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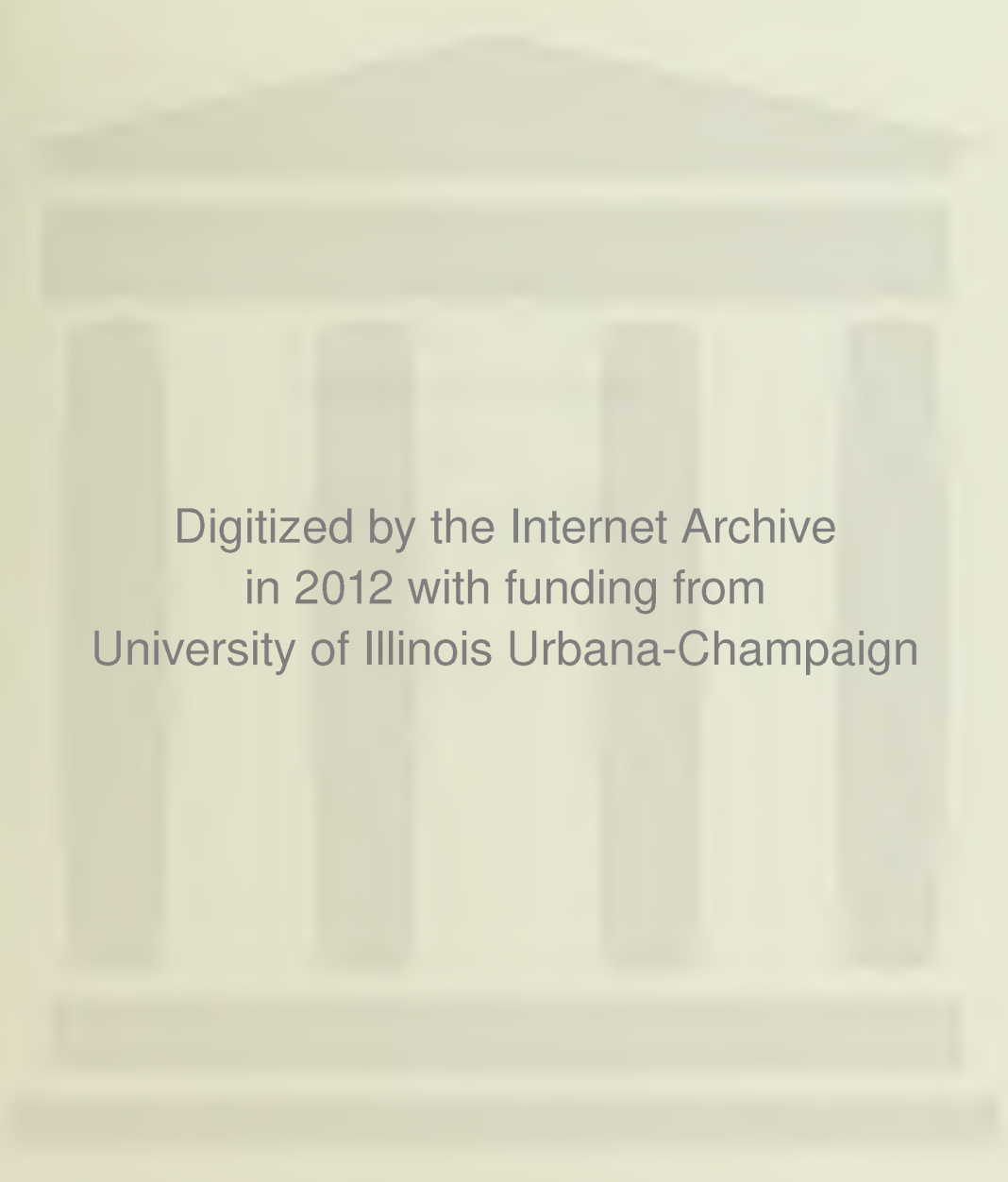
Twentieth Annual Report

of the

University of Illinois
Health Service

1935-36





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THE UNIVERSITY OF ILLINOIS
OCT 29 1936
UNIVERSITY OF ILLINOIS

TWENTIETH ANNUAL REPORT

of the

UNIVERSITY OF ILLINOIS
HEALTH SERVICE

1935-1936

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FOREWORD

The Twentieth Annual Report of the Health Service is the conclusion of two decades of endeavor to apply the principles of preventive medicine and preventive sanitation to the promotion of health and the prevention of disease among the students at the University of Illinois. It also marks the completion of a study of the causes of death of former Illini who have been at the University during the last nineteen years and of a survey of health instruction of high school graduates who have matriculated at the University in the last two years.

The report is longer than usual because it records the results of certain N. Y. A. projects dealing with the health of students. It would seem that such data should be permanently available. To make these findings more understandable to laymen who may not always be familiar with the implications of morbidity and mortality statistics numerous comments have been added.

This summary of the activity of the Health Service after twenty years of development provides material which is useful in evaluating its work. The report gives in some detail the functions which have been assigned to the Health Service as a result of the phenomenal growth of the University, and it sets forth the aims and purpose of such a department.

A study of it will show that although health is the very foundation of happiness and prosperity there is a great gap between what is being done in the field of public health and what might be accomplished were hygiene and sanitation more widely used to promote the general welfare. Its data compels the conviction that education without an adequate knowledge of the fundamentals of health is often unproductive, costly, and even futile.

TABLE OF CONTENTS

	Page
Visits	1
Medical Examinations	
I. Students	4
II. High School Pupils	5
III. Civil Service Employees	5
IV. Chauffeurs' Examinations	6
V. Supervision of Foodhandlers	6
VI. Educational Internes	8
VII. Pre-School Children	8
VIII. Athletic Examinations	9
IX. Student Car Permits	9
"Follow-Up"	
I. University Students	10
II. High School Pupils	11
III. Tuberculosis	11
IV. Heart Disease	13
V. Albuminurics	16
VI. Glycosurics	17
VII. Maladjustment	17
Communicable Disease	
I. Prevalence	19
II. Modified Quarantine	20
III. Certificates of Immunity to Scarlet Fever	21
IV. Hospitalization	21
V. Contacts	22
VI. Venereal Disease	22
VII. Faculty and Civil Service Employees	23
Cooperation With the Departments of Military and Physical Education	
I. Permanent Classification	23
II. Temporary Excuses	24
III. Advanced Corps Students	24
Hospitalization	
I. The Student Body	25
II. The University Hospital	25
III. Local Hospitals	26
IV. Needs of the Student Hospital	26
V. Voluntary Hospital Association	28
VI. Civil Service Employees	28
The General Practitioner and The Health Service	29
Suicide	
I. Registered Students	30
II. Students in Nineteen Year Survey	31
III. Methods	32
IV. Causes	34
V. Prevention	34

TABLE OF CONTENTS

	Page
Homicide	
I. Justifiable or Excusable	36
II. Felonious	36
III. Prevention	37
Accidental Deaths	
I. Automobile Accidents	38
II. Drowning	41
III. Airplane Accidents	42
IV. Other Accidents	42
Appendicitis	
I. The Mortality Rate	42
II. Comments	43
Childbirth	44
Causes of Premature Death Among Illini	45
Student Deaths	49
Tonsils	49
Injuries of Civil Service Employees	50
Instruction in Hygiene	
I. Elementary Hygiene	50
II. Advanced Hygiene	51
III. Hygiene x3	51
IV. Proficiency Examinations	51
Health Education	
I. In High Schools	53
II. Qualifications of Teachers	57
III. Objectives in Hygiene	57
IV. The Need for Adequate Instruction of Hygiene in Secondary Schools	58
Menstruation in Freshmen Women	60
Nasal Eosinophilia	62
Laboratory Service	63
First Aid	64
Sanitation	
I. Swimming Pools	65
II. The University Water Supply	65
III. Lunch Rooms and Refectories	66
IV. Lodging House Inspection	68
V. Local Cooperation	72
Oral Examinations and Interviews of Nurses	73
Requests for Information	73
Health Service Objectives	73
The Health Service as a Barometer	75

APPENDIX A

<u>Tables</u>	<u>Page</u>
I. Types of Medical Attention to Students and Employees	79
II. Monthly Distribution of Visits	79
III. Classification of Injuries to Civil Service Employees for Five Years	79
IV. Laboratory Examinations	80
V. Cases Cared for at McKinley Hospital (by months)	81
VI. Average Hospital Stay	81
VII. Cases Cared for at McKinley Hospital (by disease).	82
VIII. Elementary and Advanced Hygiene	82
IX. Family History of Inheritable Diseases	83
X. Injuries	83
XI. Operations	83
XII. Use of Tea, Coffee, and Tobacco	84
XIII. Sleeping Habits	84
XIV. Students Giving Histories of Typhoid Fever	84
XV. Relative Occurrence of Certain Diseases in Histories of the Class of 1939	84
XVI. General Development and Build	86
XVII. Color of Eyes	86
XVIII. Color of Hair	86
XIX. Teeth	87
XX. Abnormalities of the Heart	87
XXI. Thyroid Enlargement	87
XXII. Chest and Lungs	88
XXIII. Incidence of Enlarged Lymph Glands	88
XXIV. Condition of Abdominal Walls	88
XXV. Hernia in Men	88
XXVI. Genito-Urinary Organs	89
XXVII. Cryptorchidism	89
XXVIII. Urinalysis	89
XXIX. Glycosuria and Albuminuria Over a Period of Years	90
XXX. Foot Abnormalities	90
XXXI. Foot Abnormalities Over a Period of Years	90
XXXII. Spine Abnormalities	91
XXXIII. Nose Abnormalities	91
XXXIV. Throat Abnormalities	92
XXXV. Percentage of Students with Tonsils Removed Over a Pe- riod of Years	92
XXXVI. Ears	92
XXXVII. Eyes	93

APPENDIX B

I. Summary of Medical Histories	96
II. Summary of Physical Examinations	98
III. Classified Summary of Physical Examination Results	102

TABLE OF CONTENTS

viii

APPENDIX C

	<u>Page</u>
Civil Service Examinations	114

APPENDIX D

University High School Examinations	122
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APPENDIX E

Cases Encountered During the Year	131
Injuries, Wounds, Sprains	137
Recapitulation	142

CHARTS

<u>Number</u>		<u>Opposite Page</u>
1	Total Visits to Health Service Yearly	1
2	Number of Persons Per 1,000 Examined Who Did Not Matriculate	4
3	Tuberculosis at Illinois	11
4	Tuberculosis is Expensive	12
5	Relative Occurrence of Acute Rheumatic Fever in Male Students with Both Normal and Diseased Hearts	15
6	Incidence of Scarlet Fever, 1924-1936	19
7	Average Stay of Patients at the University Hospital	25
8	Ratio of Student Admissions to University Hospital to Total Registration	25
9	Distribution of Hospital Cases and Hospital Days	28
10	Injuries Per 1,000 Students Examined	37
11	Lost Productivity from Premature Death	45
12	Average Age at Death of Former Students from Certain Causes	47
13	Number of Students Per 1,000 Examined on Entrance Whose Tonsils Had Been Removed	49

TABLES

<u>Number</u>		<u>Page</u>
I	Cnauffeurs' Examinations	6
II	Men Rejected for Varsity Athletics	9
III	Ten Year Survey of Male Students with Organic Heart Conditions	14
IV	Ten Year Survey as to Relationship between Certain Diseases and Organic Heart Conditions among Male Students	15

TABLE OF CONTENTS

ix

<u>Number</u>	TABLES (cont'd)	<u>Page</u>
V	Communicable Diseases Cases in the Student Body . . .	19
VI	Communicable Disease Cases Cared for at McKinley Hos- pital	21
VII	Rate per 100,000 for Suicide in the Age Group 15 to 24	32
VIII	Methods of Suicide Among College Men and Woman . . .	33
IX	Summary of Student Deaths at University of Illinois, 1924-1936	39
X	Complications of Childbirth	44
XI	Nineteen Year Survey of Illini Deaths	47
XII	Average Period in Years from College to Death for 841 Illini	48
XIII	Distribution by Colleges of Those Passing the Pro- ficiency Examinations in Hygiene	52
XIV	Geographical Distribution of Those Passing the Pro- ficiency Examinations in Hygiene	52
XV	Students Passing Proficiency Examinations in Hygiene the Last Four Years	53
XVI	Sciences Taken by 4,540 High School Graduates	54
XVII	Full or Part-Time Instruction in Sciences in High School	54
XVIII	Sharing of Instruction in Other Subjects by High School Teachers of Science	56
XIX	Menstruation	60
XX	Nervous Symptoms During Menstrual Cycle	61
XXI	Laboratory Tests	63
XXII	Lodging Houses Inspected	68
XXIII	Sanitary Conditions of Lodging Houses	70
XXIV	Fire Hazards	72

October 20, 1936

To the President of the University

Dear Sir:

I have the pleasure to submit herewith the Twentieth Annual Report of the activities of the Health Service for the academic year, 1935-1936.

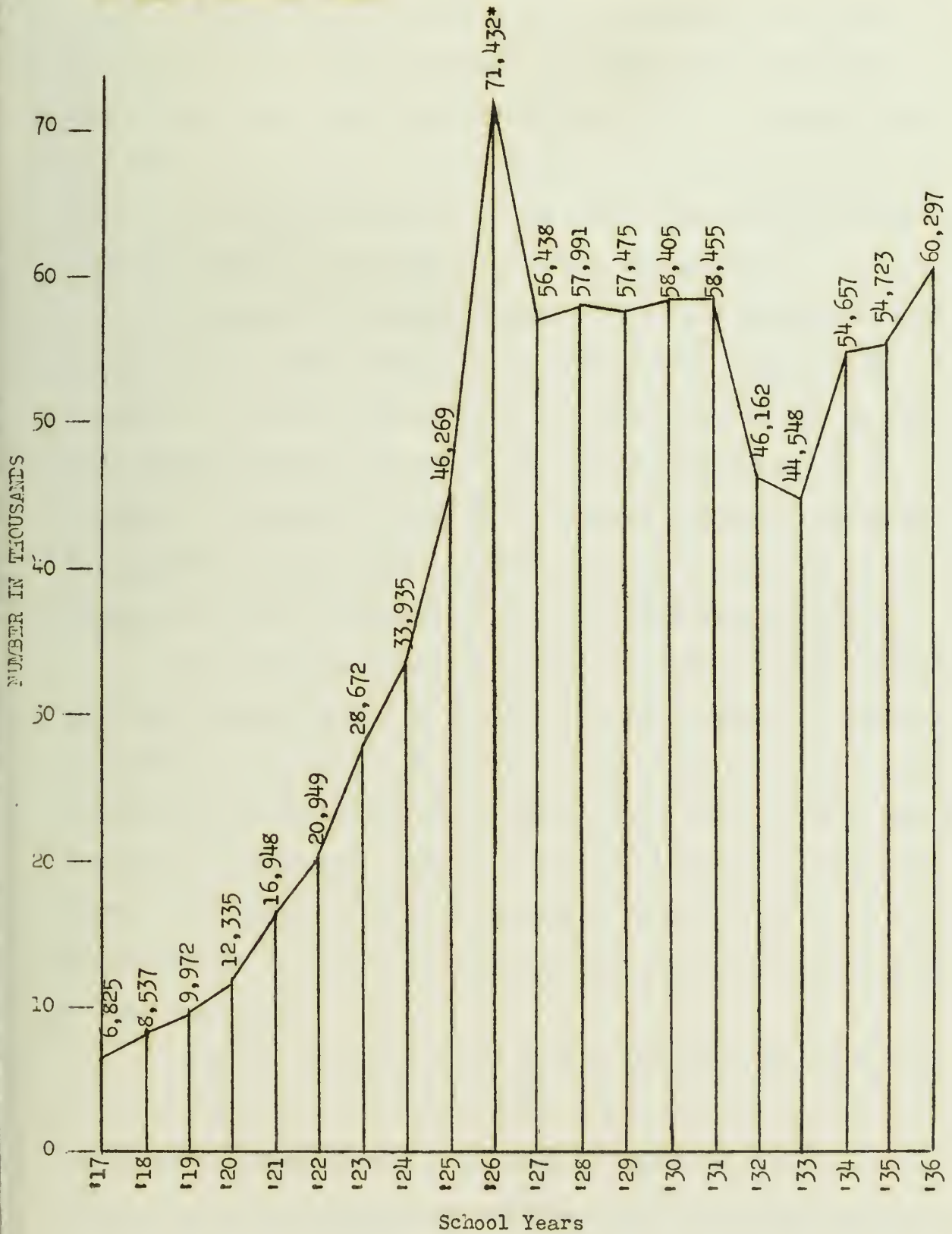
VISITS

During the year the students made 55,937 visits to the Health Service Station and Civil Service employees 1,403. In addition there were 2,957 miscellaneous calls on University or other business, making a grand total of 60,297, the largest number of visits since the Health Service was established with the exception of the year 1925-1926 when a smallpox epidemic occurred in the University district. This includes 4,662 calls as a result of the required physical examination upon entrance and 4,649 for reexamination.

The number of visits per student registered was 5.27. The men of the Class of 1939 called 23,336 times, an average of 7.08 per man; the women, 8,050 or 5.90 visits per woman. In contrast the upperclassmen called on an average of 3.32 times for the men and 4.06 times for the women. The freshman visits per capita are higher than those in the sophomore, junior, and senior classes because of the required physical examination, reexaminations, conferences in hygiene, and a greater predisposition of the younger group to illness. Freshmen as a rule are not as able to care for their health as upperclassmen.

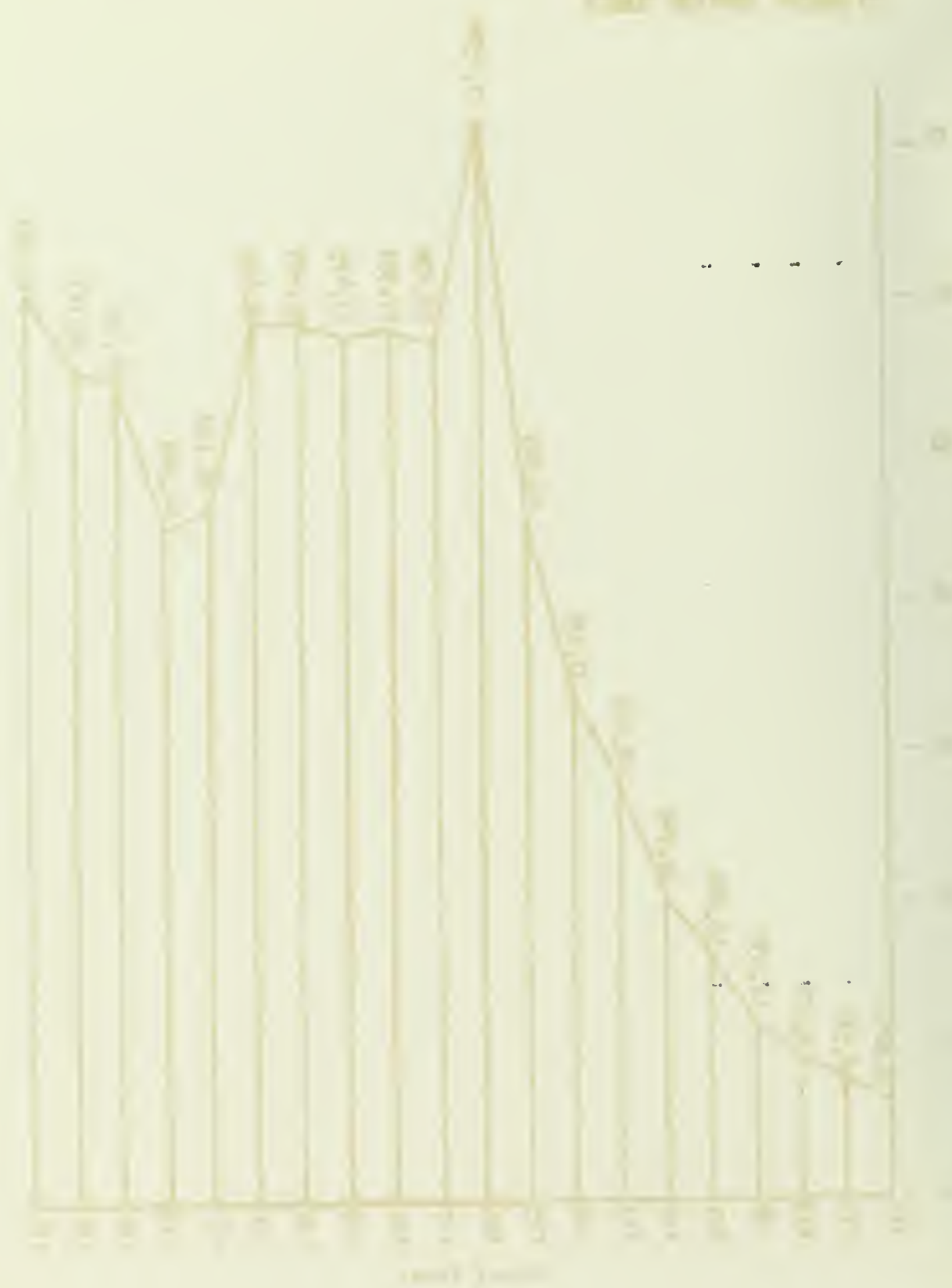
Visits to the Health Service Station increase with each additional student registered, with each new employee engaged, and with the ex-

GRAPH SHOWING TOTAL VISITS
TO HEALTH SERVICE YEARLY



*Increase mainly due to smallpox epidemic.

