	17	10	24	10	7	7
	LANG. & LIT.	76	4	18	15	9	7	3	10	4	2	4
	ARTS, HUMANITIES	62		22	13	5	7	3	6	2	3	1
	PROFESSIONS	43	6	12	7	5	3	1	3	4	1	1
	EDUCATION	52	1	9	12	18		3	7		1	1

Appendix 13, continued

OCCUPATIONAL LEVEL OF FATHER

COHORT	FIELD	TOTAL GROUP	COLL TCHR	OTHER PROF	MNGR	FARM	SLS. SVC.	CLER	SKLD LABR	SEMI SKLD	UN-SKLD	UNK
COHORT 1945	TOTAL, ALL FIELDS	1289	79	298	230	210	132	60	177	66	26	11
	BIO-SCIENCES, TOTAL	328	26	59	48	71	35	13	48	17	8	3
	BASIC MED. SCIENCES	156	10	31	22	29	22	6	20	11	3	2
	PHYSIOLOGY	36	3	7	7	7	4	3	2	2	1	
	PHARMACOLOGY	18		3	4	4	3	1	1		2	
	BIOCHEMISTRY	64	5	12	8	12	7		15	4		1
	MICROBIOLOGY	38	2	9	3	6	8	2	2	5		1
	OTHER BIO-SCIENCES	172	16	28	26	42	13	7	28	6	5	1
	BOTANY	69	8	12	8	18	6	1	11	2	3	
	GENETICS	13	1	2		8			2			
	ZOOLOGY	89	7	14	17	16	7	6	15	4	2	1
	MISC. BIOLOGY	1			1							
	MEDICAL SCIENCES	26	1	9	2	2	5		3	4		
	AGRIC. SCIENCES	65	3	6	4	28	5	4	12	2	1	
	PSYCHOLOGY	76	3	17	18	4	11	4	11	3	4	1
	SOCIAL SCIENCES	257	14	65	54	41	27	7	28	14	5	2
	SOCIOLOGY	64	5	20	15	8	3	3	8	1	1	
	ECONOMICS	80	5	14	18	21	11	1	5	4		1
	POLITICAL SCIENCE	32	1	6	9	3	4	2	3	2	1	1
	HIST., GEOGRAPHY	81	3	25	12	9	9	1	12	7	3	
	M-P-E FIELDS	296	25	75	61	20	29	23	40	13	6	4
	MATHEMATICS	63	5	18	17	4	7	4	4	2	1	1
	PHYSICAL SCIENCES	185	17	49	31	15	17	14	29	8	3	2
	PHYSICS	67	9	23	7	5	4	7	7	2	2	1
	CHEMISTRY	78	3	13	19	8	10	5	14	5	1	
	GEOLOGY	40	5	13	5	2	3	2	8	1		1
	ENGINEERING	48	3	8	13	1	5	5	7	3	2	1
	ALL OTHER FIELDS	241	7	67	43	44	20	9	35	13	2	1
	LANG. & LIT.	67	3	17	14	9	6	4	8	5		1
	ARTS, HUMANITIES	46	1	18	9	8	2	2	5		1	
	PROFESSIONS	56	2	19	9	10	4		8	4		
	EDUCATION	72	1	13	11	17	8	3	14	4	1	
COHORT 1950	TOTAL, ALL FIELDS	1627	86	368	266	254	227	66	228	84	35	13
	BIO-SCIENCES, TOTAL	418	19	77	58	74	61	18	71	24	12	4
	BASIC MED. SCIENCES	246	11	38	41	32	41	10	41	18	10	4
	PHYSIOLOGY	43	3	15	6	4	6		6	1	2	
	PHARMACOLOGY	29	1	5	4	3	3	3	4	4	2	
	BIOCHEMISTRY	90	6	8	10	13	21	2	16	7	4	3
	MICROBIOLOGY	84	1	10	21	12	11	5	15	6	2	1
	OTHER BIO-SCIENCES	172	8	39	17	42	20	8	30	6	2	
	BOTANY	71	3	16	8	17	9	3	14	1		
	GENETICS	14	1	1		11				1		
	ZOOLOGY	87	4	22	9	14	11	5	16	4	2	
	MISC. BIOLOGY											
	MEDICAL SCIENCES	37	3	16	3	6	7		2			
	AGRIC. SCIENCES	103	5	11	8	62	7		9		1	
	PSYCHOLOGY	95	4	17	14	11	13	4	21	7	4	
	SOCIAL SCIENCES	267	17	62	62	36	37	10	28	12	3	
	SOCIOLOGY	61	4	12	19	6	8	1	7	4		
	ECONOMICS	54	4	9	9	15	6	3	6	2		
	POLITICAL SCIENCE	75	4	25	12	5	15	3	6	4	1	
	HIST., GEOGRAPHY	77	5	16	22	10	8	3	9	2	2	
	M-P-E FIELDS	435	27	117	66	38	62	22	61	28	7	7
	MATHEMATICS	68	2	21	10	7	12	2	6	6	1	1
	PHYSICAL SCIENCES	271	21	72	44	20	38	13	36	17	5	5
	PHYSICS	90	6	22	15	12	15	6	9	5		
	CHEMISTRY	77	5	16	11	6	10	3	15	8	3	
	GEOLOGY	104	10	34	18	2	13	4	12	4	2	5
	ENGINEERING	96	4	24	12	11	12	7	19	5	1	1
	ALL OTHER FIELDS	272	11	68	55	27	40	12	36	13	8	2
	LANG. & LIT.	74	3	24	15	3	16	1	6	2	4	
	ARTS, HUMANITIES	69	5	22	15	3	9	4	8	2	1	
	PROFESSIONS	61	3	12	16	7	5	3	8	5		2
	EDUCATION	68		10	9	14	10	4	14	4	3	

Appendix 13, continued

OCCUPATIONAL LEVEL OF FATHER

COHORT	FIELD	TOTAL GROUP	COLL TCHR	OTHER PROF	MNGR	FARM	SLS. SVC.	CLER	SKLD LABR	SEMI SKLD	UN-SKLD	UNK
COHORT 1955	TOTAL, ALL FIELDS	1912	84	408	356	254	229	82	304	116	54	25
	BIO-SCIENCES, TOTAL	663	31	128	115	69	84	29	127	41	25	14
	BASIC MED. SCIENCES	425	16	81	77	42	58	18	79	24	18	12
	PHYSIOLOGY	123	7	24	23	9	16	3	24	8	5	4
	PHARMACOLOGY	36		4	7	4	6		5	4	6	
	BIOCHEMISTRY	139	6	28	25	20	19	5	23	6	3	4
	MICROBIOLOGY	127	3	25	22	9	17	10	27	6	4	4
	OTHER BIO-SCIENCES	238	15	47	38	27	26	11	48	17	7	2
	BOTANY	91	6	11	17	18	6	7	17	5	3	1
	GENETICS	21	3	4	3	5			4	2		
	ZOOLOGY	93	5	24	12	3	16	3	17	8	4	1
	MISC. BIOLOGY	33	1	8	6	1	4	1	10	2		
	MEDICAL SCIENCES	66	1	19	10	9	8	1	9	5	2	2
	AGRIC. SCIENCES	125	3	16	13	59	8	4	10	10	1	1
	PSYCHOLOGY	73	4	16	17	4	11	1	15	3	2	
	SOCIAL SCIENCES	318	15	73	57	46	36	16	47	21	5	2
	SOCIOLOGY	84	2	21	17	9	7	4	18	5	1	
	ECONOMICS	84	9	13	16	20	11	2	8	3	2	
	POLITICAL SCIENCE	76	3	21	11	10	9	6	4	9	2	1
	HIST., GEOGRAPHY	74	1	18	13	7	9	4	17	4		1
	M-P-E FIELDS	405	18	97	84	36	51	18	59	28	12	2
	MATHEMATICS	96	8	23	23	9	9	3	10	6	3	2
	PHYSICAL SCIENCES	222	9	58	34	22	31	9	36	16	7	
	PHYSICS	70	4	20	18	4	8	2	7	7		
	CHEMISTRY	80	2	18	9	8	13	5	14	8	3	
	GEOLOGY	72	3	20	7	10	10	2	15	1	4	
	ENGINEERING	87	1	16	27	5	11	6	13	6	2	
	ALL OTHER FIELDS	262	12	59	60	31	31	13	37	8	7	4
	LANG. & LIT.	67	2	15	15	7	9	5	7	3	2	2
	ARTS, HUMANITIES	64	8	13	15	6	10	2	5	2	3	
	PROFESSIONS	56	1	14	12	5	6	4	10	2	1	1
	EDUCATION	75	1	17	18	13	6	2	15	1	1	1
COHORT 1960	TOTAL, ALL FIELDS	2224	108	512	409	270	269	109	305	140	78	24
	BIO-SCIENCES, TOTAL	835	43	200	134	109	106	38	111	51	32	11
	BASIC MED. SCIENCES	502	26	107	86	62	71	25	68	30	21	6
	PHYSIOLOGY	140	5	34	26	20	23	8	12	6	5	1
	PHARMACOLOGY	30		6	4	3	5	2	7	2	1	
	BIOCHEMISTRY	205	14	47	36	24	24	9	27	15	8	1
	MICROBIOLOGY	127	7	20	20	15	19	6	22	7	7	4
	OTHER BIO-SCIENCES	333	17	93	48	47	35	13	43	21	11	5
	BOTANY	86	8	25	12	13	9	2	9	4	2	2
	GENETICS	56	1	16	5	16	3	3	6	3	2	1
	ZOOLOGY	103	4	25	20	8	12	5	18	8	2	1
	MISC. BIOLOGY	88	4	27	11	10	11	3	10	6	5	1
	MEDICAL SCIENCES	55	1	15	9	6	7	3	7	4	3	
	AGRIC. SCIENCES	92	2	13	9	38	8	4	10	5	3	
	PSYCHOLOGY	80	4	20	20	3	12	3	9	4	4	1
	SOCIAL SCIENCES	364	29	83	76	37	45	16	48	18	10	2
	SOCIOLOGY	97	10	24	15	2	14	6	18	5	2	1
	ECONOMICS	82	7	14	20	23	5	1	7	4	1	
	POLITICAL SCIENCE	85	4	23	21	5	15	3	8	3	3	
	HIST., GEOGRAPHY	100	8	22	20	7	11	6	15	6	4	1
	M-P-E FIELDS	434	15	109	77	30	49	33	66	33	16	6
	MATHEMATICS	100	6	28	14	4	17	4	17	7	3	
	PHYSICAL SCIENCES	240	7	66	50	18	19	16	30	23	8	3
	PHYSICS	69	4	19	17	4	6	6	6	5	2	
	CHEMISTRY	90		18	14	9	8	5	16	14	4	2
	GEOLOGY	81	3	29	19	5	5	5	8	4	2	1
	ENGINEERING	94	2	15	13	8	13	13	19	3	5	3
	ALL OTHER FIELDS	364	14	72	84	47	42	12	54	25	10	4
	LANG. & LIT.	96	3	23	25	9	8	2	17	7	2	
	ARTS, HUMANITIES	78	6	15	20	5	11	4	11	5		1
	PROFESSIONS	102	1	18	27	9	16	5	13	10	2	1
	EDUCATION	88	4	16	12	24	7	1	13	3	6	2