UNITED STATES DEPARTMENT OF AGRICULTURE
 BUREAU OF PLANT INDUSTRY



PERCENTAGE OF TOTAL AREA FOR VARIOUS PLANT SPECIES

tension of University work involving medical supervision. This year, for example, it was thought desirable to reexamine those driving University cars. As a result there were 264 more visits to the Health Service from this item alone. Such increases are inevitable unless morbidity rates decrease, protection to the health of the University population is reduced, or the institution ceases development.

The only way to control communicable disease in the University population is to detect illness in its incipiency by making an early diagnosis. To discover disease early, the student must be seen as soon as he develops symptoms and must be observed as often and as long as necessary to determine the cause of his complaint. Such care protects the community, provides prompt treatment, reduces the number of complications, and causes the student to lose the minimum time from class.

The numerous ailments of students are usually readily recognized and can be quickly disposed of by advice, the use of household remedies, or reference to a local doctor or specialist. By giving the students unrestricted consultation the University largely avoids their trying to care for themselves at their rooms, reduces the likelihood of the sorethroats of scarlet fever being prescribed for by drug store clerks, and prevents their falling victims to quackery or spreading communicable disease by attempting to treat each other.

Some of the medical advice given at the Health Service Station is for avoidable illnesses and accidents, and to this extent visits to it may be said to be unnecessary or possibly an imposition upon it. An employee fails to wear goggles when grinding steel with an emery wheel and

gets a particle driven into his cornea; some students and employees neglect immunization and become ill with a preventable disease; students follow certain collegiate styles and experience undue exposure which results in sickness; or others take unwarranted risks and suffer accidents.

In giving medical advice, the Health Service Staff can not - it should not - make a distinction between those who persistently fail to use good judgment in their health habits and the unavoidably ill. Medicine is for the careless as well as the careful; both the wise and the foolish would seem to have the same inalienable right to an equal opportunity for recovery when ill or injured. A number of requests are made for medical advice which ultimately it would make little difference physically if it were not given. However, unnecessary mental suffering would result were it withheld. If a student is unable to study because he thinks he has heart trouble when the condition is only gas in his colon, he is physically all right; but he is, nevertheless, in immediate need of advice and is handicapped for studying. For the above reasons, it is exceedingly difficult to reduce the number of consultations at the Health Service Station without impairment of the best interests of the students or of the University.

The student who thinks he is sick when he is not or who is ill because he persistently fails to use good judgment in his health habits should, it seems, have the same opportunity for consultation as the one sick because of no fault of his own. If an effort to reduce the number of visits to the Health Service Station were made by endeavoring to draw a line between the two groups, the impossible would be attempted which

would involve endless complications. No educational institution in this country, as far as is known, attempts to make any such distinction.

Calls vary a great deal in the demand they make upon the time of the medical staff. The factors which determine the length of a consultation are the consulter, his condition, and the doctor. A student with a slightly mashed finger may be given first aid and disposed of in a few minutes. One who is suspected of tuberculosis or has a psychoneurosis may take an hour and in addition will have to be observed several times subsequently. How long a given conference will take can not be determined either by the doctor himself or by outsiders unless the exact condition of the student, the advice he requires, his reactions, and the questions he is going to ask concerning his condition are known in advance. Obviously, no one can have such foreknowledge. The best the medical staff of the Health Service can do is to deal with each case as its circumstances require.

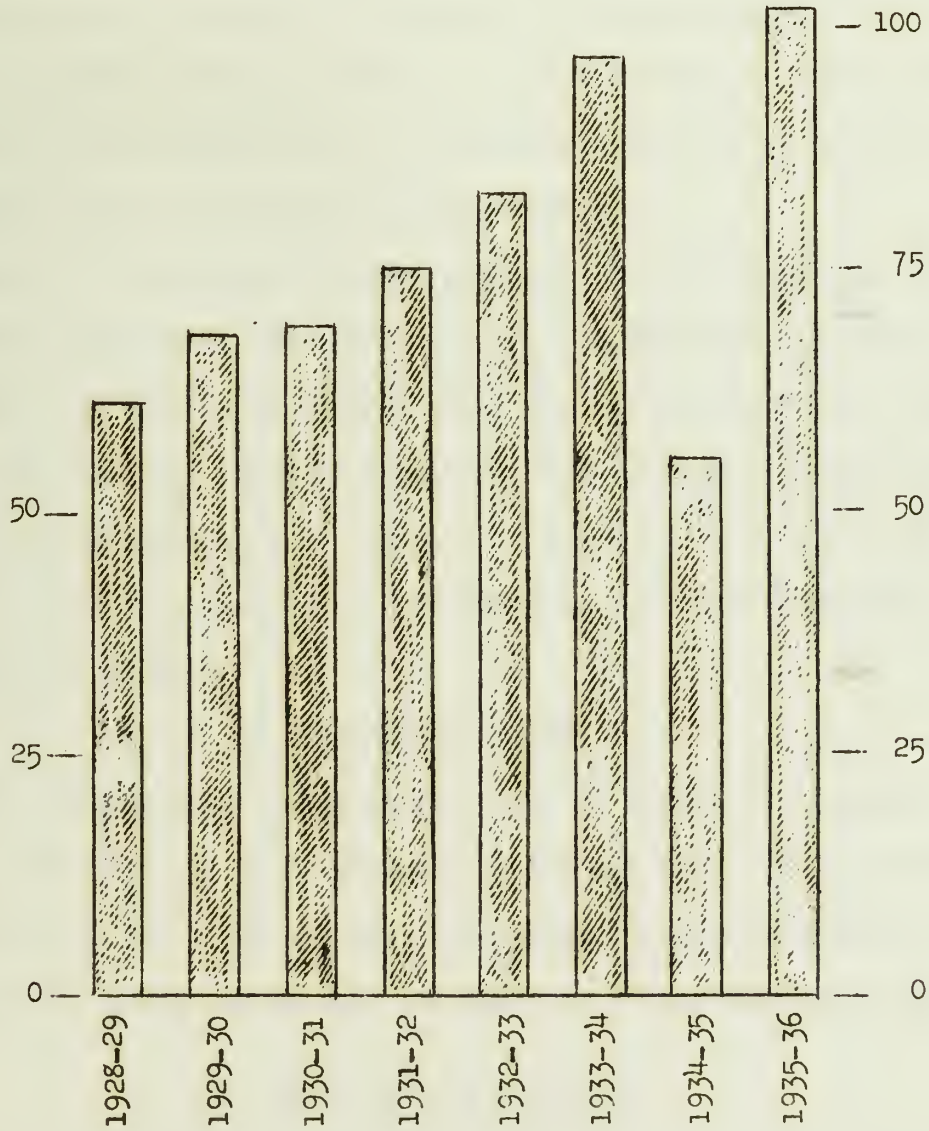
MEDICAL EXAMINATIONS

I. Students

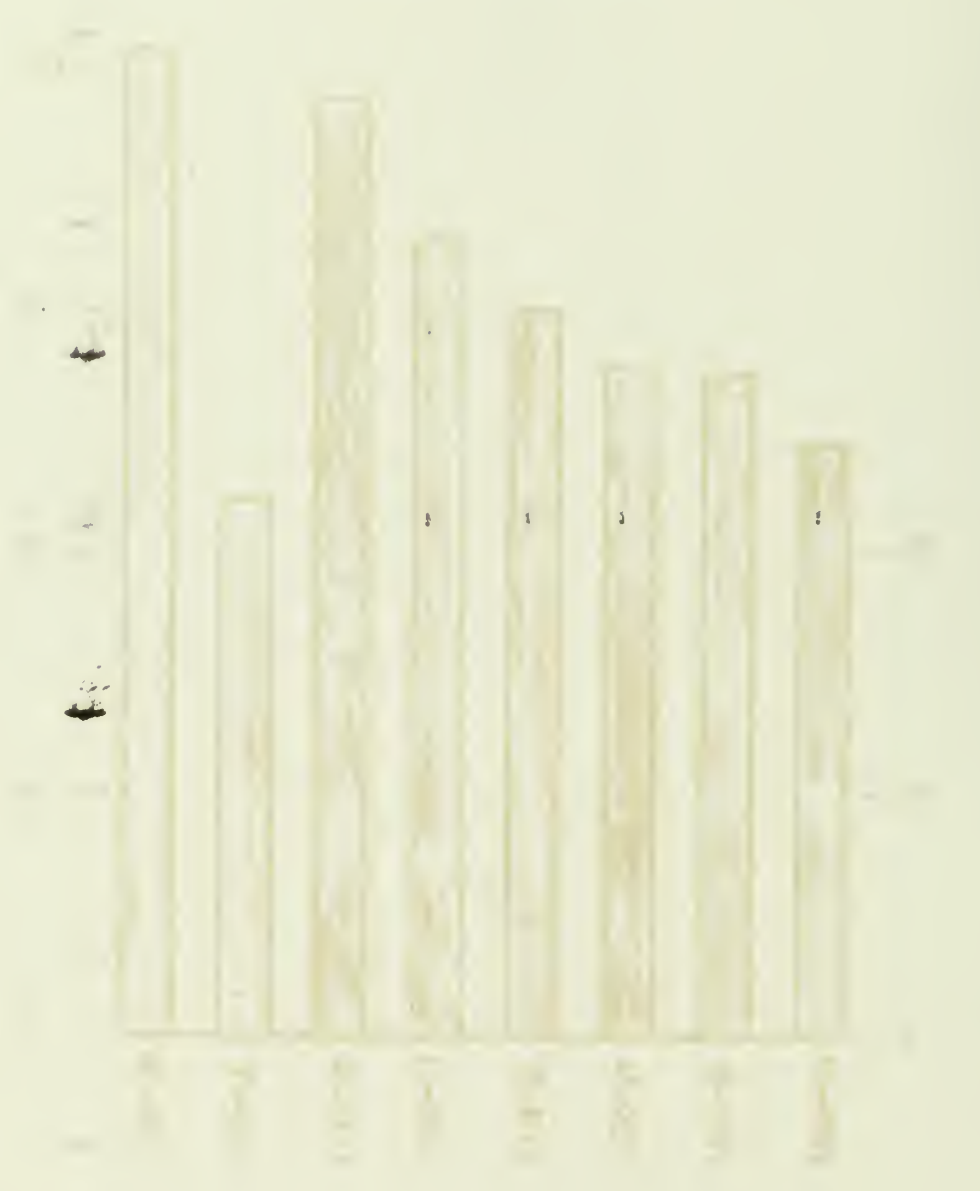
A total of 4,662 students was given complete physical examinations during the year which was an increase of 341 or 7.89 per cent over last year. Of these, 3,297 were men and 1,365 were women, - an increase of 9.61 per cent for the former and 3.96 per cent for the latter.

Examinations were given to 474 prospective students who did not matriculate. About one out of 9.8 of the students examined did not register and this caused the University an expense of approximately \$251.75. As the examination of 474 students involves considerable work as well as

NUMBER OF PERSONS, PER 1,000 EXAMINED,
WHO DID NOT MATRICULATE



THE EFFECT OF ...



...

cost, careful consideration has been given to this expenditure of effort and money but there seems to be no way to avoid examining high school students who expect to become freshmen but for some reason, do not. It is cheaper and more convenient to give an examination to each prospective student who presents himself and requests it during the summer than to defer the examination until registration and then employ outside physicians to take care of the peak load. The present procedure is also less likely to interfere with the machinery of registration.

During the past eight years 2,561 prospective students or an average of 320 a year have been given physical examinations but failed to matriculate. As will be noted from Chart No. 2 their number has ranged from 55.8 to 101.7 per thousand examined. Sometimes as high as ten per cent of those examined fail to register in the University. Such examinations are increasing annually and are becoming a growing demand upon the Health Service budget.

II. High School Pupils.

At the beginning of the school year, 72 high school students were examined. Of these, 41 or 56.94 per cent had had their tonsils removed. Of the total, 11, or 15.28 per cent had suffered severe injuries; 20, or 27.78 per cent were unvaccinated; and four were below average development.

III. Civil Service Employees

During the year, Civil Service employees made 1,403 calls to the Health Service Station of which 205 were for physical examinations at the beginning of employment or an increase for the latter of 46.43 per cent. These were graded as follows: 191 good, 12 fair, one poor, and one dis-

qualified. Of the new employees, 199 of whom were men and six of whom were women, 19 were permitted to work subject to a waiver of claims against the University arising from the defects revealed by their medical examinations.

IV. Chauffeurs' Examinations

A total of 262 faculty members and employees who were to drive University automobiles was examined with special reference to their acuity of vision, color-blindness, hearing, reflex action, and their general health. Of these prospective drivers, 185 were normal and recommendations were made concerning the other 77 as follows:

Table I
Chauffeurs' Examinations

To have eyes examined	27
Not to drive without glasses	27
To have eyes examined and not drive without glasses	12
To operate University cars as little as possible	6
Not to drive with present glasses because improperly fitted	4
To operate a car as little as possible because of sleepiness	1

V. Supervision of Foodhandlers

Prospective employees who would handle food products, students employed as foodhandlers by the University, and those enrolled in courses in dairy manufacturing, lunch room management, and meat courses were examined to determine whether or not they had communicable disease or were disease carriers. Foodhandlers who had not been successfully vaccinated against smallpox within the last five years were re-vaccinated.

A careful history as to communicable disease, particularly typhoid fever and dysentery, was obtained in the case of each prospective

foodhandler. If the employee or student gave a history of having or of having had a disease which might be transmitted through the handling of food or by eating and drinking utensils, appropriate bacteriological examinations were made. Widal tests were taken as a routine, and all foodhandlers were immunized against typhoid fever in accordance with University regulations.

During the year several cases of gastro-intestinal upsets in one of the sororities were reported. In following up these cases a total of eight foodhandlers was examined for dysentery and diarrhea.

In cooperation with Director Bracken of the Student Employment Bureau, students were given foodhandlers' examinations prior to their being certified to jobs as waiters, cooks, or dishwashers. This procedure strengthens very materially the safeguards against possible disease carriers becoming sources of epidemics.

The following table shows the number and distribution of the foodhandlers examined who were in the employ of and taking courses in the University. In this group of employees and students, there was an increase of 30.77 per cent over last year.

Distribution of Foodhandlers

Women's Residence Hall	56
Dairy Department	136
Cafeteria, Woman's Building	75
Davenport House	11
Animal Husbandry	11
Total	<u>289</u>

The presidents and commissaries of all organized houses and the proprietors of all boarding clubs, lunch rooms, and refectories catering to student trade have been urged to give their patrons the same

scientific protection against disease carriers as that provided by the University for patrons of its food distributing agencies. Many houses and some eating places have responded to this advice and to this extent have increased the protection to the health of the University population and of the citizens of the Twin Cities.

The above cooperation was entirely voluntary and offered a considerable protection because not only were their disease carrier states determined, but the kitchen and dining room help were immunized against both typhoid fever and smallpox. This is an advantage to the student who has to support himself, to the community, and to the group which he serves. These tests should be applied to foodhandlers of all lunch rooms catering to student patronage but unfortunately, there are no ordinances enforced in the two towns requiring a health standard for persons handling food.

VI. Educational Internes

At the request of Dean Benner and with the approval of the President the Health Service began the examination of seniors in the University who were selected for their special promise as prospective teachers to serve as internes in education in some of the larger high schools of the state. Four such students were given a complete physical examination and immunized against smallpox and typhoid fever. Each received a certificate of his status of health and of his immunizations.

VII. Pre-School Children

In connection with the study of the development and education of children of pre-school age in two courses of the Summer Session, the

Health Service, with the approval of the President, cooperated with the College of Education by observing thirteen children for a period of a week as a protection against the introduction of communicable disease among them. They were seen each morning by a member of the staff and carefully inspected to detect infection in its incipency and to isolate them if it were found.

VIII. Athletic Examinations

Prior to participation in athletics a total of 2,505 students was examined, of which 1,605 were men and 900 were women. In 214 instances it was necessary to recheck the physical condition of the students before they were finally certified or rejected for athletics. Of those wishing to participate in varsity sports, a total of 14 men was rejected permanently for the causes listed in the following table.

Table II
Men Rejected for Varsity Athletics

	<u>Tachy-</u> <u>cardia</u>	<u>Possible</u> <u>Nephritis</u>	<u>Defective</u> <u>Vision</u>	<u>Hyper-</u> <u>tension</u>	<u>Varicose</u> <u>Veins</u>	<u>Hernia</u>	<u>Total</u>
Baseball	2	1		1			4
Basketball	2	1	1				4
Fencing			2				2
Polo		1					1
Tennis		1					1
Track					1		1
Wrestling						1	1
Total	<u>4</u>	<u>4</u>	<u>3</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>14</u>

One University High School student was also rejected from athletics because of suspected gastric or duodenal ulcer.

IX. Student Car Permits

During the year 25 students requested permits from the committee on student affairs for the use of a motor vehicle because of physical dis-

ability. It was found that 18 of these had physical conditions justifying their use of a car either temporarily or permanently for the purpose of attending classes. Seven were able to attend classes without a car. The reasons for recommendation of the granting of permits, most of which were temporary and for the protection of the student, were as follows: psoriasis, one; sinusitis, one; blistered heels, one; albuminuria, one; paralysis, one; unclassified, one; convalescence from temporary illness, three; on the confirmed reports of other physicians, two; and for injuries, seven, of which there were two to knees, two to ankles, one to ribs, one to the leg, and one to the foot.

"FOLLOW-UP"

I. University Students

Of the 4,662 new students examined 2,255 men and 628 women were recalled for conference and advice concerning their conditions. This total includes 1,818 who were reexamined with special reference to their defects. Whenever students were found to have abnormalities, they were advised to consult their family physicians, dentists, or specialists. It is gratifying to note that many students had had their defects of vision and their teeth treated between the time they were examined and their registration.

In addition to the regular physical examination 2,112 men and 785 women filled out personal hygiene questionnaires which were rather complete inventories of their health habits and mental attitudes. A conference was had with each student concerning any deviation from the normal, and his physical condition and mental health were carefully considered and discussed with him on the basis of his questionnaire and medical record.

II. High School Pupils

All high school students were checked as to their physical ability to take the prescribed course in gymnastics. Three had defects which required special physical training, and one was rejected from athletics because of his physical condition. Those given special consideration in physical training and soon repeatedly had the following defects: hernia, recent illness, and possible gastric or duodenal ulcer.

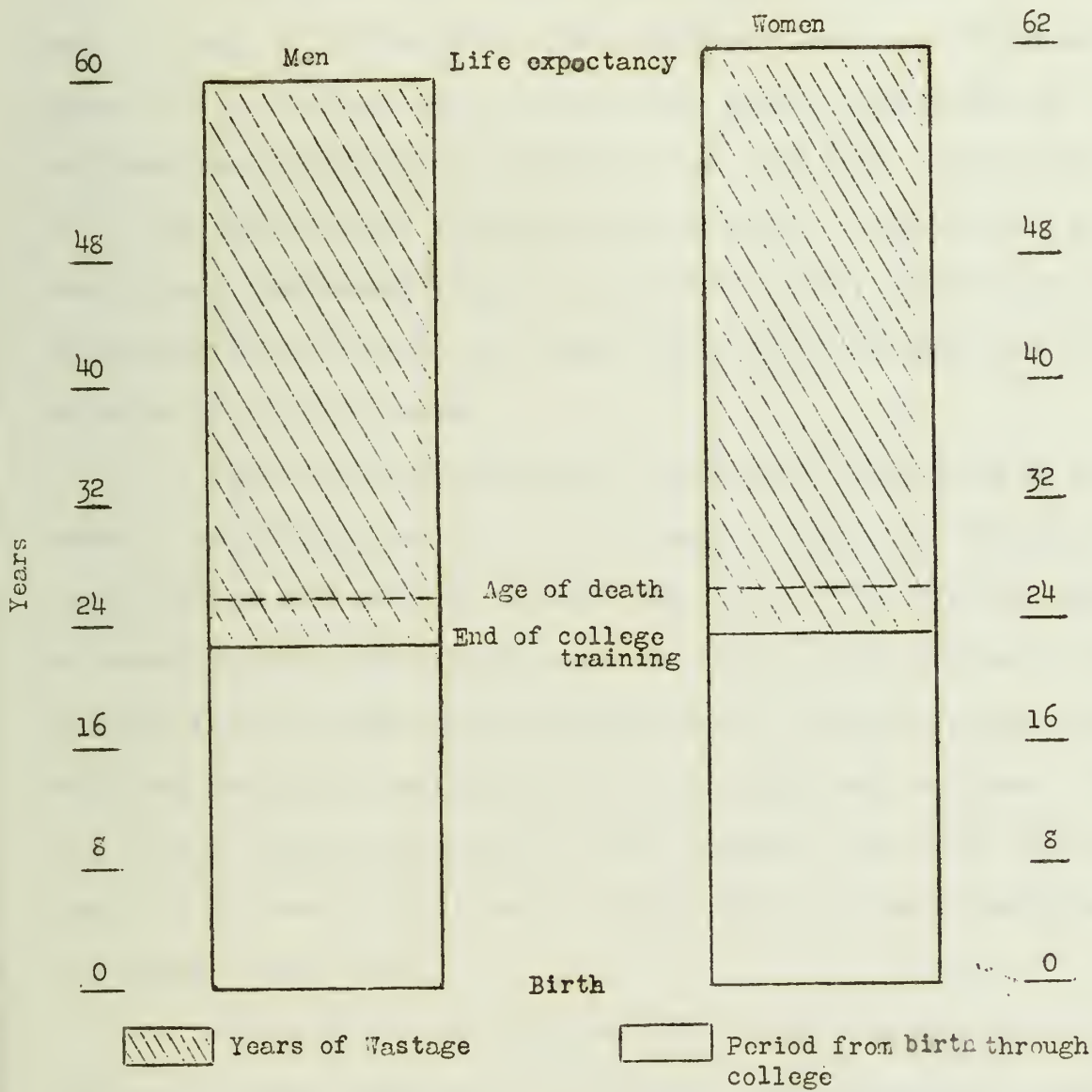
III. Tuberculosis

Notwithstanding the great progress made in controlling the ravages of tuberculosis during the last three decades, it is still the leading cause of death in adolescent and early adult life. It is a serious menace to health, a destroyer of the socially promising, and a killer of many of the potentially most valuable.

During the year five students were found to have tuberculosis in a moderately advanced form, - a state in which the prognosis of their ultimately being of service to the state is largely doubtful. Eleven matriculants had arrested tuberculosis and four, tuberculosis of the bones, one which was active. Those who were found to have the disease in the active form are undergoing treatment in sanatoria or at their homes under the direction of specialists.

A total of 40 students, 29 men and 11 women, have been under close observation as having possible tuberculosis. Under proper nutrition and a hygienic regime of rest, recreation, and work all of them have gone through the school year without showing signs of a progressing tuberculosis. Fortunately, many of them have gained in weight and vigor and will be re-

TUBERCULOSIS AT ILLINOIS



	<u>Men</u>	<u>Women</u>
Average Age of death	25.84 years	26.15 years
Period from College to death	3.09 years	3.09 years
Average Expectancy of life	60.00 years	62.00 years

N.B. The time from college to death is included as wastage because it is only a period of three years and tuberculosis is usually a chronic disease with a long period of invalidism and expense for medical and sanatorium care.

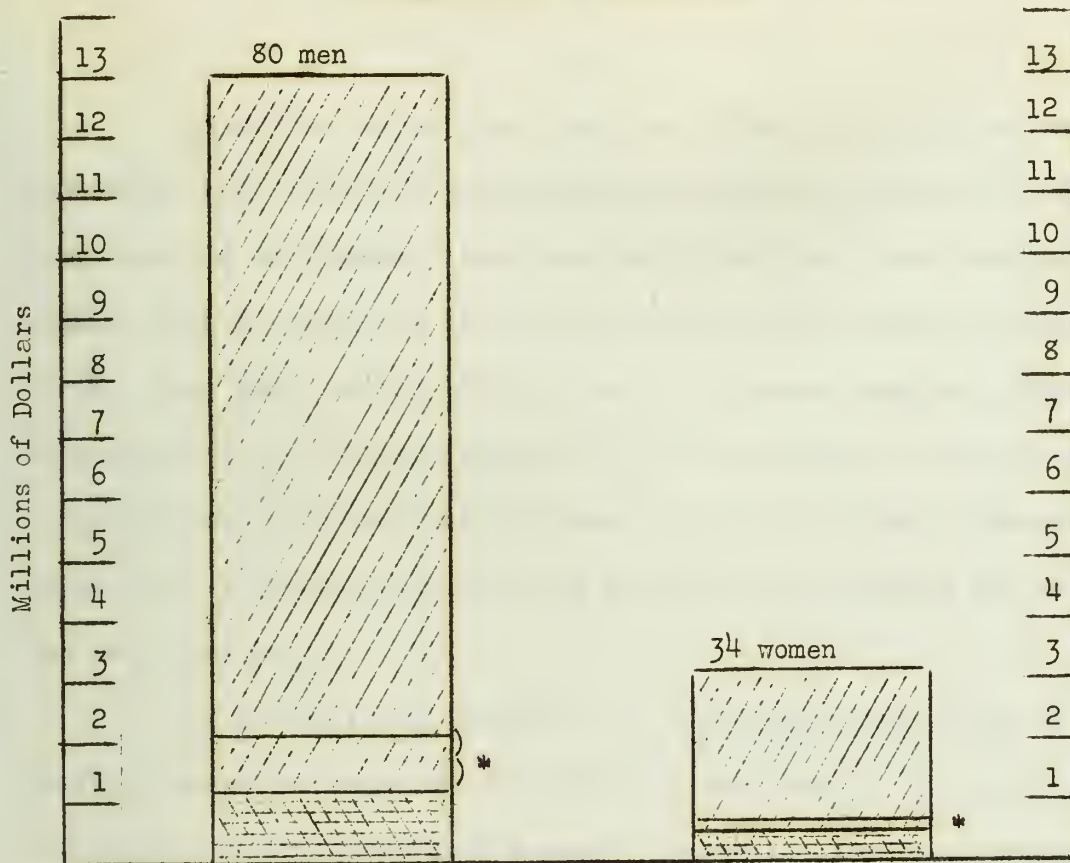
moved from the list of "suspects".

At the time of the medical examination on entrance, 272 students gave a history of tuberculosis in their immediate families. Of the men examined, 479 or 14.53 per cent were below the minimum requirements of the War Department for weight and development for their ages. Of the women, 114 or 8.35 per cent were of fair development only. A considerable portion of these "substandards" are the type which usually shows an increased predisposition to tuberculosis. Many of them have been under careful observation while on the campus.

The threat of tuberculosis at Illinois is intensified by a large number of the students having to work to support themselves. Where individuals work as well as go to college, they often get insufficient sleep and exercise more or less rigid economy in eating. Such practice is a predisposing factor to tuberculosis since it tends to combine fatigue, under-nutrition, and lack of recreation in lowering individual resistance. Happily, most of them are no worse for their experience, but often tuberculosis appears on the scene or waits until shortly after the student has graduated to make him a total loss.

Tuberculosis is an important health problem at Illinois because the disease appears every year in the student body and has been responsible for 114 out of 841 deaths of former students of the University who have matriculated during the last 19 years and for whose cause of death there is dependable information. The average age of those who died of tuberculosis was 25.93 years, and their deaths occurred on the average six years after matriculation, and 3.09 years after leaving college.

TUBERCULOSIS IS EXPENSIVE



- Wastage from premature death
- * Period of doubtful usefulness after leaving college because of the expense and invalidism associated with tuberculosis
- Cost of preparation through college

Cost per individual of rearing and education

1. To parents for rearing to 18 years of age	\$9,800
2. To community for education	1,100
3. For college training	4,100
Total	<u>\$15,000</u>

Average annual income of college graduates: Men - \$4,000; Women - \$2,000

	<u>80 Men</u>	<u>34 Women</u>
Cost of preparation through college	\$1,200,000	\$510,000
Period of doubtful usefulness	960,000	204,000
Loss of income from premature death	<u>10,880,000</u>	<u>2,448,000</u>
Total	<u>13,040,000</u>	<u>3,162,000</u>

References used in Computations: The Money Value of a Man, by Dublin and Lotka; The Relation of Education and Income, A Study by the Alpha Kappa Psi Fraternity for the Year 1926-27; Was College Worth While, by John R. Tunis; The Age Factor As It Relates to Women in Business and the Professions, by the United States Department of Labor (1934).

Experience shows that when five students are discovered with moderately well-developed tuberculosis by physical examination or laboratory tests of the sputum, there are most likely ten times that number present with a very early active form of the disease which is unrecognized. Many such individuals only await influenza, measles, pneumonia, recurring colds, or other lowering of their resistance to be found with a clearly developed tuberculosis, most likely sufficiently advanced to warrant the prognosis that 60 to 75 per cent will probably die within the next five years.

It is difficult, therefore, to overestimate the value of the earliest possible diagnosis of tuberculosis either for its victim or for society. When discovered promptly, the disease is readily amenable to treatment, in most instances without loss of time from school; but the longer the delay in uncovering it and the easier the diagnosis, the greater are the risks to the patient's associates, the more extensive is the involvement of the lungs, the more prolonged the treatment, the worse the prognosis, the higher the mortality rate, and the larger is the financial loss to the state. The eradication of tuberculosis in college students not only requires repeated physical examinations and the use of a well-taken medical history but tuberculin testing, X-ray study, and a "follow-up".

IV. Heart Disease

During the year 87 students were found to have organic heart disease or marked functional disturbances of the heart. They have been kept under observation, have been repeatedly examined, and advice has

been given to protect their hearts as far as possible from unnecessary strain. Of these, 28, or 32.18 per cent, were excused from military and regular physical education and were assigned to individual gymnastics where they would receive suitable exercise. The condition of six of them was so marked as to make required physical education an unwarranted risk. They were permanently excused and three others had their work temporarily deferred.

Among the students who have matriculated in the University during the past decade, a total of 260 male students were found to have organic heart disease sufficient to warrant either their assignment to individual gymnastics for their protection or their excuse from military and regular physical education. Tables III and IV show the number of students who have heart conditions which are apparently organic and the diseases which may have been conducive to them.

Table III
Ten Year Survey of Male Students
with Organic Heart Conditions

Class of 1930	34
Class of 1931	37
Class of 1932	27
Class of 1933	33
Class of 1934	40
Class of 1935	17
Class of 1936	7
Class of 1937	17
Class of 1938	17
Class of 1939	<u>31</u>
Total	260

Table IV
Ten Year Survey as to Relationship between Certain Diseases
and Organic Heart Conditions among Male Students

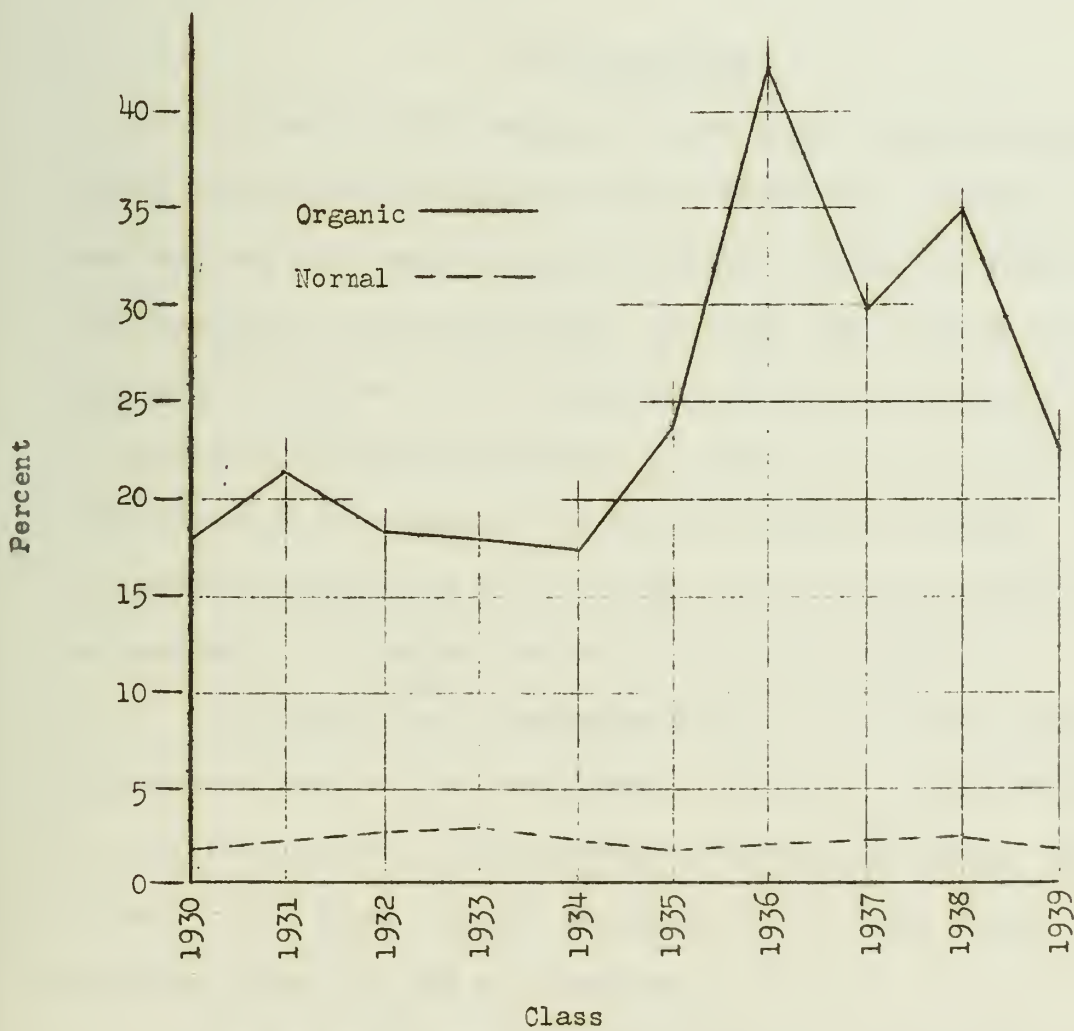
<u>Class of</u>	<u>1930</u>	<u>1931</u>	<u>1932</u>	<u>1933</u>	<u>1934</u>	<u>1935</u>	<u>1936</u>	<u>1937</u>	<u>1938</u>	<u>1939</u>	<u>Total</u>
Chorea	0	1	0	0	0	1	0	1	0	1	4
Diphtheria	6	8	3	3	4	2	1	2	2	3	34
Influenza	13	14	5	16	15	7	0	4	4	10	88
Pneumonia	4	5	3	6	5	5	0	2	2	9	41
Rheumatism	6	8	5	6	7	4	3	5	6	7	57
Scarlet fever	5	6	4	8	6	5	1	5	6	8	54
Tonsillitis	16	22	17	20	25	12	3	10	12	25	162

The heart disease found in adolescent and early adult life is largely the sequel of acute rheumatic fever and streptococcic infection associated with one or more of the diseases in Table IV. The relation of acute rheumatic fever to heart disease is well illustrated in a chart prepared by Dr. Lewis on the Relative Occurrence of Acute Rheumatic Fever in Students with both Normal and Diseased Hearts.

Success in the prevention of premature heart disease, particularly in those under 35, lies largely in avoiding infection in early life. The control of childhood diseases and careful protection of the heart of those afflicted with them or with rheumatism, influenza, pneumonia, or typhoid fever will do much to prevent premature deaths,- the loss of lives which should have many years of usefulness before them. In such action is a great opportunity for the conservation of life, the prevention of economic loss, and social advancement.

Students are being classified as to the condition of their hearts on the basis of the usual methods of physical diagnosis and the taking of the blood pressure. An electrocardiograph would make it possible to make a more nearly accurate differentiation between the cardiac

RELATIVE OCCURRENCE OF ACUTE RHEUMATIC FEVER
IN MALE STUDENTS WITH BOTH NORMAL AND DISEASED HEARTS



Data prepared by Dr. L. D. Lewis.

normals and abnormals. This instrument would make it possible for a number of students who now have to be disqualified for military, regular physical education, and athletics to participate in these subjects. If their electrocardiograms could be shown to be normal, it would add a good deal to the efficiency and peace of mind of those who are harassed by the persistent thought of having "heart trouble", but who may have only functional disturbances of the heart and have to be restricted in their exercise because of the necessity of playing safe when in doubt.

V. Albuminurics

A total of 227 freshmen who were found to have albuminuria at their first examination were kept under observation. Numerous urinalyses were made and their cases carefully studied to determine whether or not their conditions were pathological. Of these, 184 or 81.06 per cent were functional in nature. In the other 43 or 18.94 per cent the condition was persistent so that it was necessary to advise them to see their family physician or to go to urologists for further study and treatment. Five of this group ultimately had to be excused from military and physical education and assigned to individual gymnastics for their protection.

Ten Civil Service employees at the time of their physical examination were found to have albuminuria. In eight of these the condition was transient, in one it was persistent, and one had pyuria. Of the 72 University High School students examined, six had albuminuria, five of which were functional and one persistent.

Nephritis in students is primarily the complication or sequel of infection since on the whole they are too young to have the degenera-

tive type of the disease except in relatively rare instances. Of nine suspected cases, eight had had tonsillitis, seven measles, one appendicitis, and one streptococcic infection of the throat. Symptoms of a possible nephritis in several students disappeared on the removal of their diseased tonsils, thus clearly showing the relation between their focal infection and renal abnormality.

VI. Glycosurics

Of the 4,662 urinalyses for students, 22 showed glycosuria. In 20 the condition was alimentary and transient and in two diabetic. Of the Civil Service employees, five gave a positive test, all of which were alimentary. None of the University High School pupils showed a glycosuria.

VII. Maladjustment

A sustained effort has been made during the year to discover and to keep in touch with students who were maladjusted. Every member of the Class of 1939 has had one or more conferences with the Health Service staff. Students who gave a history of being subject to "blues" or worry, had had a "nervous breakdown", showed a tendency to be "shut-in", or were having difficulty in becoming adjusted to college life were repeatedly seen and in cooperation with other University agencies were given help in finding themselves.

In addition, 2,112 men and 785 women filled out personal hygiene questionnaires which were inventories of their health habits and mental attitudes. These were studied and a conference was held with each student. This procedure has been most helpful in determining the physical and mental

health of students, the conditions under which they live, and their adjustment to them.

At the time of the taking of their medical histories 186 students stated that they worried rather easily and 237 said that they occasionally had the "blues". A careful study of these cases revealed that their conditions rarely influenced their appetites, prevented sleep, or interfered with their academic work. With few exceptions members of this group responded promptly to advice, financial help, a rearrangement of their schedules of living, assistance in getting a job, participation in extra-curricular activities, and a friendly interest.

During the year two men developed frank psychoses. As one was a local resident, his parents were advised to place him under the care of a psychiatrist and the other was admitted to an institution at Anna, Illinois for treatment. There were four cases of marked psychoneurosis during the year; two in women and two in men. One of the men, on the advice of a psychiatrist, withdrew from school. The other continued and completed the year much improved and with a high average. The women have become adjusted and are pursuing their academic work satisfactorily. The prognosis in all four cases is good.

Although defective germ plasma, endocrine dysfunction, toxins, and poisons may produce mental disorders and predispose to functional disturbances of the mind, the greater part of mental disability comes out of unwholesome environment, defective training, and unhappy experience. In the prevention of mental disorders eugenics, psychiatry, and medicine have a role to play but the great preventives are the social, educational, recreational, employment, and religious agencies which give students fi-

nancial aid, help them to find a place in the collegiate sun, and provide them with a satisfying philosophy of life.