Appendix 14

14A. RELATION OF EDUCATION OF FATHER TO CATEGORY OF PRESENT EMPLOYER, BIOLOGICAL FIELDS

Educ. Level of Father	Numbers and Per cent Distribution					Computation of Chi Squared					
	Total Cases	Coll., Univ.	U.S. Govt.	Bus., Ind.	All Other	Statistic	Total	Coll., Univ.	U.S. Govt.	Bus., Ind.	All Other
Basic Medical Sciences											
Total	1815	985	188	311	331	Expected	1815.0	985.0	188.0	311.0	331.0
	100.0	54.3	10.4	17.1	18.2	Chi Sq.	49.2	8.1	27.7	8.0	5.3
None	63	26	18	10	9	Expected	63.0	34.2	6.5	10.8	11.5
	100.0	41.3	28.6	15.9	14.3	Chi Sq.	22.7	2.0	20.2	0.1	0.5
Grades	26	16	2	4	4	Expected	26.0	14.1	2.7	4.5	4.7
1-3	100.0	61.5	7.7	15.4	15.4	Chi Sq.	0.6	0.3	0.2	0.0	0.1
Grades	176	94	20	26	36	Expected	176.0	95.5	18.2	30.2	32.1
4-6	100.0	53.4	11.4	14.8	20.5	Chi Sq.	1.2	0.0	0.2	0.6	0.5
Grades	416	204	49	84	79	Expected	416.0	225.8	43.1	71.3	75.9
7-8	100.0	49.0	11.8	20.2	19.0	Chi Sq.	5.3	2.1	0.8	2.3	0.1
H. S.	178	107	16	30	25	Expected	178.0	96.6	18.4	30.5	32.5
1-3	100.0	60.1	9.0	16.9	14.0	Chi Sq.	3.2	1.1	0.3	0.0	1.7
H. S.	340	177	37	62	64	Expected	340.0	184.5	35.2	58.3	62.0
Grad.	100.0	52.1	10.9	18.2	18.8	Chi Sq.	0.7	0.3	0.1	0.2	0.1
Coll.	168	98	14	32	24	Expected	168.0	91.2	17.4	28.8	30.6
1-3	100.0	58.3	8.3	19.0	14.3	Chi Sq.	3.0	0.5	0.7	0.4	1.4
Coll.	226	129	13	38	46	Expected	226.0	122.7	23.4	38.7	41.2
Grad.	100.0	57.1	5.8	16.8	20.4	Chi Sq.	5.5	0.3	4.6	0.0	0.6
Beyond	222	134	19	25	44	Expected	222.0	120.5	23.0	38.0	40.5
B. A.	100.0	60.4	8.6	11.3	19.8	Chi Sq.	7.0	1.5	0.7	4.5	0.3
All Other Bio-Sciences											
Total	1993	1204	234	174	381	Expected	1993.0	1204.0	234.0	174.0	381.0
	100.0	60.4	11.7	8.7	19.1	Chi Sq.	49.7	8.0	7.5	5.2	29.0
None	34	13	1	5	15	Expected	34.0	20.5	4.0	3.0	6.5
	100.0	38.2	2.9	14.7	44.1	Chi Sq.	17.5	2.8	2.2	1.4	11.1
Grades	64	38	7	8	11	Expected	64.0	38.7	7.5	5.6	12.2
1-3	100.0	59.4	10.9	12.5	17.2	Chi Sq.	1.2	0.0	0.0	1.0	0.1
Grades	192	114	21	20	37	Expected	192.0	116.0	22.5	16.8	36.7
4-6	100.0	59.4	10.9	10.4	19.3	Chi Sq.	0.8	0.0	0.1	0.6	0.0
Grades	439	273	60	38	68	Expected	439.0	265.2	51.5	38.3	83.9
7-8	100.0	62.2	13.7	8.7	15.5	Chi Sq.	4.6	0.2	1.4	0.0	3.0
H. S.	205	110	30	18	47	Expected	205.0	123.8	24.1	17.9	39.2
1-3	100.0	53.7	14.6	8.8	22.9	Chi Sq.	4.6	1.5	1.5	0.0	1.6
H. S.	344	213	35	32	64	Expected	344.0	207.8	40.4	30.0	65.8
Grad.	100.0	61.9	10.2	9.3	18.6	Chi Sq.	1.0	0.1	0.7	0.1	0.0
Coll.	214	149	25	16	24	Expected	214.0	129.3	25.1	18.7	40.9
1-3	100.0	69.6	11.7	7.5	11.2	Chi Sq.	10.4	3.0	0.0	0.4	7.0
Coll.	224	132	29	19	44	Expected	224.0	135.3	26.3	19.6	42.8
Grad.	100.0	58.9	12.9	8.5	19.6	Chi Sq.	0.4	0.1	0.3	0.0	0.0
Beyond	277	162	26	18	71	Expected	277.0	167.3	32.5	24.2	53.0
B. A.	100.0	58.5	9.4	6.5	25.6	Chi Sq.	9.2	0.2	1.3	1.6	6.1

Appendix 14, continued

14B. RELATION OF EDUCATION OF MOTHER TO CATEGORY OF PRESENT EMPLOYER, BIOLOGICAL FIELDS

Educ. Level of Mother	Numbers and Per cent Distribution					Computation of Chi Squared					
	Total Cases	Coll., Univ.	U.S. Govt.	Bus., Ind.	All Other	Statistic	Total	Coll., Univ.	U.S. Govt.	Bus., Ind.	All Other
Basic Medical Sciences											
Total	1808	982	188	312	326	Expected	1808.0	982.0	188.0	312.0	326.0
	100.0	54.3	10.4	17.3	18.0	Chi Sq.	41.9	7.6	21.3	7.4	5.6
None	58	23	14	11	10	Expected	58.0	31.5	6.0	10.0	10.5
	100.0	39.7	24.1	19.0	17.2	Chi Sq.	12.9	2.3	10.5	0.1	0.0
Grades 1-3	23	8	6	3	6	Expected	23.0	12.5	2.4	4.0	4.1
	100.0	34.8	26.1	13.0	26.1	Chi Sq.	8.1	1.6	5.4	0.2	0.8
Grades 4-6	124	65	14	22	23	Expected	124.0	67.3	12.9	21.4	22.4
	100.0	52.4	11.3	17.7	18.5	Chi Sq.	0.2	0.1	0.1	0.0	0.0
Grades 7-8	398	202	45	72	79	Expected	398.0	216.2	41.4	68.7	71.8
	100.0	50.8	11.3	18.1	19.8	Chi Sq.	2.1	0.9	0.3	0.2	0.7
H. S. 1-3	178	105	14	35	24	Expected	178.0	96.7	18.5	30.7	32.1
	100.0	59.0	7.9	19.7	13.5	Chi Sq.	4.5	0.7	1.1	0.6	2.0
H. S. Grad.	518	294	41	97	86	Expected	518.0	281.3	53.9	89.4	93.4
	100.0	56.8	7.9	18.7	16.6	Chi Sq.	4.9	0.6	3.1	0.6	0.6
Coll. 1-3	303	166	32	43	62	Expected	303.0	164.6	31.5	52.3	54.6
	100.0	54.8	10.6	14.2	20.5	Chi Sq.	2.7	0.0	0.0	1.6	1.0
Coll. Grad.	163	90	19	27	27	Expected	163.0	88.5	16.9	28.1	29.4
	100.0	55.2	11.7	16.6	16.6	Chi Sq.	0.5	0.0	0.2	0.0	0.2
Beyond B. A.	43	29	3	2	9	Expected	43.0	23.4	4.5	7.4	7.8
	100.0	67.4	7.0	4.7	20.9	Chi Sq.	6.0	1.4	0.5	4.0	0.2
All Other Bio-Sciences											
Total	1989	1207	234	175	373	Expected	1989.0	1207.0	234.0	175.0	373.0
	100.0	60.7	11.8	8.8	18.8	Chi Sq.	38.6	5.6	10.9	6.8	15.3
None	41	16	1	6	18	Expected	41.0	24.9	4.8	3.6	7.7
	100.0	39.0	2.4	14.6	43.9	Chi Sq.	27.6	3.2	3.0	1.6	13.8
Grades 1-3	27	17	3	1	6	Expected	27.0	16.4	3.2	2.4	5.1
	100.0	63.0	11.1	3.7	22.2	Chi Sq.	1.0	0.0	0.0	0.8	0.2
Grades 4-6	140	90	13	9	28	Expected	140.0	85.0	16.5	12.3	26.3
	100.0	64.3	9.3	6.4	20.0	Chi Sq.	2.0	0.3	0.7	0.9	0.1
Grades 7-8	436	249	68	41	78	Expected	436.0	264.6	51.3	38.4	81.8
	100.0	57.1	15.6	9.4	17.9	Chi Sq.	6.7	0.9	5.4	0.2	0.2
H. S. 1-3	231	141	24	21	45	Expected	231.0	140.2	27.2	20.3	43.3
	100.0	61.0	10.4	9.1	19.5	Chi Sq.	0.5	0.0	0.4	0.0	0.1
H. S. Grad.	511	313	63	41	94	Expected	511.0	310.1	60.1	45.0	95.8
	100.0	61.3	12.3	8.0	18.4	Chi Sq.	0.5	0.0	0.1	0.3	0.0
Coll. 1-3	377	236	39	38	64	Expected	377.0	228.8	44.4	33.2	70.7
	100.0	62.6	10.3	10.1	17.0	Chi Sq.	2.2	0.2	0.6	0.7	0.6
Coll. Grad.	181	113	18	17	33	Expected	181.0	109.8	21.3	15.9	33.9
	100.0	62.4	9.9	9.4	18.2	Chi Sq.	0.7	0.1	0.5	0.1	0.0
Beyond B. A.	45	32	5	1	7	Expected	45.0	27.3	5.3	4.0	8.4
	100.0	71.1	11.1	2.2	15.6	Chi Sq.	3.3	0.8	0.0	2.2	0.2