COMMUNICABLE DISEASE

I. Prevalence

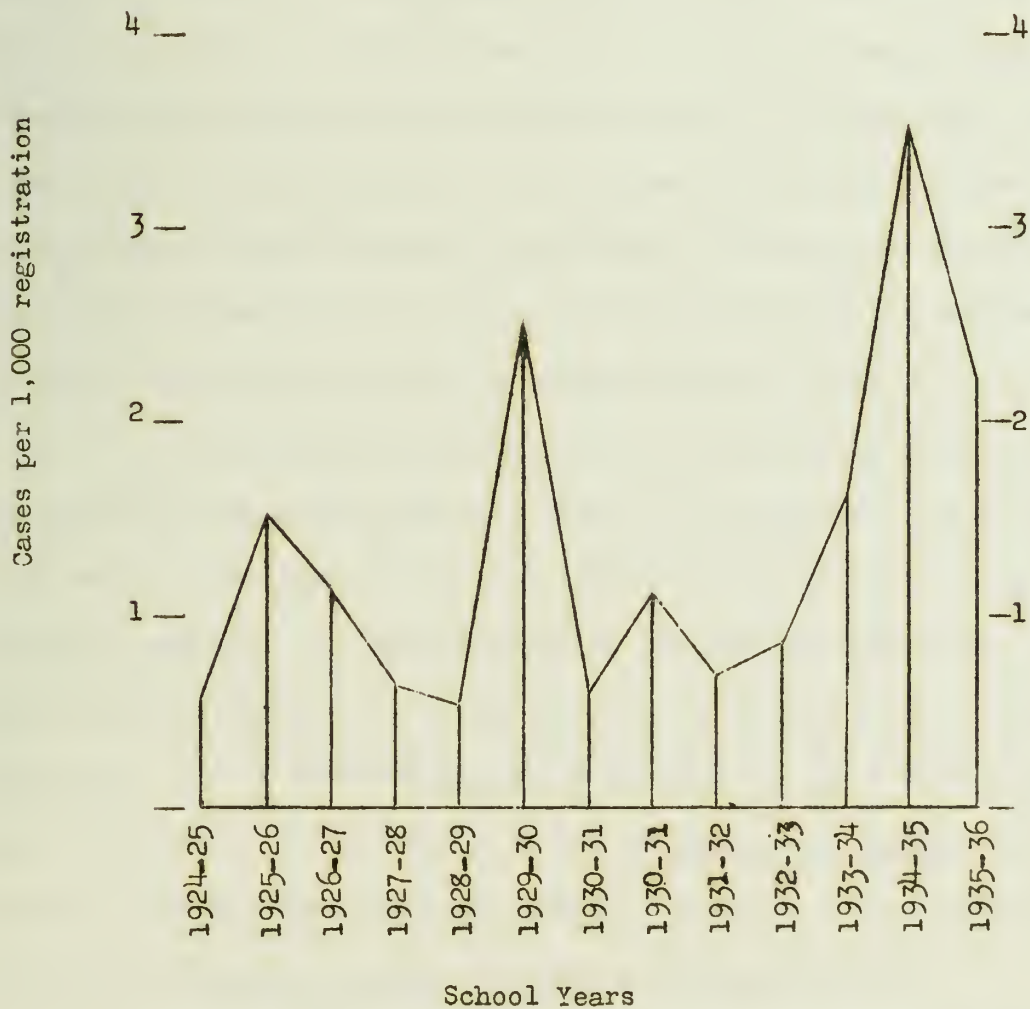
The occurrence of communicable disease during the academic year reflected quantitatively and qualitatively the morbidity rates of the state and country. The characteristic feature was an increase in "coryzas" which required hospitalization and in a number of instances probably were influenza in a mild form. In Table V are given the communicable disease cases reported in the student body during the year.

Table V
Communicable Disease Cases
in the Student Body

Coryza	1132
Coryza (hospitalized)	531
Scarlet fever	44
Mumps	29
Vincent's Angina	23
Chickenpox	20
Tuberculosis	5
Malaria	4
Diphtheria	3
German measles (rubella)	2
Measles	1
Typhoid fever	1
Anebic dysentery	1
Total	<u>1796</u>

The incidence of German measles decreased from 395 cases in 1934-35 to two this year. Mumps and chickenpox showed a marked increase. Scarlet fever remained high as it did throughout the country, but student cases were not quite as numerous as the preceding year. Of the total of 43 quarantines for scarlet fever, 28 resulted from student cases and 15 from a member of the family of the keeper of a lodging house developing

INCIDENCE OF SCARLET FEVER
1924 - 1936



it. In only one instance did a secondary case develop in a house under quarantine. This student had a positive Dick test and was in isolation at the time as an exposed "susceptible".

II. Modified Quarantine for Scarlet Fever

With the approval of the Director of the State Department of Health and the cooperation of local health officers, the procedure for dealing with students exposed to scarlet fever in the Twin Cities was modified to reduce to the minimum compatible with safety the loss of time from the classroom. Under the new plan all exposures were required to present either a certificate of scarlet fever or of a Dick test. Students whose Dick tests were negative were released immediately and permitted to attend classes without further restrictions; those who had positive Dick tests were allowed to go to classes provided they reported each morning at the Health Service Station for observation before doing so.

To avoid misunderstanding, printed forms explaining in detail the procedures to be followed were given to each student with a positive Dick test. He was required to sign for these instructions and to register his name, the hour, and the physician to be seen for observation. Little difficulty was experienced during the year in administering this modified quarantine. It is fundamentally sound because new cases rarely develop among those who have had scarlet fever, or those with negative Dick tests, and each student with a positive test is hospitalized immediately on his showing the slightest symptom suggestive of scarlet fever.

This plan has worked very successfully during the past year. Un-

der it 325 students with positive tests were saved 1,950 schools days or the equivalent of one school year for nine students which would have been lost to them under the procedure followed in previous years.

III. Certificates of Immunity to Scarlet Fever

Of the 682 students exposed to scarlet fever during the year 283 had negative tests, 325 positive tests, and 72 scarlet fever certificates. The filing of these certificates saved students 4,152 school days or 4.81 college careers of four years each.

IV. Hospitalization

McKinley Hospital admitted 60 students with communicable disease for a total of 993 days or an average of 16.55 days per patient. While these cases represent a very small portion of the students cared for at the McKinley Hospital the fact that each student had an average stay of 16.55 days indicates that the influence of fixed periods of quarantine in communicable disease is one of the major problems of the hospital. As will be noted in Table VI scarlet fever with its period of isolation of four weeks was responsible for 28 or 46.66 per cent of the cases and 699 or 70.39 per cent of the hospital days.

Table VI
Communicable Disease Cases Cared for
at McKinley Hospital

	<u>Cases</u>	<u>Days</u>
Scarlet fever	28	699
Mumps	20	180
Chickenpox	10	106
Measles	2	8
Totals	<u>60</u>	<u>993</u>

V. Contacts

A total of 1,060 students was exposed to communicable disease other than influenza and coryza which is a decrease of 64.14 per cent over last year. Of these, 67 were held in quarantine as required by law, 325 were permitted to attend classes under daily observation, and 668 had been exposed to diseases requiring no isolation of contacts or had certificates of immunization.

During the year two smallpox epidemics developed in the state. To prevent students from these localities returning to their homes over the weekend, possibly acquiring the disease, and introducing it into the student population on their return to the campus each student whose medical record showed that he was not immune to smallpox was called immediately, advised of the situation, and urged to be vaccinated. Under such circumstances students were glad to be immunized against smallpox.

VI. Venereal Disease

The incidence of venereal disease in the student body which has always been low showed a very marked decrease in those observed both as a result of voluntarily calling and of a follow-up on the basis of reports. Part of this decrease can be attributed to the activities of public officials, social agencies, and interested citizens in conducting a campaign of education and suppression of prostitution. In all, 19 students were found to have gonorrhoea and two syphilis. This is a rate of 1.70 per thousand for the former and 0.18 for the latter. In addition, one civil service employee was found to have syphilis.

VII. Faculty and Civil Service Employees

The number of cases of communicable disease in the families of the faculty and civil service employees showed a marked decrease over last year. A total of 16 cases were reported during the year of which eight were chickenpox, six scarlet fever, one mumps, and one meningitis. The most prevalent disease was chickenpox, exactly one-half of the cases being attributed to it.

COOPERATION WITH THE DEPARTMENTS OF MILITARY AND PHYSICAL EDUCATION

I. Permanent Classification

It was necessary last year to assign 250 men and 106 women to Individual Gymnastics for special training. Because of marked physical abnormalities or organic diseases 19 students were classified as unable to take either Physical Education or Military. Their conditions were such as to make it too great a risk or discomfort to require any form of activity of them. Of these six had marked organic heart disease, four had arrested or active tuberculosis, two were badly paralyzed, one had amputated extremities, one Hodgkins' disease, one chronic dysentery, one chronic peritonitis following appendicitis, one osteomyelitis, one spondylitis, and one marked asthenia.

A total of 86 students was permanently excused from Military because of their failure to meet the minimum requirements of the Medical Department of the Army. Forty-seven students below the minimum physical requirements for commission but who desired to take Military were assigned to it. Their physical conditions were such that they could undergo

training without undue risk.

II. Temporary Excuses

In the course of the year 69 men students were given temporary excuses from Military, Physical Education, or both: 41 from Military and Physical Education, 18 from Military only, and ten from Physical Education. They had undergone recent operations, were convalescent, or had lost so much time on account of illness that they were unable to complete satisfactorily the work for the semester.

A total of 265 prescriptions was issued to students whose physical conditions made it desirable for them to change from one course in Physical Education to another or to modify their required exercise. Students who had sinusitis, infections of the middle ear, or perforation of the drum were transferred from swimming to a form of exercise less likely to cause them trouble. By such transfers those with ringworm of the feet or who had undergone operations were able to take exercise with a minimum of risk of injury and with maximum protection to their associates against infection.

Eleven students were given recommendations that they be changed temporarily from one course in Military to another because of a physical condition which had arisen since their examination. This enabled them to complete their military work without the loss of time which would otherwise have followed.

III. Advanced Corps Students

At the request of the Military Department, the Health Service administered 387 doses of vaccine to 129 students to immunize them against

typhoid fever. Those students who were unvaccinated against smallpox and those whose scars were more than five years old were vaccinated preparatory to their going to camps for members of the Reserve Officers Training Corps. The laboratory of the Health Service made 182 urinalyses upon students who were being given special physical examinations by members of the Medical Corps of the Army for advanced Military work.

HOSPITALIZATION

I. The Student Body

In a student body of 11,170 students, hospital facilities become an important problem, especially in view of the fact that the University attracts to it people from many states and foreign lands as well as from every corner of the state of Illinois. Under such circumstances, communicable disease is certain to be introduced sooner or later into the University population. The transient nature of such a group materially increases the liability of its members to transmissible infection. Adequate available hospital facilities are the only safe answer to such a threat. Fortunately, three local hospitals and the McKinley Hospital are available but only the McKinley Hospital will take cases of communicable disease, a situation which becomes more acute with the continuous expansion of the University.

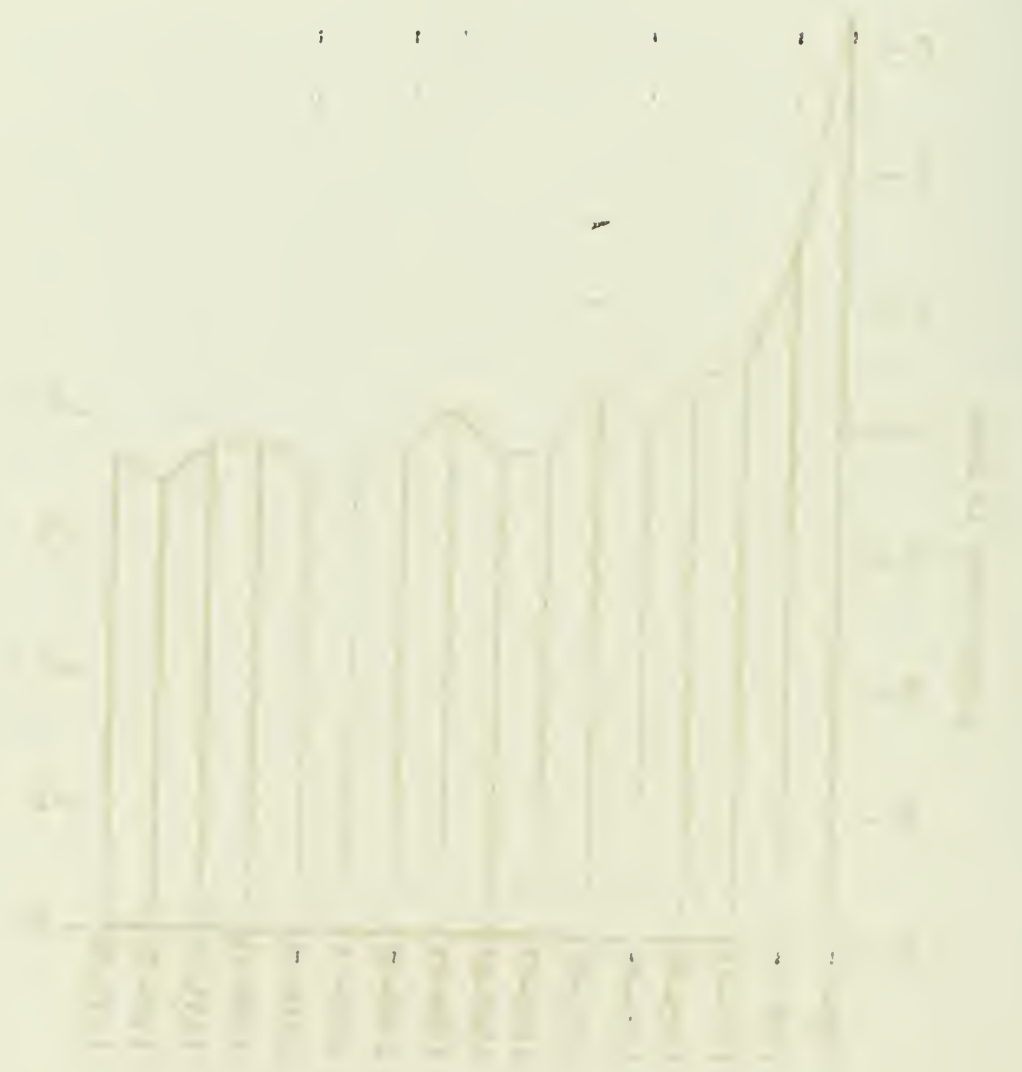
II. The University Hospital

A total of 2,506 students was admitted to the McKinley Hospital for 9,206 days which is an average of 3.67 days per patient. This means that 22.44 per cent or one out of every 4.44 students enrolled was hospitalized at the University Hospital which is quite a contrast with six-

AVERAGE STAY OF PATIENTS
AT THE UNIVERSITY HOSPITAL
(1920-21 to 1935-36)

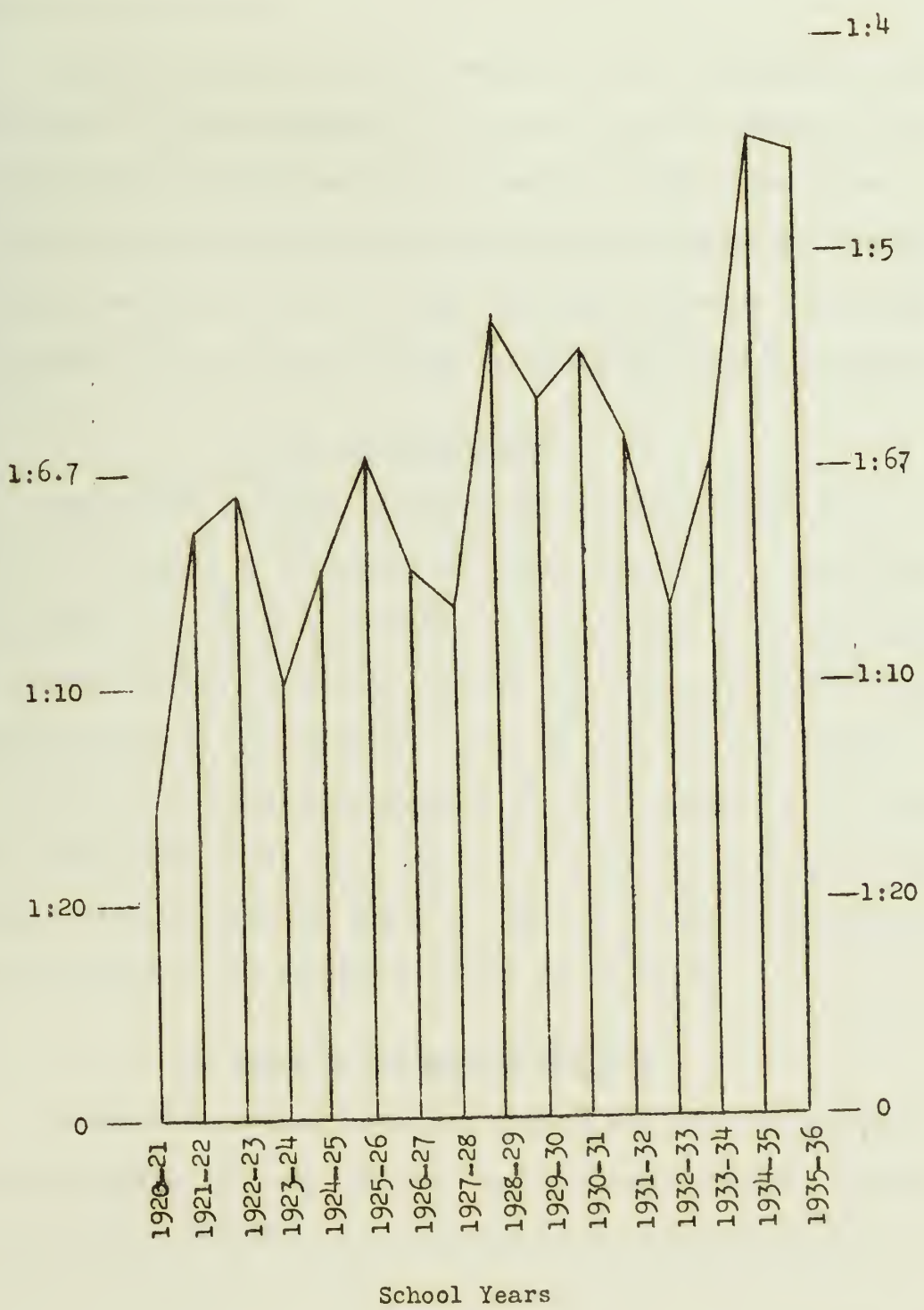


1910-1911
 REPORT OF THE
 COMMISSIONER OF THE
 GENERAL LAND OFFICE



Total Land Area

RATIO OF STUDENT ADMISSIONS
TO UNIVERSITY HOSPITAL TO TOTAL REGISTRATION
(1920-21 to 1935-36)



teen years ago when only about one student in forty was admitted to the hospital. The rising morbidity rate in the country at large is clearly reflected in an increase of 6.64 per cent in patients admitted and 11.28 per cent in hospital days.

Students are more and more coming to realize the value of early hospitalization. This is emphasized by the fact that the number of students entering the hospital has been increasing throughout the years while their average length of stay in days has been decreasing. Sixteen years ago the average stay was 7.25 days per patient whereas during the last few years it has only been between three and four days per patient.

III. Local Hospitals

The Burnham and Mercy Hospitals admitted 214 students for a total of 1,388 days or an average of 6.49 days per patient. The average length of stay in these local hospitals is considerably longer than that in the student hospital because of the fact that the latter does not admit patients known to require surgery, more particularly major surgery. During the past year students remained on an average about two and three-quarters days longer in the local than in the University hospital. Miss Alverna See of the Burnham and Sister St. John of the Mercy Hospitals have been most cooperative and helpful in caring for students.

IV. Needs of the Student Hospital

Of all the students hospitalized 92.13 per cent were admitted to McKinley Hospital and only 7.87 per cent to other hospitals. Although the latter had the benefit of 13.1 per cent of the student patronage in

hospital days, the University Hospital still had on this basis 86.9 per cent of the patronage. The burden of caring for the student body falls mainly on the McKinley Hospital; entirely upon it in the presence of an epidemic.

To meet such an emergency, it should have a sufficient number of beds. At present with nurses living outside of the hospital only 100 beds would be available with crowding which would be inadvisable if not fatal were virulent streptococci present in those having measles or influenza. The University should have for immediate use hospital beds to the extent of 1.5 per cent of the student body and for emergency facilities a potential number equivalent to three per cent of its enrollment. With the present registration this means that 149 beds should be ready for patients and 149 more beds on hand for emergency.

In the navy during ten years in peace time the average daily number of beds in the hospital was 1.69 per cent of the total force, and the number of beds deemed sufficient was placed at 3.4 per cent of the total enlistment. In the United States army during peace time hospitalization is available for three per cent of its strength. In view of the fact that men for the army and navy are selected for their physical vigor and in view of the fact that students are of both sexes, younger, and more susceptible to contagion, hospitalization should be possible in an emergency for at least three per cent of the student body.

To have available 150 beds, an addition of 50 beds to the hospital would have to be made to give the University facilities adequate to deal with communicable disease commensurate with scientific knowledge and its academic standards. The cost of such a unit would approximate \$150,000.

It is hardly possible to overestimate the value of a well-equipped hospital in protecting the University population in times of epidemics and in keeping down the mortality rate among students by being able to get them to bed quickly.

V. Voluntary Hospital Association

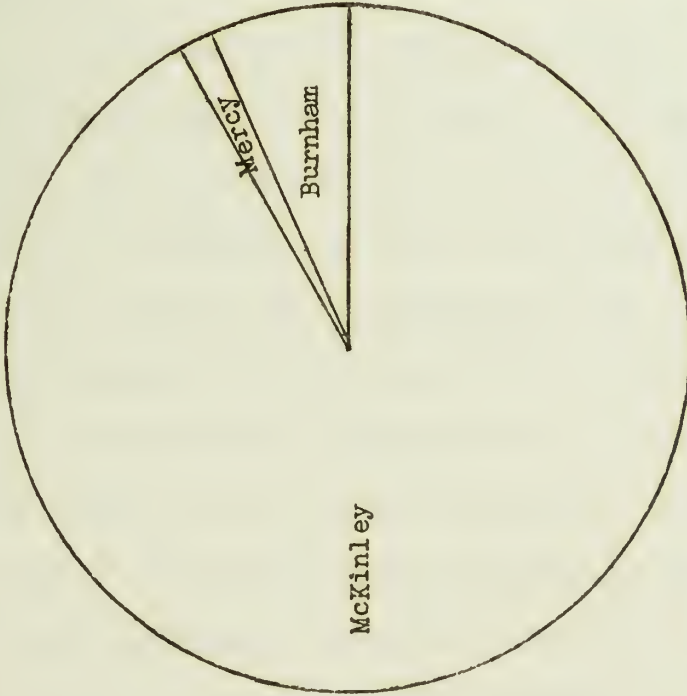
The hospitalization of students has been very much improved through the able and energetic campaign of Mr. David Larrabee to increase membership in the Association. By this increase it has been possible to control communicable disease better and to prevent the occurrence of epidemics by getting students isolated and under treatment promptly. When they are members of the Association, they will enter the hospital willingly and are more inclined to seek medical attention before their condition becomes alarming. The fine work of Mr. Larrabee contributes both to the prevention of disease and to prompt treatment, and it lessens complications.

Students, faculty members, and employees joining the voluntary Mutual Hospital Association during the first semester numbered 5,713 and the second semester, 5,156 which were respectively 54.55 per cent and 52.04 per cent of the student enrollment of each semester, 1935-1936. Students have a tendency not to join the Hospital Association during the second semester which is regrettable in view of the fact of the usual rise in illness associated with winter and early spring. This year has been an exception.

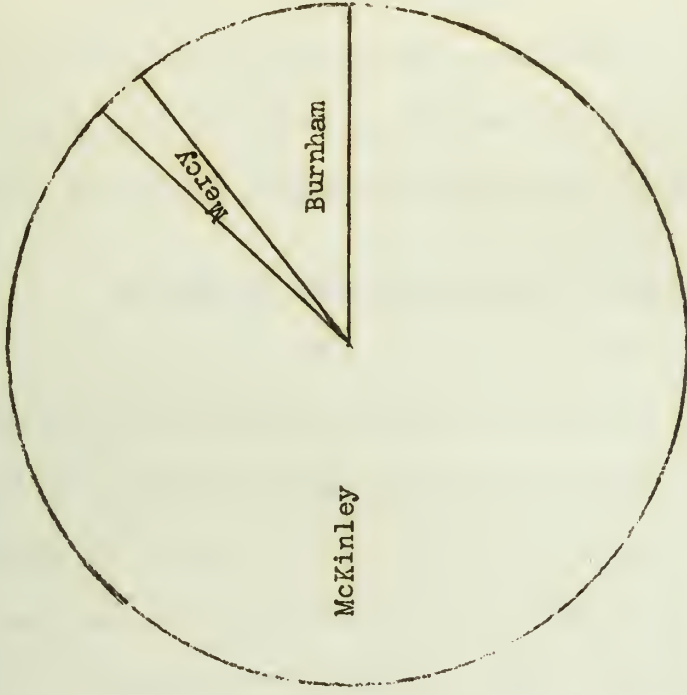
VI. Civil Service Employees

As a result of accidents several University employees enter the hospital each year for treatment. During the past year nine were

DISTRIBUTION OF HOSPITAL
CASES DURING
1935 - 1936



DISTRIBUTION OF TOTAL
NUMBER OF HOSPITAL DAYS
1935 - 1936



100%

75%

50%



100%

100%

75%

50%



100%

hospitalized for a total of 79 days or an average of 8.78 days per patient. Because of two or three serious injuries the average stay per patient is three days higher than that of last year.

THE GENERAL PRACTITIONER AND THE HEALTH SERVICE

The medical staff of the Health Service has had the most helpful cooperation of local and other physicians in caring for students. A total of 420 letters has been received concerning the physical condition of students who are or have been former patients of these doctors. Family physicians have certified that seven students were immune to smallpox as a result of having had the disease, 59 had been successfully vaccinated against smallpox, six had had typhoid fever, 72 had been inoculated against typhoid fever, three had been immunized against diphtheria, two were immune from scarlet fever, 187 had had scarlet fever, and 541 had been given the Dick test.

A total of 2,720 students was admitted to local hospitals during the academic year. Of this number 497 went directly from the Health Service Station and 2,223 were sent to the hospitals by the local doctors themselves. The students who went to the hospitals from the Health Service Station exercised their inalienable right to select their own physician by choosing fifty different doctors. Students admitted to the hospitals from the Health Service Station and those who entered otherwise proportionately show very little variation in their selection of local practitioners. This demonstrates conclusively that the Health Service staff makes no attempt to influence students in the choice of doctors who are known to be both reputable and competent.

For the last twenty years a sustained effort has been made to keep the duties of the Health Service staff distinct from the work of local physicians. It has been recognized that its function was preventive and educational and only therapeutic to the extent of first aid and advice. It dealt with the ambulatory cases only. When students needed prolonged attention, had to stay at their rooms or had to go to the hospital, they were turned over to an attending physician of their own choice. On the basis of this distinction the local practitioners and the medical staff of the Health Service have worked together for the common good of the students and with the same cordiality that local doctors have shown each other.

This line of demarcation has been determined not only by local conditions but by precedents established by municipal, state, and federal departments of health in practically every town and state in the Union. Health officials usually direct their preventive work to the group; the practitioner treats the individual. Authorities on public health administration generally urge such a differentiation of activities. Although such a division of labor is not always easy, it has proved the most satisfactory of all attempts to separate the fields of preventive and educational medicine from that of the general practitioner.

SUICIDE

I. Registered Students

During 1935-1936 three students committed suicide producing a mortality rate of 26.86 per 100,000. This is very unusual since this group represents exactly one-third of all such students who have died in the last

nineteen years while in college. The rate this year is much higher than the annual rate of 7.69 per 100,000 for all students who have been in the University since 1918.

The total number of students committing suicide during the nineteen year period while the University was in session was nine, two of whom were over 24 years old. This makes an annual average rate of 3.81 per 100,000 in the age group 15 to 24 and 4.91 for the whole group of nine. For registered students who died during the past year, the ratio of men to women is one to two, but for the nineteen year period it is five to four.

II. Students in Nineteen Year Survey

Of the 49 former students of the University during the nineteen year period who killed themselves either while in college or after leaving the University, the youngest was 19 and the oldest 49. During this period there were 67,125 matriculants in the University at Urbana. On this basis the annual death rate per 100,000 is 7.69 which is considerably less than 15.98 and 15.84 respectively for the Registration Area and the State of Illinois for the age group 15 to 49 based on the population shown in the Census Abstracts of 1930 and the mortality rates of 1933 for the former and 1934 for the latter.

Freshman men and freshman women have an average age of 19.14 and 18.68 years respectively, and seniors 22.23 and 21.71 years respectively. This shows that with few exceptions the age group 15 to 24 includes the entire undergraduate student body. Table VII gives the comparison of the death rates from suicide in the Registration Area, the State of Illinois,

the policy holders of the Metropolitan Life Insurance Company, and University students.

Table VII
Rate per 100,000 for Suicide in the Age Group 15 to 24

	<u>Men</u>	<u>Women</u>	<u>Total</u>
Registration Area, United States (1933)	9.03	5.85	7.43
State of Illinois (1934)	9.44	4.24	6.81
Metropolitan Life Insurance Policy			
Holders (whites only)	5.6	8.4	7.0
Registered students	3.78	3.91	3.81
All Illini for nineteen years	5.01	2.02	4.08

On the whole the death rate from suicide in college men and women compares favorably with that in the general population. It should, however, be borne in mind that the number of students considered is small and under such circumstances a few cases may produce disproportionate trends which would not be confirmed if the basis of computation were greater. Nevertheless, the data available indicates that the suicide rates of students and former students of the University are distinctly less than those of the same age group in the general population.

III. Methods

As a general rule, people who commit suicide are more bent on self-destruction than on showing versatility, - more determined to end it all than to be spectacular in their methods. Occasionally an individual deliberately seeks the headlines through the means he uses in his passing, but the average person employs firearms, poison, gas, a noose, drowning, or cutting. Recently, jumping from high places has become popular with those who feel unable to bear the "slings and arrows" of imagined or actual

"outrageous fortune".

In the choice of the means of suicide accessibility is undoubtedly important. Suggestion is also a factor and it is not uncommon to see an unusual method of self-destruction which has been given publicity come to be employed widely. In such instances the method presumably is used only by those contemplating suicide for a normal person will not destroy himself because a certain method of self-destruction is brought to his attention.

The mental pattern of the individual is a factor not only in determining whether or not he will commit suicide but often also has an important bearing on the means he will use. Certain persons take great pains to kill themselves in some particular manner because it apparently affords them keen satisfaction to do so.

The following table summarizes the methods employed by college men and women for their self-destruction and shows the distribution among men and women as to choice of means.

Table VIII
Methods of Suicide Among College Men and Women

	<u>Men</u>	<u>Women</u>	<u>Total</u>
Shooting	14	0	14
Poison	6	2	8
Gas	6	1	7
Jumping from heights	1	3	4
Self inflicted burns	1	1	2
Drowning	0	1	1
Hanging	1	0	1
Cut own throat	1	0	1
Plunged under train	1	0	1
Electrocution	1	0	1
Not specified	9	0	9
Total	<u>41</u>	<u>8</u>	<u>49</u>

It should be noted that 28.57 per cent use shooting, 16.33 per cent poison, 2.04 per cent drowning, and 14.29 per cent gas. The frequency of a method

of choice among students is similar to that of the suicide in the general population. Women showed a predilection to the increasingly popular method of jumping from heights; men to the use of firearms.

IV. Causes

Suicide rates are influenced by tradition, custom, religious belief, social attitudes, climatic conditions, and other factors which may vary from country to country. Ill health, mental abnormality, physical suffering, and handicaps lead men to think of self-destruction. Impaired prestige, loss of honor, unrequited love, fear of failure, and a feeling of inadequacy have a similar effect. Social pressure and religious training are deterrents of suicide and materially affect its frequency. They may also be conducive to it.

Life, to be attractive, must provide work which gives satisfaction and the human relationship which sustains in a world of joy and sorrow, pain and pleasure, victory and defeat. Confidence in the future and a sense of security are preventives enabling one to withstand the stress and strain of modern life which is too often a maelstrom of emotionalism, irrationality, and inhumanity. Men must have an abiding faith in the meaningfulness of life, in its purpose, and a satisfying belief in their own destiny. Otherwise they are likely to be overcome by an appalling sense of futility which may turn them to self-destruction. Suicide is a challenge to medicine, psychology, philosophy, and religion.

V. Prevention

Suicide is very difficult to prevent because many persons contemplating self-destruction give no hint of their intention but present

it as a fait accompli. Even those who are suspected and are being watched often lead their attendants to think they are no longer considering suicide only to jump from a window, hang themselves with a part of their clothing, or drown themselves in the bathtub on the first opportunity.

There is no specific against suicide. It is a complex phenomenon, the frequency of which is determined by group attitudes, character, temperament, and environmental factors over which the individual may have no control. It is indicative of a badly integrated personality, one not able to withstand the frustations and vicissitudes of life.

As a social problem suicide increases with age and contrary to usual opinion is more the result of the weariness, hopelessness, and disillusionment of age than the emotional conflicts and disappointments of youth. More than half of all the suicides of the United States occur among persons 45 years of age and over, although this group constitutes only a little more than one-fifth of the total population.

The stress of study, conflicts of philosophies, the difficulties in adjustment to campus demands, social stresses, and general excitement which are alleged to be the liabilities of higher education are not apparently important causes of suicide. If they are operative they are so effectively offset by opportunities for the realization of ambition, satisfaction, and self-expression that they are not only counteracted but the wholesomeness of college environment neutralizes to a considerable degree other factors predisposing to suicide.

HOMICIDE

Homicide or the killing of one human being by another has, in

the Registration Area of the United States, a rate of 15.33 per 100,000 which gives this nation the distinction of being the most lawless in the world. While this national disregard of human life is naturally reflected in the causes of death of former students, a nineteen year survey showed that homicide of one form or another caused an annual death rate of 2.51 per 100,000. The youngest Illini killed was 18; the oldest 42.

Homicide is not necessarily a crime. It may be excusable or justifiable and within the law, or it may be unlawful and felonious and classified as murder and manslaughter. Vital statistics make no distinction between the above categories but designate all such killings of one person by another as homicide. Accidental death, due to negligence, may appear on criminal records, but in vital statistics they are never listed as homicide.

I. Justifiable or Excusable

For ten Illini who have been killed there was no legal responsibility for their death. Most of these cases were not only excusable but were regrettable accidents for which neither party was at fault. Two of these deaths resulted from boxing and one from fencing. Of the remaining seven, two were accidental shootings, two were caused by mentally deranged individuals, and three died at the hands of officers of the law.

II. Felonious

Of the former students considered, only six lost their lives through homicides of a felonious nature. Five of these were killed either in a holdup or a robbery and the other lost his life in gang warfare. It is pleasing to note that very few college men and women turn to crime. Of

the 67,125 matriculants considered only two lost their lives because of their activities as gangsters, one of these being killed by an officer.

III. Prevention

Shooting undoubtedly is the commonest method of homicide.

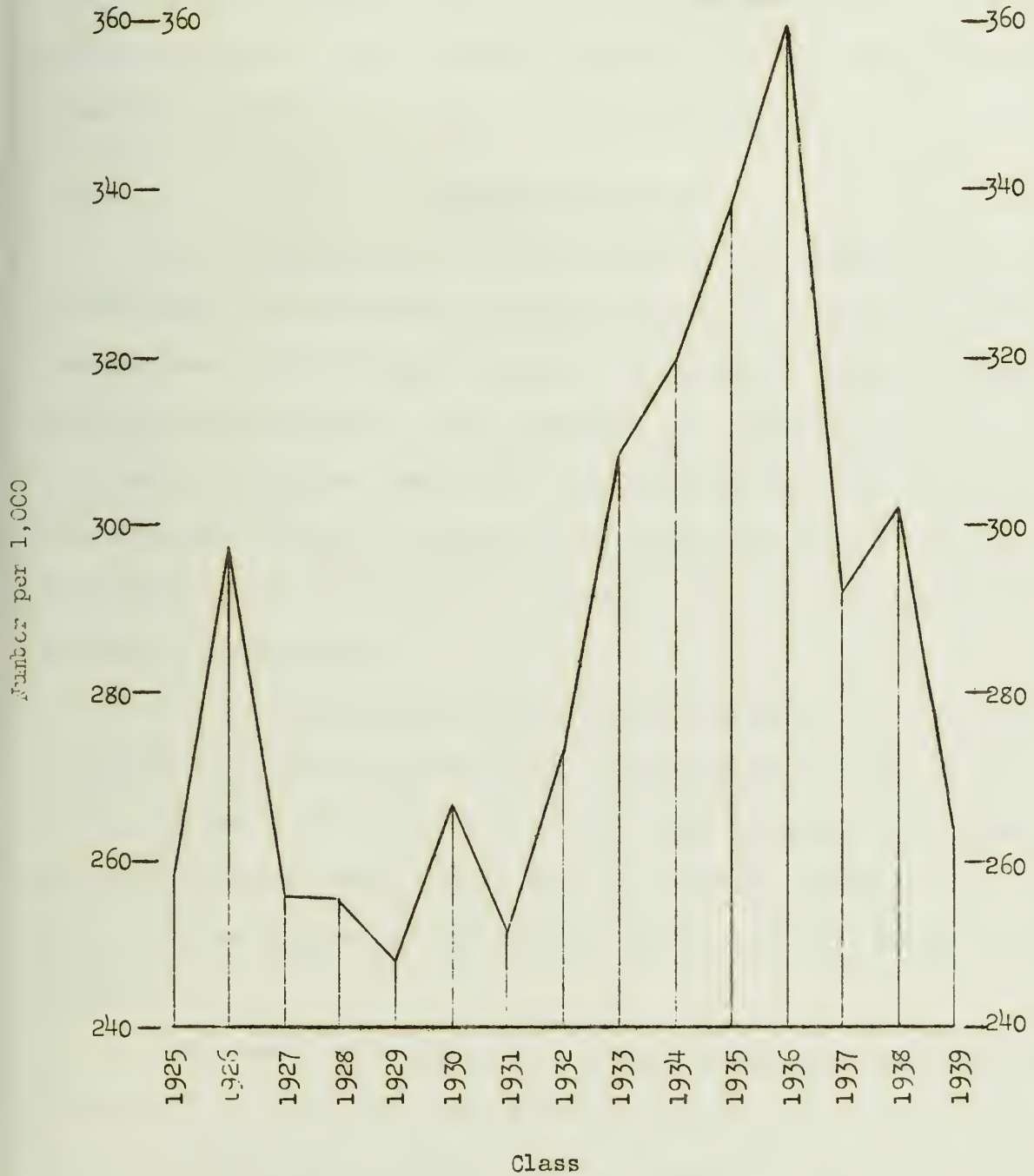
Rigid restrictions of the sale and carrying of firearms would materially reduce the incidence of murder and manslaughter. The ease with which revolvers and machine guns can be acquired in the United States is both a national disgrace and a public scandal. So long as such a condition continues, the United States' leadership in homicide is secure and the lives of college men and women will continue to be sacrificed in robberies, holdups, and accidents involving firearms.

ACCIDENTAL DEATHS

Macnines, speed, and skyscrapers symbolize a civilization in North America unsurpassed for the production of mortality from accidents. The United States has more fatal accidents for the size of its population than any other country in the world and Canada is a close second.

Of the students examined in the Class of 1939 at an average age of nineteen, 26.15 per cent or 261.5 per 1,000 had suffered one or more painful accidents before matriculation. In the Chart on "Injuries Per 1,000 Students Examined" is given the rate by classes for the freshmen at the time of entrance for the last fifteen years. This shows that at least one out of every four students, and sometimes as high as one out of every three students, has suffered some severe injury or accident before matriculation. When such a large proportion of a group is subject to injury, a high mortality rate for accidents is inevitable.

INJURIES PER 1,000 STUDENTS EXAMINED



Accidents caused 182 of the 841 deaths of former students who have been registered in the University since 1918. This closely approximates the total of 186 known Illini dead of the World War and is a rate of 28.54 per 100,000. With the average expectancy of life being 60 years for men and 62 years for women, society lost 6,353 years of service from its potentially most capable and promising members.

I. Automobile Accidents

To exchange 35,000 deaths from typhoid fever annually for 36,000 deaths from automobile accidents each year -- to trade half a million patients with the disease annually for one million injured by motor cars every twelve months -- all in 30 years, is a change from death by infection to death from trauma, but it is not progress. For science to save thousands of lives by sanitation and immunization only to destroy them by the motor car it makes possible would seem to be the attainment of frustration and futility.