14C. RELATION OF OCCUPATION OF FATHER TO CATEGORY OF PRESENT EMPLOYER, BIOLOGICAL FIELDS

Occup. Level of Father	Number and Per cent Distribution					Computation of Chi Squared					
	Total Cases	Coll., Univ.	U.S. Govt.	Bus., Ind.	All Other	Statistic	Total	Coll., Univ.	U.S. Govt.	Bus., Ind.	All Other
Basic Medical Sciences											
Total	1854	1000	186	315	353	Expected	1854.0	1000.0	186.0	315.0	353.0
	100.0	53.9	10.0	17.0	19.0	Chi Sq.	30.5	3.0	12.8	7.7	7.1
Coll. or	97	52	12	11	22	Expected	97.0	52.3	9.7	16.5	18.5
Univ.	100.0	53.6	12.4	11.3	22.7	Chi Sq.	3.0	0.0	0.5	1.8	0.7
Other	370	210	22	55	83	Expected	370.0	199.6	37.1	62.9	70.4
Prof.	100.0	56.8	5.9	14.9	22.4	Chi Sq.	9.9	0.5	6.2	1.0	2.2
Mana-	318	164	27	61	66	Expected	318.0	171.5	31.9	54.0	60.5
gerial	100.0	51.6	8.5	19.2	20.8	Chi Sq.	2.5	0.3	0.8	0.9	0.5
Farmer	265	153	30	40	42	Expected	265.0	142.9	26.6	45.0	50.5
	100.0	57.7	11.3	15.1	15.8	Chi Sq.	3.1	0.7	0.4	0.6	1.4
Sales,	252	140	32	42	38	Expected	252.0	135.9	25.3	42.8	48.0
Service	100.0	55.6	12.7	16.7	15.1	Chi Sq.	4.0	0.1	1.8	0.0	2.1
Clerical	81	42	13	12	14	Expected	81.0	43.7	8.1	13.8	15.4
	100.0	51.9	16.0	14.8	17.3	Chi Sq.	3.3	0.1	2.9	0.2	0.1
Skilled	295	154	31	55	55	Expected	295.0	159.1	29.6	50.1	56.2
Craft	100.0	52.2	10.5	18.6	18.6	Chi Sq.	0.7	0.2	0.1	0.5	0.0
Unsk. and	176	85	19	39	33	Expected	176.0	94.9	17.7	29.9	33.5
Semi-sk	100.0	48.3	10.8	22.2	18.8	Chi Sq.	3.9	1.0	0.1	2.8	0.0
All Other Bio-Sciences											
Total	2041	1220	242	179	400	Expected	2041.0	1220.0	242.0	179.0	400.0
	100.0	59.8	11.9	8.8	19.6	Chi Sq.	37.0	1.9	13.7	8.9	12.4
Coll. or	106	62	13	6	25	Expected	106.0	63.4	12.6	9.3	20.8
Univ.	100.0	58.5	12.3	5.7	23.6	Chi Sq.	2.1	0.0	0.0	1.2	0.9
Other	418	246	41	28	103	Expected	418.0	249.9	49.6	36.7	81.9
Prof.	100.0	58.9	9.8	6.7	24.6	Chi Sq.	9.0	0.1	1.5	2.0	5.4
Mana-	274	164	24	26	60	Expected	274.0	163.8	32.5	24.0	53.7
gerial	100.0	59.9	8.8	9.5	21.9	Chi Sq.	3.1	0.0	2.2	0.2	0.
Farmer	546	328	80	47	91	Expected	546.0	326.4	64.7	47.9	107.0
	100.0	60.1	14.7	8.6	16.7	Chi Sq.	6.0	0.0	3.6	0.0	2.4
Sales,	197	110	34	18	35	Expected	197.0	117.8	23.4	17.3	38.6
Service	100.0	55.8	17.3	9.1	17.8	Chi Sq.	5.7	0.5	4.8	0.0	0.3
Clerical	76	51	7	4	14	Expected	76.0	45.4	9.0	6.7	14.9
	100.0	67.1	9.2	5.3	18.4	Chi Sq.	2.3	0.7	0.4	1.1	0.1
Skilled	279	165	29	33	52	Expected	279.0	166.8	33.1	24.5	54.7
Craft	100.0	59.1	10.4	11.8	18.6	Chi Sq.	3.6	0.0	0.5	3.0	0.1
Unsk. and	145	94	14	17	20	Expected	145.0	86.7	17.2	12.7	28.4
Semi-sk.	100.0	64.8	9.7	11.7	13.8	Chi Sq.	5.1	0.6	0.6	1.4	2.5

Appendix 15

15A. FIELD-SWITCHING FROM DOCTORATE DEGREE TO 1962 JOB, ALL COHORTS COMBINED

Field of Doctorate	Total, All Fields	Physiology	Pharmacology	Biochemistry	Microbiology	Botany	Genetics	Zoology	Misc. Bio-Sciences	Medical Sciences	Agricultural Sciences	Psychology	Sociology	All Other Fields
Physiology	534	275	20	29	8	2	2	18	21	96	28	1		34
	100.0	51.5	3.7	5.4	1.5	.4	.4	3.4	3.9	18.0	5.2	.2	.0	6.4
Pharmacology	153	2	79	2					3	40		1		26
	100.0	1.3	51.6	1.3	.0	.0	.0	.0	2.0	26.1	.0	.7	.0	17.0
Biochemistry	688	22	22	383	17		5	1	10	41	47			140
	100.0	3.2	3.2	55.7	2.5	.0	.7	.1	1.5	6.0	6.8	.0	.0	20.3
Microbiology	513	17	1	23	351	6	4	2	12	35	16			46
	100.0	3.3	.2	4.5	68.4	1.2	.8	.4	2.3	6.8	3.1	.0	.0	9.0
Botany	445	61	2	8	26	199	26	2	41	11	37			32
	100.0	13.7	.4	1.8	5.8	44.7	5.8	.4	9.2	2.5	8.3	.0	.0	7.2
Genetics	155	9		3	3	7	73	2	9	3	39			7
	100.0	5.8	.0	1.9	1.9	4.5	47.1	1.3	5.8	1.9	25.2	.0	.0	4.5
Zoology	525	99	4	9	17	5	8	244	72	22	16			29
	100.0	18.9	.8	1.7	3.2	1.0	1.5	46.5	13.7	4.2	3.0	.0	.0	5.5
Misc. Bio-Sciences	153	22	1	9	6	8	2	14	62	8	6	1		14
	100.0	14.4	.7	5.9	3.9	5.2	1.3	9.2	40.5	5.2	3.9	.7	.0	9.2
Medical Sciences	254	11	7	6	10			3	4	188	1			24
	100.0	4.3	2.8	2.4	3.9	.0	.0	1.2	1.6	74.0	.4	.0	.0	9.4
Agricultural Sciences	536	14	1	14	3	12	14	6	4	5	387			76
	100.0	2.6	.2	2.6	.6	2.2	2.6	1.1	.7	.9	72.2	.0	.0	14.2
Psychology	468	2							1	9		379	2	75
	100.0	.4	.0	.0	.0	.0	.0	.0	.2	1.9	.0	81.0	.4	16.0
Sociology	449	2					1			2	1	13	314	116
	100.0	.4	.0	.0	.0	.0	.2	.0	.0	.4	.2	2.9	69.9	25.8

Field of Doctorate	Total, All Fields	Economics	Political Science	History-Geography	Mathematics	Physics	Chemistry	Geo-Sciences	Engineering	Languages & Literature	Arts & Humanities	Misc. Professions	Education	All Other Fields
Economics	436	315	6	2	8		3		1		1	76	15	9
	100.0	72.2	1.4	.5	1.8	.0	.7	.0	.2	.0	.2	17.4	3.4	2.1
Political Science	378	14	286	16			7			2		26	22	5
	100.0	3.7	75.7	4.2	.0	.0	1.9	.0	.0	.5	.0	6.9	5.8	1.3
History-Geography	449	4	15	347		2	4	2		9	6	2	34	3
	100.0	.9	3.3	77.3	.0	.4	.9	.4	.0	2.0	1.3	5.1	7.6	.7
Mathematics	458	1			404	4	4	1	20			4	14	6
	100.0	.2	.0	.0	88.2	.9	.9	.2	4.4	.0	.0	.9	3.1	1.3
Physics	436		2		11	335	14	5	44			6	5	14
	100.0	.0	.5	.0	2.5	76.8	3.2	1.1	10.1	.0	.0	1.4	1.1	3.2
Chemistry	493				2	12	374	5	32			26	7	35
	100.0	.0	.0	.0	.4	2.4	75.9	1.0	6.5	.0	.0	5.3	1.4	7.1
Geo-Sciences	433	1		2	6	5	3	387	10			4	7	8
	100.0	.2	.0	.5	1.4	1.2	.7	89.4	2.3	.0	.0	.9	1.6	1.8
Engineering	463				5	8	15	5	402			13	8	7
	100.0	.0	.0	.0	1.1	1.7	3.2	1.1	86.8	.0	.0	2.8	1.7	1.5
Languages & Literature	457		2	3	1		5		1	376	15	18	31	5
	100.0	.0	.4	.7	.2	.0	1.1	.0	.2	82.3	3.3	3.9	6.8	1.1
Arts & Humanities	379	1	3	3	3		3			28	263	31	27	17
	100.0	.3	.8	.8	.8	.0	.8	.0	.0	7.4	69.4	8.2	7.1	4.5
Misc. Professions	366	22	8	13	1		1			3	14	264	21	19
	100.0	6.0	2.2	3.6	.3	.0	.3	.0	.0	.8	3.8	72.1	5.7	5.2
Education	396	2	1	5	9	2	5			8	7	17	299	41
	100.0	.5	.3	1.3	2.3	.5	1.3	.0	.0	2.0	1.8	4.3	75.5	10.4