In a nineteen year survey of deaths of Illini it was found that automobile accidents as a cause of death ranked third. A total of 89 Illini, ranging in ages from 17 to 63, died from this cause at an average age of 26.11 years. Their rate of death of 13.96 per 100,000, while high, is still not as high as that for students who die from this cause while in college.

The annual mortality rate of automobile accidents among students registered in the University during the last twelve years is 15.33 per 100,000. In Table IX it is shown that, as a cause of death of students while

the University is in session automobile accidents take first place. Of the twenty such students killed by automobiles only ten were fatally injured while in Champaign County.

Table IX
Summary of Student Deaths at University of Illinois
1924-1936

	<u>Men</u>	<u>Women</u>	<u>Total</u>
Automobile accidents	16	4	20
Other Accidents	9	1	10
Suicide	4	4	8
Pneumonia	2	3	5
Infections	4	1	5
Heart disease	2	2	4
Meningitis	4		4
Tuberculosis	2	1	3
Operations	2	1	3
Appendicitis	3		3
Infantile paralysis	2		2
Sarcoma	2		2
Ulcer of stomach	2		2
Amebic dysentery	1		1
Hodgkin's disease	1		1
Unclassified	<u>2</u>	<u>1</u>	<u>3</u>
Total	58	18	76

Automobile density is only one of the reasons that the wholesale slaughter by motor vehicles in the United States is without parallel outside of war, but it is not the whole explanation by any means. Many deaths result from rashness and recklessness which would not occur if motor vehicles were used with care and forethought. Both speed and "jaywalking" are factors in the mortality rate. On the basis of incomplete data, tying sleds to automobiles led to the death of one student and the serious injury of four others.

Cars hitting bicycles or motorcycles caused the death of four Illini, collisions between two automobiles the death of fifteen, and a car

being struck by a train the death of ten. In eight instances death resulted from the overturning of the automobile, in seven instances by crashes with stationary objects, and in two instances by pedestrians being struck.

The Human Factor. In the driving of an automobile the most important factor of safety is obviously the man at the wheel. Safety engineering, better highway construction and improved cars have much to do with reducing the mortality rate from automobile accidents; but the fact must be faced that warning signs at danger points are not read quickly by the half-blind, red and green traffic lights mean little to the colorblind, and alcohol impairs judgment and slows reaction time, making the drinking driver a danger to himself and a menace to others.

To insist on the mechanical perfection of cars is excellent but is only a small part of safety. There should be equally careful testing to show that drivers are physically able to handle such cars. To build safe roadways is admirable, but they are only avenues of death unless education, public sentiment, and the law will prevent and control the mania for speed to which many human beings are highly susceptible.

The safety campaign which spends its force on grade crossings, bad curves, and poor roadways is valuable; but if it reserves no energy to be directed against the "accident-prone" individual, the physically incompetent, and the morally irresponsible, it deals only with a small part of the problem. Yet in a number of municipalities and states, the only test of a person's ability to drive a car is whether or not he can find the steering wheel and get his foot on the starter.

II. Drowning

Although drowning is surpassed by the automobile as a cause of accidental death in college students, it is an ever present possibility where feats of daring beyond the experience and strength of youth are attempted. A total of 29 Illini have lost their lives from drowning within the last nineteen years at an average age of 24.93 years. Two of these were drowned in the swimming pools of the University. The death of six others resulted from broken necks while diving into shallow water or in striking some submerged object.

Prevention. The prevention of drowning consists of teaching students swimming, life saving procedures, and the proper method of giving artificial respiration. Communities can contribute to the prevention of drowning by providing opportunities for water sports, well supervised pools, and bathing beaches.

But after every precaution is taken, the carelessness of those who wish to show off will continue to cause drowning. Recklessness will continue to take its toll of lives of those who must demonstrate how far they can swim, who learn nothing of the depth of the water and the nature of the bottom before they dive, who go into cold water overheated, or who give no attention to tides or currents and swim alone in dangerous water or over long distances. Those who follow the water for a living and those who live near popular beaches are overwhelmed by the conviction that most drownings are due to a lack of foresight and are readily preventable by the exercise of a modicum of common sense.

III. Airplane Accidents

With the American public becoming more and more air-minded every day airplanes promise to take a greater number of lives each year. Though women have taken up flying the same as they have other occupations not a single Illini co-ed has lost her life in an airplane crash. The fourteen Illini who died in airplane accidents were all men and died at the low average age of 24.5 years.

IV. Other Accidents

A total of 50 Illini have died from other accidental causes at the youthful age of 24.5 years. Of these, five died from burns, seven from electrocution, nine from falls, five from accidental gunshot wounds, five from physical education accidents, four from accidental poisoning, five from railroad accidents, five from industrial accidents, one from a motorcycle striking a cow, one by being hit by a falling tree, one by starvation in a jungle, and two unclassified. It is significant that only three of this group were women which indicates that the woman has not invaded the sanctity of male occupations as much as public opinion might lead one to think.

APPENDICITIS

I. The Mortality Rate

During the year 43 students suffered attacks of appendicitis, 62 others underwent appendectomies, and one died from peritonitis due to perforation of the appendix. Although only one student in the whole student population died from appendicitis, even that death is to be deplored.

Appendicitis is fatal beyond all necessity. As Garlock has stated it, "The mortality rate of acute appendicitis is directly dependent upon the length of time between the onset of symptoms and the operation." Of 841 former students of the University who have died during the last nineteen years and for whose deaths there is dependable information, 43 or 5.11 per cent died of appendicitis, an annual rate of 6.74 per 100,000. The rates for the Registration Area for the State of Illinois for 1933 and 1934 respectively are 13.61 and 12.92.

II. Comments

Deaths from appendicitis are largely avoidable. If the disease is recognized early and the appendix promptly removed before perforation takes place, the mortality rate is less than one per cent. The tragedies of appendicitis are caused by delay, the use of purgatives, and poor judgment in selecting an attending surgeon.

Procrastination due to failure to recognize the disease, the lack of appreciation of the danger involved, the wish to exercise economy, reluctance to enter a hospital, or the fear of surgery are so common in connection with appendicitis as to cause from 40 to 50 per cent of the patients admitted to certain hospitals to have perforated appendixes at the time.

The mortality from removal of an inflamed appendix before rupture has occurred is almost negligible but increases rapidly with perforation, abscess, and peritonitis. In many cases the interval between the onset of appendicitis and admission to the hospital is the almost unbelievable length of three or four days. If many useful lives are not to be snuffed out by appendicitis needlessly, students must know that laxa-

tives are dangerous in the presence of pain in or tenderness of the abdomen. They must understand that an early diagnosis of their condition may save them from both complications and death. They must appreciate that their delay in being operated upon may prove fatal and that mortality rates are reduced to a minimum by a good surgeon.

CHILDBIRTH

In 1933, 13.12 per cent of the deaths of women in the Registration Area between 20 and 39 years of age was caused by childbirth. For 1934 in the State of Illinois the rate was 9.82 per cent. Of the 172 former "co-eds" who died between these ages 10.47 per cent lost their lives from this cause. In Table X are given the complications of parturition which proved fatal.

Table X
Complications of Childbirth

Puerperal fever	5
Toxemia of pregnancy	1
Pernicious vomiting	1
Postpartum hemorrhage	1
Cesarean section	1
Nephritis	1
Embolism	1
Septicemia scarlet fever	1
Eclampsia	1
Not specified	<u>5</u>
Total	18

For college women to have a higher mortality rate in childbirth than the average female of the State of the same age is a cause for serious reflection. Obviously the small number considered does not warrant sweeping conclusions, but the trend is clearly in a direction which, to say the least, is thoroughly disappointing. An examination of the causes

shows clearly that a considerable number of them are complications of the puerperium and are largely preventable in modern obstetrical practice.

Such a situation immediately raises the question as to whether or not the prospective mother and her husband had proper knowledge to make them aware of the necessity of ante partum care, the selection of an expert accoucheur, and the value of hospitalization of obstetrical cases. In the death of a single individual there is rarely a greater tragedy or greater loss to society than that of the death of a cultured and promising young woman in childbirth. If education can prevent such occurrences or even reduce them to a minimum (and it can), its duty is very clear.

CAUSES OF PREMATURE DEATH AMONG ILLINI

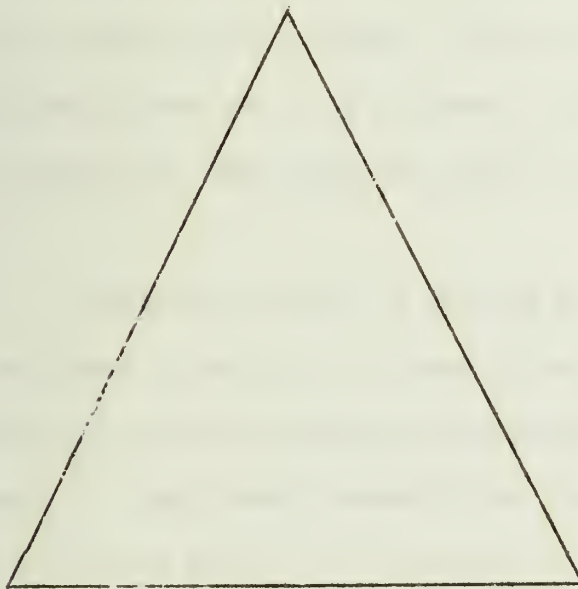
Of the members of the last nineteen classes 841 have died at the average age of 26.55 years. From Table XI it is seen that 197, or less than one out of four, were women whose deaths occurred at an average age of 27.65 years. The women have maintained their reputation for living longer than men by outliving them by approximately one and a half years.

The leading causes of premature death among college students are respiratory infections and accidents. In the former group, tuberculosis, pneumonia, and influenza caused the death of 230 Illini or 27.35 per cent of the total. In the latter, automobiles, airplanes, drowning, and other accidents accounted for the death of 182 former students which is 21.64 per cent of the group studied.

A pandemic of influenza in 1918 was greatly responsible for the large number of deaths in respiratory infections. In that year 29 died from pneumonia and seven from influenza. Of the 29 dying from pneumonia

LOST PRODUCTIVITY FROM PREMATURE DEATH

(841 Illini)



Total years of life expectancy after college - 31,511



Total actual years of life after college - 2,953

eleven had it as a complication of influenza. It is significant that during this epidemic only two women died. This epidemic seemed to attack the younger Illini, the average age of death for those dying of pneumonia and influenza being 21.28 and 24.57 years respectively.

Diseases which once were a scourge no longer take their former quotas of lives. There were only ten deaths from typhoid fever, seven from scarlet fever, and one from diphtheria. Smallpox caused no mortality.

Heart disease, the leading cause of death in the general population, respects no age limits. It was the fourth most frequent cause of death proving that it is by no means a disease of senility. It was slightly more frequent in women than men, and the former died at an earlier average age.

Infection is still a problem of modern medicine. The need for the avoidance of delay on the part of the patient in seeking medical attention and the use of proper technique by the physician can not be over-emphasized. Septicemia, appendicitis, operations, and childbirth were responsible for 144 or 17.12 per cent of the total deaths. A number of these have to be classified as avoidable by prompt action on the part of the patient and the exercise of good judgment and technique by the attending physician.

The highest average age of death, 31.69 years, occurred in the case of malignant tumors. Diseases of the brain was second with an average age at death of 29.36 years and heart disease third. It is to be expected that these three causes of death would produce such a result because they

Table XI

NINETEEN YEAR SURVEY OF ILLINI DEATHS

Cause	Men		Women		Total	
	Average age of death	Number of deaths	Av. Age of death	No. of deaths	Av. age of death	No. of deaths
Tuberculosis	25.84	80	26.15	34	25.93	114
Pneumonia	24.86	80	30.89	19	26.02	99
Automobile accidents	25.58	71	28.22	18	26.11	89
Heart disease	29.16	44	26.28	18	28.32	62
Miscellaneous accidents	23.94	47	33.33	3	24.50	50
Suicide	26.66	41	24.50	8	26.31	49
Septicemia	26.50	38	25.80	10	26.35	48
Appendicitis	26.11	35	26.25	8	26.14	43
Miscellaneous diseases	26.84	31	28.82	11	27.36	42
Malignant tumors	30.38	26	35.10	10	31.69	36
Operations	28.21	19	27.69	16	27.97	35
Drowning	24.96	26	24.67	3	24.93	29
Nephritis	28.13	23	23.67	3	27.62	26
Childbirth			27.50	18	27.50	18
Influenza	25.17	12	27.20	5	25.77	17
Homicide	24.54	13	31.00	3	25.75	16
Airplane accidents	24.50	14			24.50	14
Diseases of the brain	29.90	10	28.00	4	29.36	14
Meningitis	27.09	11	23.50	2	26.54	13
Typhoid fever	22.56	9	21.00	1	22.40	10
Scarlet fever	28.20	5	21.50	2	26.29	7
War victims	23.60	5			23.60	5
Diabetes	<u>28.50</u>	<u>4</u>	<u>23.00</u>	<u>1</u>	<u>27.40</u>	<u>5</u>
Total	26.22	644	27.65	197	26.55	841

AVERAGE AGE AT DEATH OF FORMER STUDENTS FROM CERTAIN CAUSES

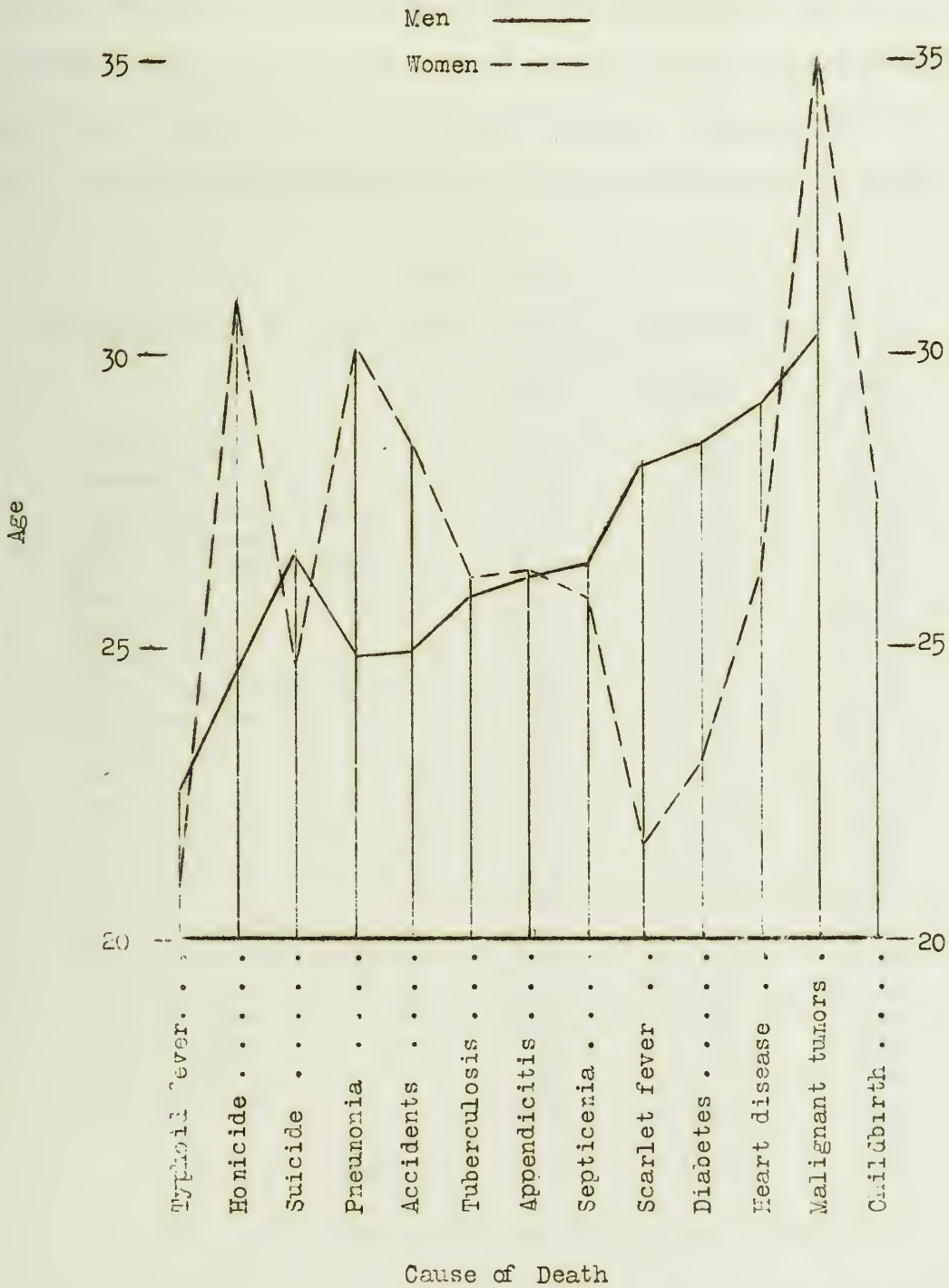


Chart No. 12

are more frequent in people of middle age and older.

A total of 42 persons died from sundry diseases. Of these four were caused by thyrotoxicosis, three anebic dysentery and its complications, three leukemia, three infantile paralysis, two Hodgkin's disease, two intestinal obstruction and two myclitis. Some of the causes of death in this group of which there was one case each were diphtheria, malta fever, malaria, Banti's disease, Ludwig's angina, Addison's disease, malignant hypertension, food poisoning, and Vincent's angina.

Table XII

AVERAGE PERIOD IN YEARS FROM COLLEGE TO DEATH FOR 841 ILLINI

	<u>Men</u>	<u>Women</u>	<u>Total</u>
Tuberculosis	3.09	3.09	3.09
Pneumonia	2.38	3.47	2.59
Automobile accidents	3.35	4.17	3.52
Heart disease	4.77	3.22	4.32
Miscellaneous accidents	2.02	2.67	2.06
Suicide	4.15	2.63	3.89
Septicemia	4.24	3.40	4.06
Appendicitis	3.89	4.63	4.02
Miscellaneous diseases	3.09	3.91	3.31
Malignant tumors	3.92	8.40	5.17
Operations	5.11	4.50	4.83
Drowning	3.15	1.67	3.00
Nephritis	3.91	3.00	3.81
Childbirth		5.61	5.61
Influenza	1.92	3.40	2.35
Homicide	3.08	6.00	3.63
Airplane accidents	3.43		3.43
Diseases of the brain	3.60	4.75	3.93
Meningitis	5.45	1.50	4.85
Typhoid fever	1.89	0.00	1.70
Scarlet fever	4.00	1.50	3.29
War victims	2.20		2.20
Diabetes	1.25	1.00	1.20
Total Av.	3.38	3.95	3.51

It will be seen from the above table that the average length of life from college to death was three and one-half years. The women, on the whole, lived a half year longer than the men after leaving the University. Women who died in childbirth on the average lived longest and students with malignant tumors next. Those having diabetes lived only 1.20 years after attending the University, and those with typhoid fever 1.70 years. Other causes of death in which the deceased lived but a short time after leaving school were pneumonia, influenza, and miscellaneous accidents.

STUDENT DEATHS

I deeply regret to report that six students died during the year. Of these three were suicides, one an automobile accident, one the result of perforation of the appendix, and one Hodgkin's disease. Two students also died during the summer before they had an opportunity to return to school. The cause of death in one instance was streptococemia and in the other meningitis.

During the year the Medical Staff of the Health Service suffered an irreparable loss in the death of Dr. Vergil A. Ross who died suddenly on August 26, 1935. He had been with the University for fourteen years and was beloved alike by the students and his colleagues. In his service to the University he was never known to do less than his best.

TONSILS

A study of the chart on the number of students per thousand examined whose tonsils had been removed shows that there is an apparent

NUMBER OF STUDENTS, PER 1,000 EXAMINED ON ENTRANCE,
WHOSE TONSILS HAD BEEN REMOVED



Chart No. 13

rising tide of pathological tonsils. In 1920-21, 79 students per thousand had their tonsils removed; in 1935-36 the rate was 512 per thousand. Unless such findings indicate a "massacre of the tonsils", it seems that Mother Nature has not properly developed the human throat to meet the demands of a complex civilization, that alert parents have discovered this fact, and that modern medicine is coming to their rescue with scientific thoroughness.

INJURIES OF CIVIL SERVICE EMPLOYEES

During the year employees of the University suffered 149 accidents in the line of duty which is an increase of 5.67 per cent over last year. Of these, 117 required minor surgical attention as a result of their injuries and 32 were so severely injured that they were referred to outside surgeons, specialists, or radiologists for prolonged treatment or roentgrams.