Appendix 15

15 B. FIELD-SWITCHING FROM DOCTORATE DEGREE TO 1962 JOB, COHORT 1935-40

Field of Doctorate	Total, All Fields	Physiology	Pharmacology	Biochemistry	Microbiology	Botany	Genetics	Zoology	Misc. Bio-Sciences	Medical Sciences	Agricultural Sciences	Psychology	Sociology	All Other Fields
Physiology	198	59	6	17	3	1	1	10	9	51	12			23
	100.0	30.7	3.1	8.9	1.6	.5	.5	5.2	4.7	26.6	6.3	.0	.0	12.0
Pharmacology	40	1	9							11				19
	100.0	2.5	22.5	.0	.0	.0	.0	.0	.0	27.5	.0	.0	.0	47.5
Biochemistry	190	3	12	57	8		2		1	20	20			67
	100.0	1.6	6.3	30.0	4.2	.0	1.1	.0	.5	10.5	10.5	.0	.0	35.3
Microbiology	137	5	1	8	63	3	1		4	17	11			29
	100.0	3.6	.7	2.2	46.0	2.2	.7	.0	2.9	12.4	8.0	.0	.0	21.2
Botany	128	5		3	5	51	10	1	17	4	12			20
	100.0	3.9	.0	2.3	3.9	39.8	7.8	.8	13.3	3.1	9.4	.0	.0	15.6
Genetics	51	3		1	1	4	16	1	4	3	14			4
	100.0	5.9	.0	2.0	2.0	7.8	31.4	2.0	7.8	5.9	27.5	.0	.0	7.8
Zoology	153	24	1	2	2	2	2	61	22	11	10			16
	100.0	15.7	.7	1.3	1.3	1.3	1.3	39.9	14.4	7.2	6.5	.0	.0	10.5
Misc. Bio-Sciences	31	6		1	2	1	1	5	7	2	1	1		4
	100.0	19.4	.0	3.2	6.5	3.2	3.2	16.1	22.6	6.5	3.2	3.2	.0	12.9
Medical Sciences	70	3	1	2	3			1	1	52				7
	100.0	4.3	1.4	2.9	4.3	.0	.0	1.4	1.4	74.3	.0	.0	.0	10.0
Agricultural Sciences	151	1		2		9	4	3	1		98			33
	100.0	.7	.0	1.3	.0	6.0	2.6	2.0	.7	.0	64.9	.0	.0	21.4
Psychology	144									3		102		39
	100.0	.0	.0	.0	.0	.0	.0	.0	.0	2.1	.0	70.8	.0	27.1
Sociology	143	1					1			1	1	6	89	44
	100.0	.7	.0	.0	.0	.0	.7	.0	.0	.7	.7	4.2	62.2	39.8

Field of Doctorate	Total, All Fields	Economics	Political Science	History-Geography	Mathematics	Physics	Chemistry	Geo-Sciences	Engineering	Languages & Literature	Arts & Humanities	Misc. Professions	Education	All Other Fields
Economics	136	92	4	1	1		2					24	8	4
	100.0	67.6	2.9	.7	.7	.0	1.5	.0	.0	.0	.0	17.6	5.9	2.9
Political Science	110	8	75	5			1			1		10	8	2
	100.0	7.3	68.2	4.5	.0	.0	.9	.0	.0	.9	.0	3.1	7.3	1.8
History-Geography	117		8	80		1	3	1		2	1	5	14	2
	100.0	.0	6.8	68.4	.0	.9	2.6	.9	.0	1.7	.9	4.3	12.0	1.7
Mathematics	131	1			108		1		6			3	12	
	100.0	.8	.0	.0	82.4	.0	.8	.0	4.6	.0	.0	2.3	9.2	.0
Physics	140		1		2	90	9	3	22			3	3	7
	100.0	.0	.7	.0	1.4	64.3	6.4	2.1	15.7	.0	.0	2.1	2.1	5.0
Chemistry	168				1	2	107	2	19			17	5	15
	100.0	.0	.0	.0	.6	1.2	63.7	1.2	11.3	.0	.0	10.1	3.0	8.9
Geo-Sciences	136	1		1	1		1	122	1			3	3	3
	100.0	.7	.0	.7	.7	.0	.7	89.7	.7	.0	.0	2.2	2.2	2.2
Engineering	138					3	7		110			11	6	1
	100.0	.0	.0	.0	.0	2.2	5.1	.0	79.7	.0	.0	8.0	6.3	.7
Languages & Literature	153		1				3		1	115	7	10	12	4
	100.0	.0	.7	.0	.0	.0	2.0	.0	.7	75.2	4.6	6.5	7.8	2.6
Arts & Humanities	122	1	1	2			1			15	65	18	11	8
	100.0	.8	.8	1.6	.0	.0	.8	.0	.0	12.3	53.3	14.8	9.0	6.6
Misc. Professions	91	6	1	4	1		1			1	6	57	7	7
	100.0	6.6	1.1	4.4	1.1	.0	1.1	.0	.0	1.1	6.6	62.6	7.7	7.7
Education	93	1	1	1	3	2	1			5	3	6	61	9
	100.0	1.1	1.1	1.1	3.2	2.2	1.1	.0	.0	5.4	3.2	6.5	65.6	9.7

Appendix 15

15 C. FIELD-SWITCHING FROM DOCTORATE DEGREE TO 1962 JOB, COHORT 1945-50

Field of Doctorate	Total, All Fields	Physiology	Pharmacology	Biochemistry	Microbiology	Botany	Genetics	Zoology	Misc. Bio-Sciences	Medical Sciences	Agricultural Sciences	Psychology	Sociology	All Other Fields
Physiology	79 100.0	39 49.4	6 7.6	3 3.8	1 1.3	.0	1 1.3	2 2.5	4 5.1	14 17.7	2 2.5	1 1.3	.0	6 7.6
Pharmacology	47 100.0	.0	19 40.4	2 4.3	.0	.0	.0	.0	1 2.1	19 40.4	.0	1 2.1	.0	5 10.6
Biochemistry	154 100.0	9 5.8	2 1.3	80 51.9	6 3.9	.0	1 .6	.0	3 1.9	7 4.5	10 6.5	.0	.0	36 23.4
Microbiology	122 100.0	5 4.1	.0	5 4.1	90 73.8	3 2.5	.0	.0	2 1.6	6 4.9	3 2.5	.0	.0	8 6.6
Botany	140 100.0	21 15.0	2 1.4	2 1.4	10 7.1	55 39.3	12 8.6	.0	10 7.1	5 3.6	15 10.7	.0	.0	8 5.7
Genetics	27 100.0	1 3.7	.0	1 3.7	.0	1 3.7	11 40.7	.0	2 7.4	.0	9 33.3	.0	.0	2 7.4
Zoology	176 100.0	29 16.5	1 .6	3 1.7	8 4.5	2 1.1	2 1.1	84 47.7	28 15.9	8 4.5	3 1.7	.0	.0	8 4.5
Misc. Bio-Sciences	1 100.0	.0	.0	.0	.0	.0	1 100.0	.0	.0	.0	.0	.0	.0	.0
Medical Sciences	63 100.0	5 7.9	2 3.2	1 1.6	5 7.9	.0	.0	1 1.6	3 4.8	42 66.7	.0	.0	.0	4 6.3
Agricultural Sciences	168 100.0	4 2.4	1 .6	5 3.0	1 .6	3 1.8	6 3.6	1 .6	.0	2 1.2	131 78.0	.0	.0	14 8.3
Psychology	171 100.0	.0	.0	.0	.0	.0	.0	.0	1 .6	6 3.5	.0	140 81.9	.0	24 14.0
Sociology	125 100.0	1 .8	.0	.0	.0	.0	.0	0	.0	.0	.0	4 3.2	82 65.6	38 30.4

Field of Doctorate	Total, All Fields	Economics	Political Science	History-Geography	Mathematics	Physics	Chemistry	Geo-Sciences	Engineering	Languages & Literature	Arts & Humanities	Misc. Professions	Education	All Other Fields
Economics	134 100.0	94 70.1	2 1.5	1 .7	.0	.0	1 .7	.0	.0	.0	1 .7	26 19.4	5 3.7	4 3.0
Political Science	107 100.0	3 2.8	80 74.8	6 5.6	.0	.0	3 2.8	.0	.0	1 .9	.0	5 4.7	8 7.5	1 .9
History-Geography	158 100.0	2 1.3	4 2.5	119 75.3	.0	.0	.0	.0	.0	5 3.2	2 1.3	13 8.2	13 8.2	.0
Mathematics	131 100.0		.0	.0	117 89.3	.0	2 1.5	.0	7 5.3	.0	.0	1 .8	1 .8	3 2.3
Physics	157 100.0	.0	1 .6	.0	5 3.2	120 76.4	3 1.9	2 1.3	15 9.6	.0	.0	2 1.3	2 1.3	7 4.5
Chemistry	155 100.0	.0	.0	.0	.0	1 .6	124 80.0	1 .6	11 7.1	.0	.0	6 3.9	2 1.3	10 6.5
Geo-Sciences	144 100.0	.0	.0	1 .7	2 1.4	4 2.8	2 1.4	123 85.4	6 4.2	.0	.0	1 .7	4 2.8	1 .7
Engineering	144 100.0	.0	.0	.0	3 2.1	1 .7	6 4.2	2 1.4	125 86.8	.0	.0	1 .7	2 1.4	4 2.8
Languages & Literature	141 100.0	.0	1 .7	3 2.1	1 .7	.0	.0	.0	.0	116 82.3	6 4.3	8 5.7	6 4.3	.0
Arts & Humanities	115 100.0	.0	1 .9	1 .9	2 1.7	.0	1 .9	.0	.0	3 2.6	81 70.4	11 9.6	12 10.4	3 2.6
Misc. Professions	117 100.0	7 6.0	5 4.3	6 5.1	.0	.0	.0	.0	.0	2 1.7	6 5.1	80 68.4	5 4.3	6 5.1
Education	140 100.0	1 .7	.0	1 .7	2 1.4	.0	1 .7	.0	.0	1 .7	2 1.4	5 3.6	106 75.7	21 15.0

Appendix 15

15 D. FIELD-SWITCHING FROM DOCTORATE DEGREE TO 1962 JOB, COHORT 1955-60

Field of Doctorate	Total, All Fields	Physiology	Pharmacology	Biochemistry	Microbiology	Botany	Genetics	Zoology	Misc. Bio-Sciences	Medical Sciences	Agricultural Sciences	Psychology	Sociology	All Other Fields
Physiology	263 100.0	177 67.3	8 3.0	9 3.4	4 1.5	1 .4	.0	6 2.3	8 3.0	31 11.8	14 5.3	.0	.0	5 1.9
Pharmacology	66 100.0	1 1.5	51 77.3	.0	.0	.0	.0	.0	2 3.0	10 15.2	.0	.0	.0	2 3.0
Biochemistry	344 100.0	10 2.9	8 2.3	246 71.5	3 .9	.0	2 .6	1 .3	6 1.7	14 4.1	17 4.9	.0	.0	37 10.8
Microbiology	254 100.0	7 2.8	.0	15 5.9	198 78.0	.0	3 1.2	2 .8	6 2.4	12 4.7	2 .8	.0	.0	9 3.5
Botany	177 100.0	35 19.8	.0	3 1.7	11 6.2	93 52.5	4 2.3	1 .6	14 7.9	2 1.1	10 5.6	.0	.0	4 2.3
Genetics	77 100.0	5 6.5	.0	1 1.3	2 2.6	2 2.6	46 59.7	1 1.3	3 3.9	.0	16 20.8	.0	.0	1 1.3
Zoology	196 100.0	46 23.5	2 1.0	4 2.0	7 3.6	1 .5	4 2.0	99 50.5	22 11.2	3 1.5	3 1.5	.0	.0	5 2.6
Misc. Bio-Sciences	121 100.0	16 13.2	1 .8	8 6.6	4 3.3	7 5.8	.0	9 7.4	55 45.5	6 5.0	5 4.1	.0	.0	10 8.3
Medical Sciences	121 100.0	3 2.5	4 3.3	3 2.5	2 1.7	.0	.0	1 .8	.0	94 77.7	1 .8	.0	.0	13 10.7
Agricultural Sciences	217 100.0	9 4.1	.0	7 3.2	2 .9	.0	4 1.8	2 .9	3 1.4	3 1.4	158 72.8	.0	.0	29 13.4
Psychology	153 100.0	2 1.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	137 89.5	2 1.3	12 7.8
Sociology	181 100.0	.0	.0	.0	.0	.0	.0	.0	.0	1 .6	.0	3 1.7	143 79.0	34 18.8

Field of Doctorate	Total, All Fields	Economics	Political Science	History-Geography	Mathematics	Physics	Chemistry	Geo-Sciences	Engineering	Languages & Literature	Arts & Humanities	Misc. Professions	Education	All Other Fields
Economics	166 100.0	129 77.7	.0	.0	7 4.2	.0	.0	.0	1 .6	.0	.0	26 15.7	2 1.2	1 .6
Political Science	161 100.0	3 1.9	131 81.4	5 3.1	.0	.0	3 1.9	.0	.0	.0	.0	11 6.8	6 3.7	2 1.2
History-Geography	174 100.0	2 1.1	3 1.7	148 85.1	.0	1 .6	1 .6	1 .6	.0	2 1.1	3 1.7	5 2.9	7 4.0	1 .6
Mathematics	196 100.0	.0	.0	.0	179 91.3	4 2.0	1 .5	1 .5	7 3.6	.0	.0	.0	1 .5	3 1.5
Physics	139 100.0	.0	.0	.0	4 2.9	125 89.9	2 1.4	.0	7 5.0	.0	.0	1 .7	.0	.0
Chemistry	170 100.0	.0	.0	.0	1 .6	9 5.3	143 84.1	2 1.2	2 1.2	.0	.0	3 1.8	.0	10 5.9
Geo-Sciences	153 100.0	.0	.0	.0	3 2.0	1 .7	.0	142 92.8	3 2.0	.0	.0	.0	.0	4 2.6
Engineering	181 100.0	.0	.0	.0	2 1.1	4 2.2	2 1.1	3 1.7	167 92.3	.0	.0	1 .6	.0	2 1.1
Languages & Literature	163 100.0	.0	.0	.0	.0	.0	2 1.2	.0	.0	145 89.0	2 1.2	.0	13 8.0	1 .6
Arts & Humanities	142 100.0	.0	1 .7	.0	1 .7	.0	1 .7	.0	.0	10 7.0	117 82.4	2 1.4	4 2.8	6 4.2
Misc. Professions	158 100.0	9 5.7	2 1.3	3 1.9	.0	.0	.0	.0	.0	.0	2 1.3	127 80.4	9 5.7	6 3.8
Education	163 100.0	.0	.0	3 1.8	4 2.5	.0	3 1.8	.0	.0	2 1.2	2 1.2	6 3.7	132 81.0	11 6.7

Appendix 16

EMPLOYERS OF WOMEN DOCTORATE-HOLDERS

COHORT	FIELD	CATEGORY OF PRESENT EMPLOYER, BY FIELD AND COHORT										
		TOTAL GROUP	COLL & U	ELEM & HS	U.S. GOVT	FRGN UNIV	ST & LOC.	NON-PRFT	BUS, IND.	SELF EMPL	FRN, NON-U	OTHER
ALL	TOTAL, ALL FIELDS	1053	690	56	74	23	31	65	40	27	17	30
COHORT 35-40	TOTAL, ALL FIELDS	330	190	31	22	5	11	27	11	13	6	14
	BIO-SCIENCES, TOTAL	128	71	10	11	2	4	10	6	5	1	8
	BASIC MED. SCIENCES	78	40	5	10		4	7	5	4		3
	OTHER BIO-SCIENCES	50	31	5	1	2		3	1	1	1	5
	MEDICAL SCIENCES	8	3		1		1	1	1	1		
	AGRIC. SCIENCES	1			1							
	PSYCHOLOGY	35	12	6	2		3	5	2	3	1	1
	SOCIAL SCIENCES	62	35	6	4	2	2	5		3	1	4
	MATHEMATICS	15	14					1				
	PHYSICAL SCIENCES	11	4	1	1		1	1	1	1		1
	ENGINEERING											
	ALL OTHER FIELDS	70	51	8	2	1		4	1		3	
COHORT 45-50	TOTAL, ALL FIELDS	374	257	16	25	4	10	22	16	12	4	8
	BIO-SCIENCES, TOTAL	129	88	3	8	1	3	10	5	4	3	4
	BASIC MED. SCIENCES	76	52	1	4		1	6	5	4	2	1
	OTHER BIO-SCIENCES	53	36	2	4	1	2	4			1	3
	MEDICAL SCIENC.	7	3		2			2				
	AGRIC. SCIENCES	10	7						1	1		1
	PSYCHOLOGY	37	21	2	2		2	5	3	2		
	SOCIAL SCIENCES	59	40	1	4	1	3	4		3	1	2
	MATHEMATICS	12	11						1			
	PHYSICAL SCIENCES	19	9	3	3				4			
	ENGINEERING											
	ALL OTHER FIELDS	101	78	7	6	2	2	1	2	2		1
COHORT 55-60	TOTAL, ALL FIELDS	349	243	9	17	14	10	16	13	2	7	8
	BIO-SCIENCES, TOTAL	130	90	1	12	6	4	7	4		4	2
	BASIC MED. SCIENCES	87	62	1	8	1	3	5	3		2	2
	OTHER BIO-SCIENCES	43	28		4	5	1	2	1		2	
	MEDICAL SCIENCES	8	4		2		1				1	
	AGRIC. SCIENCES	6	3		2		1					
	PSYCHOLOGY	20	9	1	1		1	6	1	1		
	SOCIAL SCIENCES	64	47	1	7	1	1	2	1		2	2
	MATHEMATICS	10	7		1	1			1			
	PHYSICAL SCIENCES	17	9		1				4			3
	ENGINEERING											
	ALL OTHER FIELDS	94	74	6	1	6	2	1	2	1		1

Appendix 17

GEOMETRIC MEAN OF SALARIES ON PRESENT JOB, BY MAJOR FUNCTION PERFORMED, FIELDS, AND COHORTS

COHORT	FIELD	TEACHING RESEARCH 50% EACH		RESEARCH ADMIN. 50% EACH		ADMIN. TEACHING 50% EACH		RESEARCH 50% OR MORE OTHERS LESS	
		NO.	MEAN	NO.	MEAN	NO.	MEAN	NO.	MEAN
ALL	TOTAL, ALL FIELDS	318	11,167	176	15,922	74	12,569	2464	11,832
COHORT 1935	TOTAL, ALL FIELDS	37	11,374	22	18,737	18	12,735	180	13,909
	BIO-SCIENCES, TOTAL	14	9,150	5	16,749	5	12,360	82	11,968
	BASIC MED. SCIENCES	3	4,713	5	16,749			37	12,621
	PHYSIOLOGY	2	3,388					17	13,163
	PHARMACOLOGY			1	12,023			1	15,488
	BIOCHEMISTRY			2	26,002			10	9,661
	MICROBIOLOGY	1	9,121	2	12,735			9	15,333
	OTHER BIO-SCIENCES	11	10,965			5	12,360	45	11,456
	BOTANY	2	10,965			2	12,303	16	12,059
	GENETICS	2	16,406					6	9,623
	ZOOLOGY	5	9,290			1	10,000	16	10,233
	MISC. BIOLOGY	2	11,092			2	13,804	7	15,336
	MEDICAL SCIENCES							2	12,589
	AGRIC. SCIENCES	3	9,333	3	13,082			17	13,470
	PSYCHOLOGY	1	18,621	1	19,953	1	7,079	3	12,303
	SOCIAL SCIENCES	6	8,446	3	19,953	4	13,182	18	17,535
	SOCIOLOGY	3	13,909					8	19,613
	ECONOMICS	2	11,615	1	17,783	2	12,446	3	20,893
	POLITICAL SCIENCE			2	21,135	2	13,964	3	16,341
	HIST., GEOGRAPHY	1	1,000					4	12,957
	M-P-E FIELDS	7	18,867	9	19,055	4	15,941	45	16,170
	MATHEMATICS	1	19,055	1	22,910	3	13,592	9	18,244
	PHYSICAL SCIENCES	3	15,021	7	18,380			29	16,025
	PHYSICS	3	15,021	5	19,589			7	18,994
	CHEMISTRY			2	15,668			14	15,743
	GEOLOGY							8	14,248
	ENGINEERING	3	23,622	1	20,418	1	25,704	7	14,358
	ALL OTHER FIELDS	6	14,344	1	64,566	4	11,817	13	16,861
	LANG. & LIT.	1	15,136			3	10,965	3	13,909
	ARTS, HUMANITIES	3	11,135	1	64,566			5	17,140
	PROFESSIONS	1	32,360			1	14,791	4	20,537
	EDUCATION	1	12,882					1	12,589
COHORT 1940	TOTAL, ALL FIELDS	37	13,421	40	18,198	12	14,963	259	14,757
	BIO-SCIENCES, TOTAL	13	12,023	11	16,804	3	16,095	131	14,365
	BASIC MED. SCIENCES	8	10,934	7	15,035	1	18,198	98	14,859
	PHYSIOLOGY	2	10,000	1	15,849			31	16,595
	PHARMACOLOGY	1	15,849	1	13,489			4	11,615
	BIOCHEMISTRY	2	11,482	3	15,371			46	14,511
	MICROBIOLOGY	3	9,924	2	14,963	1	18,198	17	13,728
	OTHER BIO-SCIENCES	5	13,996	4	20,418	2	15,136	33	13,009
	BOTANY	2	13,964	3	23,084			13	11,688
	GENETICS	1	15,849			1	19,055	6	13,750
	ZOOLOGY	2	13,182	1	14,125	1	12,023	14	14,032
	MISC. BIOLOGY								
	MEDICAL SCIENCES			2	13,645			1	19,953
	AGRIC. SCIENCES	3	11,569	1	13,804			17	13,219
	PSYCHOLOGY	2	14,455	1	28,184			11	10,407
	SOCIAL SCIENCES	7	15,592	3	18,059	5	14,589	33	16,218
	SOCIOLOGY	2	14,289	1	15,488	1	12,023	6	19,276
	ECONOMICS	1	16,982	2	19,499	1	19,055	14	15,035
	POLITICAL SCIENCE					1	15,849	7	16,327
	HIST., GEOGRAPHY	4	15,941			2	13,489	6	16,155
	M-P-E FIELDS	5	15,632	19	18,803	3	16,218	55	17,052
	MATHEMATICS	1	16,218	3	17,510			5	22,490
	PHYSICAL SCIENCES	2	12,023	13	19,221	2	17,378	45	16,403
	PHYSICS	1	13,182	4	14,963	2	17,378	19	16,615
	CHEMISTRY	1	10,965	7	20,960			16	17,808
	GEOLOGY			2	23,443			10	14,029
	ENGINEERING	2	19,953	3	18,337	1	14,125	5	18,367
	ALL OTHER FIELDS	7	13,271	3	22,910	1	10,715	11	12,073
	LANG. & LIT.	4	13,259	1	28,184	1	10,715	2	15,136
	ARTS, HUMANITIES	3	13,282					4	15,941
	PROFESSIONS			1	26,915			3	9,550
	EDUCATION			1	15,849			2	7,853