In the case of the employees who suffered injuries requiring outside medical attention the progress of their recovery was checked from time to time. Upon their complete recovery a written report was made to the Compensation Committee of the University for its use in making recommendations to the Court of Claims.

INSTRUCTION IN HYGIENE

I. Elementary Hygiene

For the first semester elementary hygiene and sanitation was taught to 1,538 students of which 1,108 were men and 430 were women. The registration for the second semester was 1,127 men and 355 women, a total of 1,482. The total registration in elementary hygiene was 3,020 or an

increase of 4.86 per cent over that of last year. In all there were 20 sections for the men and eight for the women each semester.

II. Advanced Hygiene

The advanced course in hygiene for coaches, physical education majors, and teachers had a total registration for the year of 148 students. During the first semester students in this course were taught in two sections and the second semester in three sections.

III. Hygiene x3

In cooperation with the director of University Extension Service a correspondence course in hygiene has been offered. During the past year there was a registration of eighteen students, two of whom have completed the course. The quality of work so far presented by those taking it is very gratifying. If a greater enrollment occurs, this course should prove a means for students to render themselves proficient in hygiene, and it should become an important factor in the education of the public in sanitary science and preventive medicine.

IV. Proficiency Examinations

A total of 192 students passed the proficiency test in hygiene and received credit in it. The number of students passing these examinations tend to increase as the years go by indicating either that students are taking advantage of their opportunity and preparing for these examinations during the summer or that the instruction in high schools in hygiene and allied subjects is improving. The distribution by colleges and geographically of those who passed the proficiency test the past year is given in Tables XIII and XIV below.

Table XIII

DISTRIBUTION BY COLLEGES OF THOSE PASSING
THE PROFICIENCY EXAMINATIONS IN HYGIENE

<u>College</u>	<u>No. Passing</u>
Liberal Arts & Sciences	101
Commerce	35
Engineering	27
Agriculture	20
Fine & Applied Arts	6
Physical Education	1
Education	2
Total	<u>192</u>

Table XIV

GEOGRAPHICAL DISTRIBUTION OF THOSE PASSING
THE PROFICIENCY EXAMINATIONS IN HYGIENE

Illinois

<u>County</u>	<u>No. Passing</u>	<u>County</u>	<u>No. Passing</u>	<u>County</u>	<u>No. Passing</u>
Adams	2	Henry	1	Morgan	1
Bond	1	Iroquois	2	Moultrie	1
Brown	1	Jefferson	2	Ogle	1
Bureau	1	Kane	5	Peoria	4
Champaign	32	Kankakee	1	Piatt	2
Christian	1	Kendall	1	Randolph	2
Clinton	1	Knox	1	Richland	1
Cook	45	LaSalle	3	Rock Island	1
Crawford	3	Lawrence	1	Sangamon	2
Cumberland	2	Lee	1	Schuyler	2
Douglas	2	Livingston	2	Scott	1
Dupage	5	Macon	4	St. Clair	1
Hayette	3	Macoupin	2	Stephenson	1
Ford	2	Madison	3	Tazewell	2
Franklin	1	Marion	3	Vernilion	3
Fulton	3	Marshall	1	Warren	1
Gallatin	1	McDonough	1	Whiteside	2
Grundy	1	McLean	5	Winnebago	2
Henderson	2	Mercer	1	Total	<u>179</u>

Out of State

Arkansas	2	Kentucky	1	Pennsylvania	<u>1</u>
Florida	1	Missouri	3	Total	13
Indiana	2	New York	3		

By offering students an opportunity to take a proficiency examination in hygiene at the beginning of each semester, the University is obtaining three very important results:

- (a) A reduction in its teaching load.
- (b) The avoidance of requiring a student to take a subject of which he may already have a good working knowledge.
- (c) The promotion of health education in the primary and secondary schools of the state where it is very much needed.

As will be noted in Table XV, 508 students have been excused from elementary hygiene since the inauguration of these examinations four years ago. This means that the teaching burden in elementary hygiene has been reduced by ten sections over a period of four years.

Table XV

STUDENTS PASSING PROFICIENCY EXAMINATIONS
IN HYGIENE THE LAST FOUR YEARS

<u>Year</u>	<u>1st Semester</u>	<u>2nd Semester</u>	<u>Total</u>
1932-33	91	7	98
1933-34	67	11	78
1934-35	104	35	139
1935-36	114	79	<u>193</u>
	Total Number Excused		508

HEALTH EDUCATION

I. In High Schools

The findings in a study of the health education of high school graduates warrant the assertion that unless public school systems provide our leading citizens of tomorrow with more and better information with which to preserve their health, to protect their families, and to function as intelligent members of a complex society, many needless deaths will

occur, much unnecessary suffering will have to be borne, and quackery will thrive. The facts obtained indicate the general knowledge of health is such that the applications of sanitary science and preventive medicine will be greatly retarded and, in many instances, lost, regardless of the success of research, the generosity of philanthropy, or taxation for the common good.

Through an N. Y. A. project supervised by Dr. John R. Cain, the data concerning the health education of 4,540 high school graduates were studied. Of these less than one-eleventh had had hygiene, about one-half biology, a little more than one-fifth physiology, and approximately three-fifths general science. About 80 per cent of the instruction in hygiene, 58 per cent in physiology, 43 per cent in general science, and 40 per cent in biology were by teachers who taught one or more other subjects.

Table XVI
SCIENCES TAKEN BY 4,540 HIGH SCHOOL GRADUATES

	<u>Number</u>	<u>Percent</u>
Hygiene	407	8.96
Biology	2238	49.29
Physiology	1002	22.07
Chemistry	2683	59.09
Physics	2821	62.14
General Science	2774	61.10

Table XVII
FULL OR PART-TIME INSTRUCTION IN SCIENCES IN HIGH SCHOOL

	<u>Full Time</u>		<u>Part Time</u>	
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
Hygiene	84	20.64	323	79.36
Biology	1351	60.37	887	39.63
Physiology	420	41.92	582	58.08
Chemistry	1751	65.26	932	34.74
Physics	1804	63.95	1017	36.05
General Science	1573	56.71	1201	43.29

Physics was taken in high school by 2,821 or 62.14 per cent of the prospective freshmen and chemistry by 2,683 or 59.09 per cent. In many high schools students have to take a certain amount of science to meet the requirements for graduation, but chemistry, physics, or both are frequently considered as satisfying this standard. It is possible, therefore, for pupils to graduate from high school without having had biology, hygiene, or physiology although neither chemistry nor physics provides them substantial knowledge of even the elements of personal and community health.

In Table XVIII are given the various subjects with which instruction in hygiene, general science, biology, or physiology was shared. The practice of drafting whoever might be willing to attempt to teach hygiene and sanitation is clearly shown by the fact that teachers of English, mathematics, Latin, history, agriculture, geography, civics, and book-keeping were given an opportunity to instruct high school students in preventive medicine. A great part of the small group of high school graduates who have had some instruction in health education received it from their instructors in physical training as occasional talks on personal hygiene. Many of these are athletic directors who are faced with the stern necessity of producing winning teams or hunting for another job with which to support their families. Under such circumstances they are too busy to give hygiene the attention its importance demands.

As a rule there is little difference in the previous training of freshmen who pass the proficiency examination in hygiene and those who do not take it or those who fail it. Such factors as a favorable environment,

Table XVIII
SHARING OF INSTRUCTION IN OTHER SUBJECTS
BY HIGH SCHOOL TEACHERS OF SCIENCE

	Hygiene	Gen'l Science	Biology	Physiology
Physical Education	235	81	40	63
Biology	10	259		87
Mathematics	11	141	72	59
General Science	5		232	35
Physics	3	149	66	18
Chemistry	1	123	64	14
Chemistry and Physics		85	21	13
History	12	57	47	40
Home Economics	8	71	22	36
Agriculture	2	42	73	12
English	9	43	44	25
Physiology	12	30	71	
Physiography	2	8	4	82
Botany	2	16	22	7
Zoology		18	20	8
Latin	1	11	26	6
Geography	4	4	14	37
Civics	1	5	4	5
Music		10	5	1
Manual Training	1	8	1	4
Bookkeeping	1	7	5	1
Hygiene		2	6	7
Social Science	1	2	3	5
Not specified	1	11	11	6
Economics	1	3	1	6
French		4	4	1
German		2	1	2
Spanish		1	1	
Commercial Law			2	2
Auto Mechanics		3		
Art		1	1	
Typing			2	
Astronomy		2		
Electrical Science		2		
Geology			1	
Journalism			1	
TOTAL	323	1201	887	582

scientific background, and unusual ability largely account for those who pass. Being born in the home of a physician or a public health worker and

having training as a nurse or a scout seem to be helpful.

II. Qualifications of Teachers

There are five essential qualifications for the teachers of health education in high schools; namely,

- 1) a thorough background of the fundamental sciences of biology, chemistry, and physics,
- 2) knowledge of physiology, bacteriology, psychology, sociology, and economics,
- 3) an understanding of the philosophy, psychology, and principles of education,
- 4) proper facilities, and
- 5) an opportunity to keep up with the progress of preventive medicine and sanitary engineering which make it possible for man to control his environment more readily and to adjust himself to it.

If the qualifications of those as given in Table XVIII are compared with the above standards, it is very apparent that there is an urgent need for curricula in colleges for prospective teachers of hygiene and for the better training of those who wish to give instruction in it.

III. Objectives in Hygiene

Hygiene should be a great clearing house where the well established results of research are given to the public through the education of its future leaders in the application of newly obtained knowledge. Education in hygiene, by instruction in the classroom, by conferences, and by sustained efforts to maintain the best sanitary environment is the easiest, shortest, and quickest route by which the great progress in preventive medicine during the last century may be brought to the community. It should have a place in the curricula of schools, colleges, and universities:

- 1) As a means for the development of physical and mental efficiency, the creation of a wholesome attitude of mind, and the cultivation of moral and social qualities.
- 2) As a decisive factor in determining that the healthfulness of environment shall more closely approach the maximum commensurate with sanitary knowledge.
- 3) As a training essential to intelligent participation in enterprises of civic betterment and to the assuming of the duty of a well informed citizen in public health advancement.
- 4) As a protection against disease and as a guarantee that education and experience shall function for society for the longest period possible.
- 5) As specific information having a far-reaching influence on vocational success.
- 6) As an education necessary to evaluate properly health fads, fancies, and fictions that are continually being foisted on the public.
- 7) As a safeguard to the individual and to the public against the tremendous economic loss (to say nothing of the loss of health and life) from medical frauds, cults, and quackery.
- 8) As one of the best methods to bring to the public the benefits to be derived from the enormous sums being spent by philanthropists and bodies politic for research in the domain of preventive medicine and sanitation.

IV. The Need for Adequate Instruction of Hygiene in Secondary Schools

A survey of the teaching of hygiene in the high schools, a study of the causes of the death of former Illini, and classroom instruction provide a perspective of the use of science in the advancement of human welfare which is the cause of serious reflection. Notwithstanding the fact that hygiene and sanitation are the best fruits of biology, chemistry, and physics, they are far from being used adequately

to prevent disease and to promote health in the comprehensive sense of living most and serving best.

The results of the survey (see Tables XVI, XVII, and XVIII) show conclusively that health education in high schools in quantity is much below what is commensurate with the needs of individuals in our complex civilization and that in quality of instruction no subject given in the secondary schools is treated so haphazardly or its teachers, as a rule, have so little special training in the subject they are trying to teach. In the presence of such a situation it is not surprising that the per cent of students passing the proficiency examination in hygiene is low or that the University has to give instruction in a subject which would benefit a much greater per cent of the people of the state were it taught effectively in the high schools. If elementary hygiene were properly presented at this educational level, the University would be free to make a larger contribution to the welfare of the State by training its graduates in the hygienic aspects of their vocations.

Examination of the causes of death of former Illini (see Table XI) reveals that they are largely preventable and that the deaths at the average age of 26.55 years instead of at 60 for men and 62 for women is a tremendous social and economic loss for which the only effective preventive is education. These findings not only indicate where the emphasis must be placed in instruction but justify the policy of the University in teaching freshman hygiene to insure that its investment in education shall bring the largest dividends to the State for the longest period possible.

MENSTRUATION IN FRESHMAN WOMEN

As a part of our N.Y.A. program Dr. Maude Lee Etheredge and her assistants of the Women's Department conducted a study of the menstrual cycle of freshman women at the University of Illinois. This study extended over a period of three semesters and included a group of 1,140 students. It was found that the usual age at which menstruation began was 13 years, the length of the period five days, and the menstrual cycle 28 days.

Table XIX
MENSTRUATION

Age at which menstruation began			Length of period		
Years	Number	Per cent	Days	Number	Per cent
10	24	2.10	2	8	.71
11	116	10.18	3	66	5.84
12	350	30.70	4	237	20.97
13	393	34.47	5	450	39.82
14	180	15.79	6	243	21.51
15	59	5.18	7	109	9.65
16	16	1.40	8	13	1.15
17	2	.18	9	4	.35
Total 1,140			Total 1,130*		

*Ten students failed to answer the question as to the length of the period.

In 84.06 per cent of those studied the degree of menstrual flow was moderate, in 10.38 per cent profuse, and in 5.55 per cent slight. Dysmenorrhea or menstrual disturbance of varying degrees and frequency occurred in 79.4 per cent of this group. Pain in most cases was at the beginning of the period and was of a pelvic nature. The drugs used for dysmenorrhea in many instances contained either aspirin, phenacetin, or pyramidon as the principal ingredient and were: feminex,

THE TABLE OF CONTENTS

CHAPTER I. THE HISTORY OF THE UNITED STATES

The history of the United States is a subject of great interest and importance. It is a subject which has attracted the attention of the world, and which has been the subject of many valuable works. The history of the United States is a subject which has attracted the attention of the world, and which has been the subject of many valuable works. The history of the United States is a subject which has attracted the attention of the world, and which has been the subject of many valuable works.

CONTENTS

CHAPTER I.	THE HISTORY OF THE UNITED STATES	1
CHAPTER II.	THE HISTORY OF THE UNITED STATES	1
CHAPTER III.	THE HISTORY OF THE UNITED STATES	1
CHAPTER IV.	THE HISTORY OF THE UNITED STATES	1
CHAPTER V.	THE HISTORY OF THE UNITED STATES	1
CHAPTER VI.	THE HISTORY OF THE UNITED STATES	1
CHAPTER VII.	THE HISTORY OF THE UNITED STATES	1
CHAPTER VIII.	THE HISTORY OF THE UNITED STATES	1
CHAPTER IX.	THE HISTORY OF THE UNITED STATES	1
CHAPTER X.	THE HISTORY OF THE UNITED STATES	1
CHAPTER XI.	THE HISTORY OF THE UNITED STATES	1
CHAPTER XII.	THE HISTORY OF THE UNITED STATES	1
CHAPTER XIII.	THE HISTORY OF THE UNITED STATES	1
CHAPTER XIV.	THE HISTORY OF THE UNITED STATES	1
CHAPTER XV.	THE HISTORY OF THE UNITED STATES	1
CHAPTER XVI.	THE HISTORY OF THE UNITED STATES	1
CHAPTER XVII.	THE HISTORY OF THE UNITED STATES	1
CHAPTER XVIII.	THE HISTORY OF THE UNITED STATES	1
CHAPTER XIX.	THE HISTORY OF THE UNITED STATES	1
CHAPTER XX.	THE HISTORY OF THE UNITED STATES	1
CHAPTER XXI.	THE HISTORY OF THE UNITED STATES	1
CHAPTER XXII.	THE HISTORY OF THE UNITED STATES	1
CHAPTER XXIII.	THE HISTORY OF THE UNITED STATES	1
CHAPTER XXIV.	THE HISTORY OF THE UNITED STATES	1
CHAPTER XXV.	THE HISTORY OF THE UNITED STATES	1
CHAPTER XXVI.	THE HISTORY OF THE UNITED STATES	1
CHAPTER XXVII.	THE HISTORY OF THE UNITED STATES	1
CHAPTER XXVIII.	THE HISTORY OF THE UNITED STATES	1
CHAPTER XXIX.	THE HISTORY OF THE UNITED STATES	1
CHAPTER XXX.	THE HISTORY OF THE UNITED STATES	1

The history of the United States is a subject of great interest and importance. It is a subject which has attracted the attention of the world, and which has been the subject of many valuable works. The history of the United States is a subject which has attracted the attention of the world, and which has been the subject of many valuable works. The history of the United States is a subject which has attracted the attention of the world, and which has been the subject of many valuable works.

midol, aspirin, pryamidon, anacin, dysco, thyroid, codeine, Lydia Pinkham, and kalms. A moderate leukorrhoea occurred in 7.7 per cent of the students of which 3.3 per cent was of a constantly moderate nature. Of the remainder, 44 per cent had a very slight leukorrhoea and 48.3 per cent none at all.

Before matriculation in the University 316 or 27.72 per cent had had irregular menstrual periods but during their first year in the University only 119 or 10.44 per cent had amenorrhoea. Of those with amenorrhoea only 16 or 3.68 per cent resorted to medicine.

Table XX

NERVOUS SYMPTOMS DURING MENSTRUAL CYCLE

Worry and fatigue	39	Nervous, fatigue	20
Nervous	82	Fatigue	50
Excited	28	Excited, fatigue	10
Worry	105	Excited, worry, and	
Nervous and excited	55	fatigue	13
Nervous and worry	63	Nervous, excited, and	
Nervous, excited, and worry	73	fatigue	8
Nervous, worry, and fatigue	38	Excited, worry	24
		All of the above symptoms	56
		No symptoms	476
		Total	1,140

In Table XX are the nervous symptoms experienced during the menstrual cycle. Of the total students studied 476 showed no nervous symptoms and 14 per cent were antagonistic towards menses. Exercise was decreased during menstruation in only 19.63 per cent while the other 80.37 per cent continued its regular program of physical activity.

Of this group of students, 5.1 per cent had chronic constipation, and only 5.5 per cent were constive during the menstrual period.

Among the remainder, 40.9 per cent experienced constipation occasionally and 48.5 per cent not at all. Acne was constantly present in 167 or 14.6 per cent while 390 or 34.2 per cent had it only when associated with the period. Over half or 57.5 per cent of the students did not use tobacco at all. Of the remainder, 17.5 per cent smoked occasionally and 25 per cent smoked five or more cigarettes daily.

NASAL EOSINOPHILIA

During the year Dr. L. N. Judah studied as part of an N.Y.A. project the diagnostic aid of nasal eosinophilia in allergic disease. It has been thought by certain physicians that allergic states might produce an eosinophilia in the nasal secretion paralleling that found in the blood picture. Different investigators have obtained varying results. His study attempted to answer three questions:

- 1) Is there a nasal eosinophilia in cases in which the history is such as to make allergy a reasonable diagnosis?
- 2) If so, is this eosinophilia constant at all times or does it occur only during attacks?
- 3) If the above questions could be answered affirmatively, does the test offer possibilities as a diagnostic aid?

To this end 696 slides were examined. Of these, 69 did not have enough cells to be counted, and 627 were satisfactory. Of all white blood cells counted, 1.19 per cent were eosinophiles. Slides from allergic persons had a smaller percentage of eosinophiles than from persons who had no such history. Allergic cases showed an average eosinophile count of 0.51 per cent while persons without such history had an eosinophile count of 1.22 per cent.

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APPENDIX

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Two presumptive cases of nasal allergy ran a rather uniform though low grade eosinophilia. A case of acne, which can be produced at will by a diet containing peanuts, did not show any eosinophilia; one of unquestioned food allergy (chocolate) was consistently eosinophilic.

In general it can be said that there seems to be no constant nasal eosinophilia in those who appear to be allergic. The number of eosinophiles in the nasal secretions is, therefore, of little diagnostic significance in such conditions.

LABORATORY SERVICE

As a part of the routine work of the Health Service various laboratory services were given the students and civil service employees. In many instances these tests were essential either in making effective the regulations of the University concerning foodhandlers or in diagnosing and controlling communicable disease.

Table XXI
LABORATORY TESTS

Urinalyses	8841
Widal tests	1504
Throat cultures	319
Bacteriological examinations of excreta	214
Kahn tests	107
Sputum examinations	51
Smears from the urethra	31
Basal metabolism tests	31
X-ray examinations	26
Blood examinations (White Cells)	21
Eye cultures	8
Agglutination tests for undulant fever	7
Blood smears for malaria	4

Of these, the following were positive: Widal tests, thirty; throat swabs for Vincent's Angina, twenty-seven; smears from the urethra

for gonorrhoea, nine; throat swabs for diphtheria, eight; throat swabs showing streptococci, four; Kahn tests for syphilis, three; sputum examinations for tuberculosis, one; and blood smears for malaria, one.