Appendix 17, continued

GEOMETRIC MEAN OF SALARIES ON PRESENT JOB, BY MAJOR FUNCTION PERFORMED, FIELDS AND COHORTS

COHORT	FIELD	TEACHING 50% OR MORE OTHERS LESS NO.	TEACHING 50% OR MORE OTHERS LESS MEAN	ADMIN. 50% OR MORE OTHERS LESS NO.	ADMIN. 50% OR MORE OTHERS LESS MEAN	ALL OTHERS NO.	ALL OTHERS MEAN	UNKNOWN NO.	UNKNOWN MEAN
ALL	TOTAL, ALL FIELDS	2258	10,021	1542	16,281	1502	13,467	451	13,236
COHORT 1935	TOTAL, ALL FIELDS	292	11,233	268	18,694	217	15,291	78	13,480
	BIO-SCIENCES, TOTAL	67	9,585	69	18,495	45	15,517	15	10,535
	BASIC MED. SCIENCES	32	9,286	39	18,481	27	15,944	9	13,664
	PHYSIOLOGY	18	10,497	13	18,102	15	16,622	2	17,378
	PHARMACOLOGY	4	11,482	2	15,849	2	15,488	2	14,125
	BIOCHEMISTRY	3	2,906	6	21,217	5	18,367	3	10,550
	MICROBIOLOGY	7	9,870	18	18,223	5	12,360	2	15,312
	OTHER BIO-SCIENCES	35	9,870	30	18,525	18	14,903	6	7,133
	BOTANY	11	8,949	11	19,661	8	11,990		
	GENETICS	3	6,657	4	18,837	1	19,953		
	ZOOLOGY	16	10,517	7	15,798	6	18,549	5	5,059
	MISC. BIOLOGY	5	12,647	8	19,444	3	15,606	1	39,811
	MEDICAL SCIENCES	3	15,251	6	14,511	13	15,961	2	6,238
	AGRIC. SCIENCES	2	9,661	22	15,882	17	11,266	1	19,055
	PSYCHOLOGY	14	10,504	9	20,522	20	16,350	1	10,000
	SOCIAL SCIENCES	80	12,362	44	17,717	34	16,067	16	12,303
	SOCIOLOGY	22	12,735	14	13,759	9	14,232	4	7,372
	ECONOMICS	15	13,698	7	25,371	9	17,556	4	10,777
	POLITICAL SCIENCE	18	14,197	14	19,630	9	17,919	6	17,446
	HIST., GEOGRAPHY	25	10,251	9	16,939	7	14,551	2	15,668
	M-P-E FIELDS	50	12,001	89	21,380	49	18,406	26	18,540
	MATHEMATICS	18	12,670	17	20,009	6	19,423	1	25,119
	PHYSICAL SCIENCES	26	10,781	5	20,651	31	17,072	15	17,620
	PHYSICS	8	12,773	21	25,061	12	17,815	4	17,479
	CHEMISTRY	9	8,004	18	21,245	4	15,578	9	18,014
	GEOLOGY	9	12,494	16	15,510	15	16,904	2	16,218
	ENGINEERING	6	16,218	17	25,564	12	21,754	10	19,409
	ALL OTHER FIELDS	76	11,230	29	15,961	39	12,405	17	12,253
	LANG. & LIT.	35	10,872	6	12,589	11	14,068	6	12,210
	ARTS, HUMANITIES	19	13,359	7	16,928	10	9,818	3	12,882
	PROFESSIONS	13	11,522	6	17,510	9	12,753	5	11,376
	EDUCATION	9	8,511	10	16,710	9	13,421	3	13,282
COHORT 1940	TOTAL, ALL FIELDS	286	11,075	365	17,733	256	16,025	86	15,795
	BIO-SCIENCES, TOTAL	72	10,105	129	17,338	89	16,066	24	18,022
	BASIC MED. SCIENCES	36	11,510	82	18,005	59	16,502	18	19,351
	PHYSIOLOGY	18	11,077	9	16,555	18	16,873	7	18,746
	PHARMACOLOGY			8	18,357	5	17,540	3	20,262
	BIOCHEMISTRY	8	9,745	41	19,401	24	15,773	5	23,228
	MICROBIOLOGY	10	14,093	24	16,247	12	17,013	3	14,679
	OTHER BIO-SCIENCES	36	8,874	47	16,241	30	15,251	6	14,565
	BOTANY	12	7,216	12	14,596	10	13,243	3	10,881
	GENETICS	3	11,569	10	18,324	5	14,061	1	64,566
	ZOOLOGY	21	9,614	24	15,878	15	17,218	2	10,715
	MISC. BIOLOGY			1	30,201				
	MEDICAL SCIENCES	1	10,471	8	20,302	7	20,153	1	12,023
	AGRIC. SCIENCES	7	11,296	19	17,442	12	14,709	6	18,549
	PSYCHOLOGY	9	12,882	22	16,543	21	16,648	3	10,392
	SOCIAL SCIENCES	61	11,832	39	16,577	40	15,969	14	14,125
	SOCIOLOGY	15	10,617	11	14,791	14	12,861	2	15,668
	ECONOMICS	7	11,326	11	19,337	14	19,562	4	14,877
	POLITICAL SCIENCE	12	14,427	8	19,953	4	18,517	7	13,314
	HIST., GEOGRAPHY	17	11,828	9	13,386	8	15,182	1	14,125
	M-P-E FIELDS	62	11,059	95	21,414	54	19,236	20	18,262
	MATHEMATICS	19	11,694	17	21,497	8	17,130	2	19,953
	PHYSICAL SCIENCES	38	10,715	52	1.,943	35	19,616	15	17,648
	PHYSICS	12	12,494	14	19,407	7	22,096	1	14,125
	CHEMISTRY	9	11,305	27	20,328	13	19,432	7	19,890
	GEOLOGY	17	9,346	11	19,704	15	18,707	7	16,167
	ENGINEERING	5	11,376	26	24,634	11	19,661	3	20,418
	ALL OTHER FIELDS	74	11,252	53	14,248	33	11,370	18	12,685
	LANG. & LIT.	26	10,134	13	12,974	12	10,573	7	11,671
	ARTS, HUMANITIES	21	12,264	8	16,740	12	12,735	2	13,489
	PROFESSIONS	9	12,527	16	14,920	6	10,839	4	12,957
	EDUCATION	18	11,220	16	13,548	3	10,634	5	13,676

Appendix 17, continued

GEOMETRIC MEAN OF SALARIES ON PRESENT JOB, BY MAJOR FUNCTION PERFORMED, FIELDS, AND COHORTS

COHORT	FIELD	TEACHING RESEARCH 50% EACH		RESEARCH ADMIN. 50% EACH		ADMIN. TEACHING 50% EACH		RESEARCH 50% OR MORE OTHERS LESS	
		NO.	MEAN	NO.	MEAN	NO.	MEAN	NO.	MEAN
COHORT 1945	TOTAL, ALL FIELDS	33	13,861	22	14,544	17	12,419	243	14,299
	BIO-SCIENCES, TOTAL	7	9,676	10	13,836	1	11,749	98	13,137
	BASIC MED. SCIENCES	3	7,586	8	12,375			48	13,790
	PHYSIOLOGY	1	5,012	1	14,125			11	13,833
	PHARMACOLOGY							2	16,595
	BIOCHEMISTRY	2	9,333	5	11,067			21	14,220
	MICROBIOLOGY			2	15,312			14	12,797
	OTHER BIO-SCIENCES	4	11,615	2	21,628	1	11,749	50	12,538
	BOTANY			1	12,882			25	12,647
	GENETICS							5	14,656
	ZOOLOGY	4	11,615	1	36,310	1	11,749	20	11,926
	MISC. BIOLOGY								
	MEDICAL SCIENCES	1	10,965	1	18,198			4	18,409
	AGRIC. SCIENCES	2	13,489					24	13,297
	PSYCHOLOGY	3	13,082	1	10,000			15	13,448
	SOCIAL SCIENCES	10	18,536	5	14,724	5	11,429	24	15,195
	SOCIOLOGY	2	13,335			1	15,136	5	14,321
	ECONOMICS	4	22,005	4	14,207	1	9,550	15	16,494
	POLITICAL SCIENCE	2	17,378	1	16,982			1	12,303
	HIST., GEOGRAPHY	2	19,499			3	11,049	3	11,931
	M-P-E FIELDS	5	18,030	4	15,941	2	12,589	59	17,155
	MATHEMATICS	3	18,762			1	10,965	12	19,917
	PHYSICAL SCIENCES	1	14,455	4	15,941	1	14,455	40	16,330
	PHYSICS			1	14,125	1	14,455	18	16,895
	CHEMISTRY	1	14,455	2	17,989			17	15,679
	GEOLOGY			1	14,125			5	16,595
	ENGINEERING	1	19,953					7	17,608
	ALL OTHER FIELDS	5	10,815	1	18,198	9	13,049	19	12,726
	LANG. & LIT.	3	7,189			2	13,645	8	10,998
	ARTS, HUMANITIES	1	21,878					4	13,567
	PROFESSIONS					3	13,698	6	15,251
	EDUCATION	1	18,198	1	18,198	4	12,303	1	10,715
COHORT 1950	TOTAL, ALL FIELDS	49	12,221	40	16,304	4	12,589	368	13,501
	BIO-SCIENCES, TOTAL	21	10,076	10	14,126			152	12,568
	BASIC MED. SCIENCES	10	11,041	5	18,030			97	13,011
	PHYSIOLOGY	1	10,965	1	13,182			18	12,023
	PHARMACOLOGY			1	19,953			8	15,093
	BIOCHEMISTRY	3	11,482	1	22,910			40	13,344
	MICROBIOLOGY	6	10,839	2	17,783			31	12,691
	OTHER BIO-SCIENCES	11	9,276	5	11,067			55	11,828
	BOTANY	6	7,793	3	11,305			20	12,388
	GENETICS			1	11,482			9	12,146
	ZOOLOGY	5	11,429	1	10,000			26	11,311
	MISC. BIOLOGY								
	MEDICAL SCIENCES	2	18,621	2	17,783			8	18,043
	AGRIC. SCIENCES	5	10,715	2	16,406			40	12,340
	PSYCHOLOGY	1	34,675	3	14,455	2	14,125	12	14,071
	SOCIAL SCIENCES	3	13,592	2	17,179			31	13,539
	SOCIOLOGY	1	14,455					12	12,758
	ECONOMICS			1	16,982			9	15,333
	POLITICAL SCIENCE							5	16,369
	HIST., GEOGRAPHY	2	13,182	1	17,378			5	10,328
	M-P-E FIELDS	13	15,878	20	17,561	1	12,023	109	15,496
	MATHEMATICS	5	18,536	2	20,893			17	19,289
	PHYSICAL SCIENCES	7	15,538	16	17,155			77	14,481
	PHYSICS	1	13,132	7	17,552			27	16,301
	CHEMISTRY			5	20,045			22	13,774
	GEOLOGY	6	15,969	4	13,567			28	13,434
	ENGINEERING	1	8,511	2	17,783	1	12,023	15	17,111
	ALL OTHER FIELDS	4	9,773	1	16,595	1	10,471	16	10,903
	LANG. & LIT.	1	8,912					4	13,335
	ARTS, HUMANITIES	2	11,350					6	13,282
	PROFESSIONS							5	7,312
	EDUCATION	1	7,943	1	16,595	1	10,471	1	10,965

Appendix 17, continued

GEOMETRIC MEAN OF SALARIES ON PRESENT JOB, BY MAJOR FUNCTION PERFORMED, FIELDS, AND COHORTS

COHORT	FIELD	TEACHING 50% OR MORE OTHERS LESS NO.	TEACHING 50% OR MORE OTHERS LESS MEAN	ADMIN. 50% OR MORE OTHERS LESS NO.	ADMIN. 50% OR MORE OTHERS LESS MEAN	ALL OTHERS NO.	ALL OTHERS MEAN	UNKNOWN NO.	UNKNOWN MEAN
COHORT 1945	TOTAL, ALL FIELDS	301	10,200	234	16,403	210	14,292	65	15,267
	BIO-SCIENCES, TOTAL	66	9,605	56	16,451	40	11,782	13	13,973
	BASIC MED. SCIENCES	24	10,264	29	17,657	18	13,200	10	14,388
	PHYSIOLOGY	6	9,550	4	19,055	8	11,955	2	28,184
	PHARMACOLOGY	2	13,804	5	17,458	5	12,023		
	BIOCHEMISTRY	7	10,132	15	17,486	4	17,479	5	13,182
	MICROBIOLOGY	9	10,181	5	17,298	1	15,136	3	10,634
	OTHER BIO-SCIENCES	42	9,252	27	15,251	22	10,738	3	12,685
	BOTANY	8	9,944	14	15,488	8	13,221	1	9,550
	GENETICS	4	9,121	2	16,218			1	15,136
	ZOOLOGY	29	8,933	11	14,791	14	9,534	1	14,125
	MISC. BIOLOGY	1	15,136						
	MEDICAL SCIENCES	3	3,441	4	18,729	6	19,499	1	30,201
	AGRIC. SCIENCES	6	12,114	12	16,565	9	13,386	3	15,136
	PSYCHOLOGY	21	13,082	13	14,663	14	10,929	1	1,995
	SOCIAL SCIENCES	85	9,898	42	14,607	41	13,527	21	15,623
	SOCIOLOGY	27	9,239	8	16,934	13	10,927	5	10,000
	ECONOMICS	16	11,204	12	18,517	9	18,014	9	21,598
	POLITICAL SCIENCE	11	11,749	10	11,092	3	17,510	1	19,953
	HIST., GEOGRAPHY	31	9,278	12	13,131	16	13,049	6	13,386
	M-P-E FIELDS	43	10,924	60	19,739	58	18,965	17	18,223
	MATHEMATICS	17	10,275	7	16,868	14	19,499	3	15,488
	PHYSICAL SCIENCES	22	11,303	40	20,153	32	17,657	11	18,897
	PHYSICS	6	13,592	9	23,807	17	18,473	4	20,655
	CHEMISTRY	8	10,998	23	19,735	8	17,938	5	17,140
	GEOLOGY	8	10,116	8	17,733	7	15,538	2	20,184
	ENGINEERING	4	11,749	13	20,167	12	22,217	3	18,762
	ALL OTHER FIELDS	77	10,279	47	14,555	42	13,011	9	13,734
	LANG. & LIT.	26	9,161	7	16,485	11	12,750	1	11,482
	ARTS, HUMANITIES	16	9,661	5	13,182	8	9,972		
	PROFESSIONS	10	10,233	11	14,395	16	15,779	4	14,372
	EDUCATION	25	12,078	24	14,398	7	11,712	4	13,725
COHORT 1950	TOTAL, ALL FIELDS	341	10,895	328	15,852	269	14,788	77	14,046
	BIO-SCIENCES, TOTAL	70	10,125	60	15,003	55	13,104	13	16,566
	BASIC MED. SCIENCES	28	10,983	40	15,614	33	14,203	10	17,060
	PHYSIOLOGY	6	11,661	5	15,488	7	20,087	1	60,258
	PHARMACOLOGY	5	13,804	7	16,327	3	26,711		
	BIOCHEMISTRY	6	10,193	14	15,035	11	12,276	7	13,712
	MICROBIOLOGY	11	9,979	14	15,899	12	11,330	2	19,499
	OTHER BIO-SCIENCES	42	9,592	20	13,853	22	11,615	3	15,021
	BOTANY	17	10,585	8	13,182	9	10,937	3	15,021
	GENETICS			2	19,725				
	ZOOLOGY	25	8,970	10	13,427	13	12,108		
	MISC. BIOLOGY								
	MEDICAL SCIENCES	1	18,198	10	17,337	10	26,547		
	AGRIC. SCIENCES	11	11,506	22	15,185	15	11,462	2	19,725
	PSYCHOLOGY	9	11,721	17	17,519	40	14,565	5	12,135
	SOCIAL SCIENCES	95	11,202	46	14,478	47	16,322	15	14,411
	SOCIOLOGY	22	10,605	8	14,877	9	14,054		
	ECONOMICS	20	13,474	13	16,478	5	23,989	3	15,136
	POLITICAL SCIENCE	17	10,817	13	15,163	23	16,041	10	14,420
	HIST., GEOGRAPHY	36	10,627	12	11,749	10	16,033	2	13,335
	M-P-E FIELDS	61	11,352	110	18,569	61	16,469	26	16,540
	MATHEMATICS	21	12,439	10	19,320	6	17,713	4	11,955
	PHYSICAL SCIENCES	33	10,685	69	17,886	33	15,371	17	18,521
	PHYSICS	12	9,368	22	20,849	12	17,013	2	20,655
	CHEMISTRY	8	9,579	27	17,526	4	18,198	8	17,938
	GEOLOGY	13	12,303	20	15,524	17	13,747	7	18,621
	ENGINEERING	7	11,482	31	19,939	22	17,915	5	14,589
	ALL OTHER FIELDS	94	10,685	63	13,198	41	12,773	16	9,226
	LANG. & LIT.	32	9,893	14	12,650	13	10,887	4	9,333
	ARTS, HUMANITIES	31	10,179	10	13,002	6	11,661	3	4,823
	PROFESSIONS	15	12,667	12	11,286	10	14,521	4	10,000
	EDUCATION	16	11,683	27	14,541	12	14,289	5	12,647

Appendix 17, continued

GEOMETRIC MEAN OF SALARIES ON PRESENT JOB, BY MAJOR FUNCTION PERFORMED, FIELDS, AND COHORTS

COHORT	FIELD	TEACHING RESEARCH 50% EACH		RESEARCH ADMIN. 50% EACH		ADMIN. TEACHING 50% EACH		RESEARCH 50% OR MORE OTHERS LESS	
		NO.	MEAN	NO.	MEAN	NO.	MEAN	NO.	MEAN
COHORT 1955	TOTAL, ALL FIELDS	60	11,290	26	15,354	13	11,460	618	11,712
	BIO-SCIENCES, TOTAL	25	10,347	11	13,071	3	9,924	314	11,018
	BASIC MED. SCIENCES	19	10,534	9	13,250	2	9,333	212	11,274
	PHYSIOLOGY	8	10,412			1	9,773	60	12,128
	PHARMACOLOGY	1	7,586	1	15,849			15	13,282
	BIOCHEMISTRY	4	10,839	4	15,136			81	10,856
	MICROBIOLOGY	6	11,092	4	11,092	1	8,912	56	10,541
	OTHER BIO-SCIENCES	6	9,773	2	12,303	1	11,220	102	10,510
	BOTANY	2	9,333			1	11,220	38	10,191
	GENETICS	1	10,000					14	9,984
	ZOOLOGY	2	9,441	1	11,220			28	9,886
	MISC. BIOLOGY	1	11,220	1	13,489			22	12,380
	MEDICAL SCIENCES	2	11,885	1	15,136			13	11,543
	AGRIC. SCIENCES	4	10,592	1	18,198			67	11,140
	PSYCHOLOGY	1	14,125	2	13,645			16	11,902
	SOCIAL SCIENCES	14	11,220	1	18,621	6	10,881	52	12,045
	SOCIOLOGY	5	11,324			2	10,233	18	11,914
	ECONOMICS	3	11,569	1	18,621	1	10,965	13	14,174
	POLITICAL SCIENCE	1	15,136			1	10,965	16	12,234
	HIST., GEOGRAPHY	5	10,280			2	11,482	5	7,798
	M-P-E FIELDS	11	13,630	10	18,114	2	14,791	136	13,879
	MATHEMATICS	4	13,413	1	19,055			25	15,233
	PHYSICAL SCIENCES	5	13,614	6	17,783	1	13,804	88	12,964
	PHYSICS	1	14,125	3	18,059	1	13,804	27	15,701
	CHEMISTRY	3	14,018	2	14,623			34	11,450
	GEOLOGY	1	12,023	1	25,119			27	12,527
	ENGINEERING	2	14,125	3	18,481	1	15,849	23	16,266
	ALL OTHER FIELDS	3	11,749			2	12,882	20	10,471
	LANG. & LIT.	1	10,965			1	12,303	3	10,715
	ARTS, HUMANITIES	1	8,511			1	13,489	7	10,302
	PROFESSIONS	1	17,378					8	10,116
	EDUCATION							2	12,303
COHORT 1960	TOTAL, ALL FIELDS	102	9,205	26	12,196	10	11,454	796	9,508
	BIO-SCIENCES, TOTAL	34	8,917	12	12,092			449	8,962
	BASIC MED. SCIENCES	21	8,933	9	12,053			291	9,424
	PHYSIOLOGY	8	9,333	2	9,886			60	9,599
	PHARMACOLOGY							19	11,179
	BIOCHEMISTRY	7	9,333	6	13,542			135	9,146
	MICROBIOLOGY	6	8,004	1	8,912			77	9,387
	OTHER BIO-SCIENCES	13	8,896	3	12,210			158	8,172
	BOTANY	2	7,943					44	7,511
	GENETICS			1	9,550			35	8,054
	ZOOLOGY	8	8,837	1	12,023			41	8,101
	MISC. BIOLOGY	3	9,773	1	15,849			38	9,216
	MEDICAL SCIENCES			1	12,023			15	10,947
	AGRIC. SCIENCES	4	8,811	3	11,931			43	8,799
	PSYCHOLOGY	3	8,576					18	10,025
	SOCIAL SCIENCES	20	9,431	3	10,311	5	10,139	63	10,139
	SOCIOLOGY	7	10,067					22	10,839
	ECONOMICS	5	9,594	2	10,471	1	12,882	21	11,049
	POLITICAL SCIENCE	6	9,085	1	10,000	1	6,457	10	10,715
	HIST., GEOGRAPHY	2	8,035			3	10,881	10	6,919
	M-P-E FIELDS	31	9,298	6	13,542	2	12,303	184	11,218
	MATHEMATICS	10	8,953			2	12,303	36	11,877
	PHYSICAL SCIENCES	15	9,121	6	13,542			120	10,934
	PHYSICS	11	9,027	3	15,849			39	11,805
	CHEMISTRY	2	10,000	2	10,965			49	11,503
	GEOLOGY	2	8,811	1	12,882			32	9,220
	ENGINEERING	6	10,392					28	11,634
	ALL OTHER FIELDS	10	9,840	1	12,882	3	13,386	24	6,912
	LANG. & LIT	2	9,441					7	7,562
	ARTS, HUMANITIES	4	7,899			1	10,000	8	4,181
	PROFESSIONS	3	12,685			1	9,550	8	10,087
	EDUCATION	1	12,023	1	12,882	1	25,119	1	10,000

Appendix 17, continued

GEOMETRIC MEAN OF SALARIES ON PRESENT JOB, BY MAJOR FUNCTION PERFORMED, FIELDS, AND COHORTS

COHORT	FIELD	TEACHING 50% OR MORE OTHERS LESS		ADMIN. 50% OR MORE OTHERS LESS		ALL OTHERS		UNKNOWN	
		NO.	MEAN	NO.	MEAN	NO.	MEAN	NO.	MEAN
COHORT 1955	TOTAL, ALL FIELDS	445	9,993	221	14,427	270	11,883	72	12,371
	BIO-SCIENCES, TOTAL	103	9,493	49	13,986	82	10,139	17	9,811
	BASIC MED. SCIENCES	47	9,389	33	14,282	48	10,076	12	8,947
	PHYSIOLOGY	14	10,266	7	13,356	19	8,645	2	11,615
	PHARMACOLOGY	3	13,182	4	14,877	2	11,350		
	BIOCHEMISTRY	12	8,332	9	15,606	11	11,152	7	8,128
	MICROBIOLOGY	18	8,958	13	13,756	16	11,108	3	9,404
	OTHER BIO-SCIENCES	56	9,586	16	13,393	34	10,233	5	2,247
	BOTANY	25	9,711	4	12,303	13	9,721	1	12,882
	GENETICS			1	14,455	2	6,457		
	ZOOLOGY	28	9,324	10	13,335	17	10,500	2	9,550
	MISC. BIOLOGY	3	11,135	1	18,198	2	18,198	2	15,312
	MEDICAL SCIENCES	11	10,738	13	16,359	8	19,558	5	16,218
	AGRIC. SCIENCES	13	9,773	11	14,273	15	11,858	2	20,893
	PSYCHOLOGY	9	9,404	8	17,989	30	12,199	3	8,845
	SOCIAL SCIENCES	122	10,486	40	14,103	47	12,309	11	13,918
	SOCIOLOGY	30	10,345	8	12,375	9	12,053	4	10,000
	ECONOMICS	30	12,417	9	15,969	16	13,070	5	18,451
	POLITICAL SCIENCE	27	9,526	15	14,279	10	12,706	2	13,335
	HIST., GEOGRAPHY	35	9,884	8	13,645	12	11,240		
	M-P-E FIELDS	81	10,804	54	14,849	47	15,174	25	13,601
	MATHEMATICS	31	10,715	8	16,455	17	14,514	4	11,350
	PHYSICAL SCIENCES	35	10,287	34	14,174	16	13,489	16	12,882
	PHYSICS	8	11,955	10	16,218	4	16,313	6	12,351
	CHEMISTRY	8	9,016	15	14,478	4	13,182	7	14,266
	GEOLOGY	19	10,207	9	11,778	8	12,410	3	11,049
	ENGINEERING	15	12,323	12	15,820	14	18,320	5	18,707
	ALL OTHER FIELDS	106	9,363	46	13,698	41	10,541	9	10,910
	LANG. & LIT.	33	8,801	8	12,023	11	9,431	2	8,317
	ARTS, HUMANITIES	30	8,837	7	13,052	8	10,998	1	3,020
	PROFESSIONS	15	10,202	9	16,218	10	10,815	1	16,982
	EDUCATION	28	10,233	22	13,617	12	11,112	5	14,388
COHORT 1965	TOTAL, ALL FIELDS	593	8,546	126	12,380	280	10,269	73	9,326
	BIO-SCIENCES, TOTAL	151	8,149	26	11,227	70	10,404	18	6,812
	BASIC MED. SCIENCES	63	8,122	16	11,599	44	11,069	11	7,570
	PHYSIOLOGY	26	8,835	7	11,146	17	10,671	2	8,912
	PHARMACOLOGY	4	11,157	1	11,482	2	11,615	2	5,559
	BIOCHEMISTRY	16	6,999	5	11,749	15	11,768	5	7,245
	MICROBIOLOGY	17	7,628	3	12,494	10	10,642	2	9,773
	OTHER BIO-SCIENCES	88	8,170	10	10,666	26	9,374	7	5,773
	BOTANY	25	7,907			3	7,644	1	1,820
	GENETICS	4	8,561	3	9,623	4	9,606	3	5,980
	ZOOLOGY	34	8,268	4	10,058	9	6,522	3	8,190
	MISC. BIOLOGY	25	8,241	3	12,784	10	13,676		
	MEDICAL SCIENCES	8	10,808	6	16,982	12	11,955	3	14,791
	AGRIC. SCIENCES	13	9,103	4	11,885	12	9,567	5	9,036
	PSYCHOLOGY	14	10,282	2	14,289	36	11,824	4	17,179
	SOCIAL SCIENCES	154	8,341	22	11,872	53	10,025	14	10,983
	SOCIOLOGY	37	7,826	8	10,292	14	8,682	4	11,028
	ECONOMICS	24	9,505	1	12,589	15	14,039	4	11,157
	POLITICAL SCIENCE	31	9,038	9	13,523	14	8,331	4	12,589
	HIST., GEOGRAPHY	62	7,911	4	11,615	10	9,594	2	8,035
	M-P-E FIELDS	82	9,016	19	14,562	31	11,820	13	11,220
	MATHEMATICS	34	9,487	4	15,312	8	12,846	1	15,136
	PHYSICAL SCIENCES	39	8,658	9	15,098	15	10,649	9	10,025
	PHYSICS	9	10,634	1	15,488	1	14,455		
	CHEMISTRY	10	8,811	3	14,791	3	9,404	5	10,328
	GEOLOGY	20	7,826	5	15,206	11	10,715	4	9,661
	ENGINEERING	9	8,868	6	13,335	8	13,221	3	14,232
	ALL OTHER FIELDS	171	8,610	47	11,952	66	8,811	16	7,876
	LANG. & LIT	63	7,900	4	10,116	13	9,532	2	12,303
	ARTS, HUMANITIES	38	8,253	2	10,000	16	8,772	1	3,981
	PROFESSIONS	41	9,588	7	14,312	21	8,576	11	7,321
	EDUCATION	29	9,431	34	11,869	16	8,598	2	10,592