To insure that those who had a positive Widal test were not typhoid carriers, examinations of three specimens of feces were made for each person. All of these specimens proved to be negative.

FIRST AID

A total of 107 first aid cabinets is being maintained in the various buildings on the campus. They are much used and are visited weekly or twice weekly, depending upon their location, to replace supplies as needed.

As has been customary for a number of years, members of the Health Service Staff upon request have attended certain University functions in order to render any first aid necessary. This service was given at the Electrical Engineering Show, the Physical Education Tournaments, and the Commencement Exercises.

In cooperation with other departments the offices of the Health Service were also made available in emergencies to guests of the University. Its facilities were offered to those attending Farm and Home Week, 4-H Club Conventions, and short courses given by the University.

SANITATION

The Health Service has endeavored to insure students with as safe and sanitary living conditions as possible. Complaints have been investigated to determine the cleanliness and healthfulness of the environ-

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ment in which students live. Insanitary conditions and fire hazards have been reported to the proper local authorities, and lack of tidiness and cleanliness has been called to the attention of landlords and proprietors. Immediate attention has been given to daily reports which were received concerning the conditions of the swimming pools and water supply. Whether on or off the campus, the Health Service has aimed to stimulate improvement in the environment of the students.

I. Swimming Pools

The swimming pools of the University have been maintained in good sanitary condition throughout the year. With the fine cooperation of the staff of the State Water Survey, the Sanitary Engineer of the University, and the Departments of Physical Education, the users of the pools have been required to observe the standard sanitary regulations for swimmers. Daily bacteriological tests have been made, and the residual chlorine of the water was determined twice a day. The loads of the pools have been controlled, and systematic efforts made to care for the pools in accordance with the standards of the American Public Health Association and Conference of State Sanitary Engineers.

Colon bacilli were found during the year in five of the samples of water taken daily from the pools for examination. A total of 25 high counts of bacteria was noted. These occurrences, upon investigation, were found usually to be caused by some temporary mechanical difficulty, life-saving practice in street clothes, over-loads, or other factors which were quickly remedied by appropriate action.

II. The University Water Supply

During the year the University completed extensive improvements

in its water system and supply. Two new wells, put down in accordance with modern sanitary procedures, were added; pipe lines were increased; and a reserve in supply and pressure was provided by the erection of a tank on the south farm.

Subsequent to these improvements and not unexpectedly, gas forming bacteria appeared repeatedly in the water supply in the southern part of the system. While the density of the organisms was within permissible limits, their presence in the water supply of the University left something to be desired because any attempt to evaluate a drinking water on the basis of a distinction between the so-called fecal and non-fecal types of the coli-aerogenes group is "unwarranted". Happily, through the prompt and skillful efforts of Sanitary Engineer, Mr. H. L. White, these "gas formers" were brought under control and the institution now has a water supply in which it may have complete confidence.

III. Lunch Rooms and Refectories

An increasing number of students have begun to show an interest in the condition of local lunch rooms. This concern of prospective customers has resulted in improvement. It proves, after all is said and done, that students themselves can do much by their criticism of the sanitation of restaurants and their non-patronage of sub-standard establishments to improve insanitary conditions and promote the excellence of service they desire.

This student sentiment has focused the attention of the local municipalities on enacting and enforcing ordinances regulating restaurants and refectories. Urbana has recently passed an ordinance providing for

the inspection of lunch rooms. If it is enforced, it should do much to improve the sanitary conditions of eating establishments in that city. Champaign has also become actively interested in the condition of its lunch rooms, and their further improvement in the near future seems likely. A number of proprietors have been very cooperative and have given their support to the enactment of ordinances to improve restaurants in the Twin Cities.

Several local lunch rooms and refectories recently were either remodeled or renovated. This has not only made these establishments more attractive but has also helped to improve their sanitation.

In a friendly spirit the Health Service has cooperated with local officials and proprietors of restaurants in every way possible to give the students better places in which to eat. It not only has examined and immunized their student foodhandlers but it has also urged the adoption of the following minimum standards of sanitation.

1. SANITATION. The lunch rooms, kitchen, equipment, and cooking, serving, and eating utensils shall be clean.
2. STERILIZATION. The lunch room shall have ample facilities to provide boiling water to insure the sterilization of eating and drinking utensils after each separate use.
3. MILK. The milk sold shall be from healthy and tuberculin-tested cows, produced under sanitary conditions, pasteurized, and served in bottles.
4. FOOD. The food shall be fresh, sound, unadulterated, and protected against contamination from dirt, insects, rats, and mice.
5. PERSONNEL. All foodhandlers shall be neatly attired, careful of their personal cleanliness, medically examined to preclude the possibility of their being carriers of disease, immunized against smallpox and typhoid fever, and permitted to handle no food when suffering from either respiratory or intestinal disease.

The first part of the report deals with the general situation of the country. It is found that the country is in a state of economic depression, and that the government is unable to meet its obligations. The report also mentions that the country is in a state of political instability, and that the government is unable to maintain order. The report concludes that the country is in a state of economic and political crisis, and that the government is unable to meet its obligations.

The second part of the report deals with the financial situation of the country. It is found that the country is in a state of financial crisis, and that the government is unable to meet its obligations. The report also mentions that the country is in a state of political instability, and that the government is unable to maintain order. The report concludes that the country is in a state of economic and political crisis, and that the government is unable to meet its obligations.

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6. INSPECTION. Inspection shall be at frequent intervals to insure that the sanitation, the health of personnel, the sterilization of eating and drinking utensils, and the wholesomeness of the milk and food are maintained.

IV. Lodging House Inspection

A systematic inspection of fire hazards and sanitary conditions in lodging houses, which was begun under the F.E.R.A., was continued the past year under the N.Y.A. Suggestions and recommendations were made by the inspectors to the landladies and reports of fire hazards and nuisances were sent to the proper local authorities. In the following table are shown the inspections made.

Table XXII

Lodging Houses Inspected

	<u>Organized</u>	<u>Unorganized</u>	<u>Total</u>
Total houses	102	282	384
For men	65	139	204
For women	37	143	180
Dormitories	100	94	194
Rooms	1640	1191	2831
Student occupants	2985	2191	5176

As will be noted from the above table, only about half of the student population was included in this inspection. This is partially explained by the fact that a number of students live with their parents in neighboring towns and that a number of others reside at home in parts of Campaign or Urbana not included within the Student District. As only three persons with the hours permitted by the N.Y.A. were available for these inspections, their efforts were restricted to the houses with the greatest number of students or to those which were known to be substandard.

In a student population of 11,170 it is not surprising to find a wide variation in living conditions. From Table XXIII it is apparent that the greater part of the students live under favorable conditions and only a very small per cent are in rooms classed by student inspectors as poor. Obviously, the attainment and maintenance of tidiness and cleanliness are a joint enterprise requiring the cooperation of both the student and the lodging-house keeper; neither are able to realize them alone.

A number of students with limited means attend the University. Many of them purposely select "C" accommodations for financial reasons and prefer to live in a fair room and attend an "A" university than to have either "A" accommodations at a "C" college or no higher education at all. Such students often become distinguished alumni. As long as there are self-supporting students, there will be a place for "C" grade lodging houses which, like the "C" grade lunch room, are often uninviting but offer little risk to health.

In half of the study rooms and dormitories of organized houses there was need for more attention to ventilation. In most instances, lack of care rather than defects in construction was the reason for the unsatisfactory findings. While about a fifth of the study rooms and a third of the basements were somewhat untidy, they were well within the range of quick improvement through the efforts of the student and the person in charge of the house.

Table XXIII

Sanitary Conditions of Lodging Houses

	<u>Organized Houses</u>				<u>Unorganized Houses</u>			
	<u>Exc.</u>	<u>Good</u>	<u>Fair</u>	<u>Poor</u>	<u>Exc.</u>	<u>Good</u>	<u>Fair</u>	<u>Poor</u>
Study rooms								
Cleanliness and tidiness	269	1059	307	5	148	937	102	4
Ventilation	.	785	838	17		832	343	16
Bathrooms								
Cleanliness and tidiness	10	91	1		11	257	14	
Dormitories								
Cleanliness	8	73	18	1	9	69	15	1
Ventilation		47	50	3	8	63	22	1
Basements								
Cleanliness and tidiness	6	52	33	2	10	163	71	31
Yards								
Conditions	14	84	4		22	247	13	

In unorganized houses the conditions of the basements and bathroom facilities were not as good as in organized houses. Out of 318 independent houses 84 had inadequate bathroom equipment; only eight of the 107 organized houses were defective in this respect. A number of the unorganized houses are old buildings in which the plumbing fixtures have not been altered since their construction.

In making the inspections of lodging houses special attention was given to see whether or not the following considerations were met:

1. STUDY ROOMS. The rooms were cared for daily and thoroughly cleaned once a week. They were in order and free from dust, lint, and papers. The bed clothing was clean and a fresh sheet was supplied each week.
2. BATHROOMS. Bathroom facilities of one toilet, one bathtub or one shower and one lavatory were furnished each eight students. Hot water was provided for the lavatory daily and baths at least twice a week. The plumbing was modern and in good repair. The walls, floors, and mirrors were clean; all waste papers were disposed of promptly; and there were adequate racks for towels.

3. DORMITORIES. Beds were neatly made and clean. The floors had been recently swept and rubbish removed.
4. VENTILATION. Each room had at least one window opening to the outside which could be lowered at the top. Or proper ventilation could be obtained by a transom or by a window ventilator. On the basis of the BUILDING CODE recommended by the National Board of Fire Underwriters each student was allowed a minimum of 480 cubic feet of air. All dormitories were provided with proper cross ventilation.
5. LIGHTING. All windows were of proper size and location. The type of fixtures, their position, and the wattage of the bulbs were such as to prevent eye strain from glare or insufficient illumination.
6. BASEMENTS. The basement was clean, dry, and free from odors. All waste materials were promptly disposed of or burned.
7. PREMISES. The halls and stairways were lighted and well kept. The yard was clean and free from offensive slops, heaps of garbage, or ashes.

During the year, a number of fire hazards were noted, reported to local authorities, and removed with their cooperation. The most common danger found in student lodging houses was the putting of waste paper and other inflammable materials near furnaces and stoves where a single spark could start a fire which might prove costly if not a catastrophe. The careless disposal of cigarette stumps and electric wires run under rugs or hung over nails are frequent potential sources of fires and risks to life. The latter risk has been reduced during the last few years but the former remains. Another dangerous practice is the storing of ashes in pasteboard or wooden containers. In Table XXIV are shown the hazards from improper storage of ashes as well as the number of houses lacking the protection afforded by fire extinguishers.

Table XXIV

Fire Hazards

	<u>Organized</u>	<u>Unorganized</u>	<u>Total</u>
Ashes stored in			
Metal containers	52	120	172
Wooden containers	24	82	106
Both	4	35	39
On the floor	14	20	34
Fire extinguishers need re- charging	18	45	63
Houses without fire exting- uishers	26	226	254

V. Local Cooperation

Through the years and particularly in 1935-1936 the administrations of Champaign and Urbana have been friendly, cooperative, and helpful. Their excellencies, the Mayors, have been very much interested in the welfare of students. The city attorneys, commissioners, and councilmen have given considerable time to the discussion of conditions affecting the health of the University population. The fire and police departments of the two towns have rendered a fine service in removing fire hazards and abating nuisances in the lodging houses of students. The cooperation of the local health officers has been of a very high grade both in efficiency and spirit of friendliness.

Local officials, like the local physicians, play a very important part in safeguarding the health of students. Many times during the year they have listened sympathetically and patiently to numerous observations upon local conditions affecting the welfare of students and have taken appropriate action. It is a pleasure to record their contribution

to public health and to express deep appreciation for their help.

ORAL EXAMINATIONS AND INTERVIEWS OF NURSES

As in previous years members of the Health Service staff on the request of the State Civil Service Commission have conducted examinations of nurses who were applicants for positions on the staff of the McKinley Hospital. Twenty-five such nurses were examined either at Chicago or Urbana.

REQUESTS FOR INFORMATION

Twenty-nine people have requested information on various aspects of public health and approximately 90 bulletins and pamphlets have been sent to them. Fourteen requests were also received for reprints of articles by members of the department or copies of forms used by the Health Service.

The members of the medical staff have filled 41 speaking engagements during the past year. Many of these were at nearby high schools and were on various phases of preventive medicine.

On request of the Bureau of Institutional Research the medical records of the members of the Class of 1935 were reviewed to determine their health status. This information was used to ascertain the relationship of certain factors in high school education, success in college, and morbidity.

HEALTH SERVICE OBJECTIVES

A student health service is a health center within an institution of higher learning. It is dedicated to the conception that constructive,

dynamic living in the best environment that modern science can provide is the rightful inheritance of every individual. To attain this ideal, it strives to teach the student, and by him also his community, the principles of hygiene and sanitation as they relate to him, his home, and his vocation. Its methods are the periodic physical examination, the personal conference, the demonstration of disease control, the maintenance of a sanitary environment, the cooperation with physical educators, instruction in hygiene, and the cultivation of an appreciative attitude toward hospitalization and public health administration.

It protects the University population against illness by early detection and isolation of persons exposed to or ill of communicable disease. It encourages and promotes immunization against smallpox, typhoid fever, and diphtheria. It sees that the sick student receives medical attention promptly in order to insure the least damage to vital organs and the least loss of time from classes. By advice as to exercise and right living and by referring the students to specially trained physicians, it endeavors to correct the defects in all subnormal students. As students know they can not conveniently be taken care of when sick at their lodging houses, they expect to go to the infirmary when ill enough to be in bed. Thus they get used to the hospital and learn its advantages. It will mean much to personal and public health to have our college graduates know that they can usually obtain better care for themselves and their families in a well conducted hospital than at home. Such knowledge will mean much to maternal and infant welfare, to diagnosis and treatment, and to the equipment and maintenance of hospitals.

The members of the Health Service staff not only teach hygiene in the classroom and in their conferences with students but try to show by example the methods employed to prevent disease. A case of diphtheria properly handled in a fraternity house will do more in a few minutes to teach the value of antitoxin, the use of the Schick test, the value of immunization with toxin-antitoxin, the danger of carriers, and the necessity of isolation than will several hours of didactic instruction. It presents a demonstration whose significance remains throughout life. It creates a respect for quarantine and promotes a spirit of cooperation in the prevention of disease.

The Health Service operates on the campus and in the student district by educating, creating public sentiment, and encouraging a demand for sanitary improvement. It cooperates with the local boards of health, public spirited citizens, and students in helping to bring about living conditions that make the college community one of the most attractive in which to live. To interest young men and women in the sanitary improvement of their surroundings is to prepare them for better citizenship by their enlistment in the promotion of public health.

It is not the purpose of a health service either to pauperize or paternalize students or to socialize medicine. Its aim is to put the college graduate and the physician shoulder to shoulder to mutual advantage in serving society, advancing scientific medicine, and making a better world.

THE HEALTH SERVICE AS A BAROMETER

For the last twenty years demands upon the Health Service have been a gauge of the development of the University quantitatively and quali-

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SECTION 4

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tatively. Every increase in registration has meant more physical examinations, advice, instruction in hygiene, conferences, classifications for Military, physical training, and athletics, and visits. Likewise, the erection of new buildings, additional research projects, and other enterprises of the University have resulted in more janitors and other employees to be examined prior to employment, the necessity of giving first aid to more injured, and lengthy conferences after accidents to make accurate reports of disability or recovery for the Compensation Committee and the Court of Claims.

In order to make the handling of University cars as safe as possible, its drivers are examined at least once every two years. Following the same policy of safety, Illinois now requires physical examinations of student applicants for motor vehicle permits.

Increases of enrollment in courses where food for human consumption is handled has led to corresponding increases in the number of immunizations and laboratory tests necessary to protect the University against disease carriers who might cause epidemics. For each student of the Advanced Corps who attended military camp in the summer additional inoculations and certificates of immunization were given. Rising tides of morbidity throughout the country have been reflected in the student body, and epidemics in remote parts of the state frequently have had repercussions on the campus.

It will be seen then that the work of the Health Service is largely determined by conditions over which it has little or no control. The functions of this department are not only a barometer of the growth of

the University but are a good indicator of the conditions in the homes and schools from which students come as well as of their behavior patterns and the sanitary conditions under which they live.

In editing the Twentieth Annual Report under the combined pressure of a large increase in registration, an addition in the enrollment in hygiene, and the threat of a rising morbidity in the student body, the Health Officer has had the able assistance of the Former Chief of the Student Staff, Mr. Milo J. Flening.

Respectfully submitted,

J. Howard Beard

J. Howard Beard, M. D.
University Health Officer

jhb-vef

TWENTIETH ANNUAL REPORT

APPENDIX A

APPENDIX A

Table I

TYPES OF MEDICAL ATTENTION TO STUDENTS AND EMPLOYEES

	<u>1934-1935</u>	<u>1935-1936</u>
Advice in case of illness	3920	3210
First aid in injury and infection	3188	3489
Sent to hospital	681	579
Referred to specialist	1909	2015
Urinalyses	8556	8841
Complete physical examination of students and employees	4461	4867

Table II

MONTHLY DISTRIBUTION OF VISITS

	<u>Student</u>		<u>Civil Service</u>		<u>Total</u>
	<u>Men</u>	<u>Women</u>	<u>Men</u>	<u>Women</u>	
July	829	574	133	2	1538
August	1275	443	149	1	1868
September	8956	2017	78	4	11,055
October	4220	1852	117	19	6208
November	3631	1337	73	16	5057
December	2614	1130	90	2	3836
January	3347	1183	73	4	4607
February	4207	1709	32	9	5957
March	4026	1865	75	19	5985
April	3259	1442	110	5	4816
May	3352	1305	221	6	4884
June	603	761	162	3	1529
Totals	40,319	15,618	1,313	90	57,340

Table III

CLASSIFICATION OF INJURIES TO CIVIL SERVICE EMPLOYEES FOR FIVE YEARS

	<u>1931-1932</u>	<u>1932-1933</u>	<u>1933-1934</u>	<u>1934-1935</u>	<u>1935-1936</u>
Abrasions				17	13
Amputations	2		1		
Accident, automobile (death)		1			
Avulsion			1		
Bites	1	2	1		
Blisters			1		
Broken bones	1			3	2

Table III (cont'd)

	<u>1931-1932</u>	<u>1932-1933</u>	<u>1933-1934</u>	<u>1934-1935</u>	<u>1935-1936</u>
Bruise			6	1	4
Burns, acid	4	1	3	6	8
other	10	2	9	4	2
Contusions	34	23	15	7	35
Concussion					1
Dislocations	1			25	
Excoriations			2		1
Finger nail torn loose		1	1	1	
Flashed eye	1	1			1
Foreign body, eye	15	11	11	11	10
Fractures	3	6	5	5	
Gas inhaled		1		1	
Heat stroke					1
Hernia	1		1	2	6
Incisions					
Infections	12	3	5	2	
Inflammations			1	3	1
Injuries	8		7	8	4
Lacerations				33	27
Lacerations, incisions, abrasions, and puncture wound	49	48	51		
Muscle soreness			2		1
Pain				1	
Phlebitis			1		
Poisoning			1		
Poison ivy	2				
Puncture wound				5	6
Rabies virus on skin				1	
Rupture varicosity			1		
Sliver and splinter	2	3	9	4	5
Sprain and strain	14	12	10	14	21
Torn ligament	1	1			

Table IV

LABORATORY EXAMINATIONS

	<u>Positive</u>	<u>Negative</u>	<u>Total</u>
Widal test for typhoid fever	30	1474	1504
Feces for typhoid fever	0	87	87
Feces urine for typhoid fever	0	123	123
Sputum for tuberculosis	1	50	51
Kahn test for syphilis	3	104	107
Throat cultures, diphtheria	8	226	234

Table IV (cont'd)

	<u>Positive</u>	<u>Negative</u>	<u>Total</u>
Smear, Vincent's Angina	23	58	81
Agglutination test for Undulant fever	0	7	7
Pus for gonorrhoea	9	22	31
Feces: no endamoeba histolytica	0	4	4
Malaria blood smear	1	3	4
Eye cultures	0	8	8
Throat cultures showing streptococci	4	0	4
X-ray examinations			26
Blood examinations (white cells)			21
Basal Metabolism Test			31

Table V

CASES CARED FOR AT MCKINLEY HOSPITAL

	<u>Communicable</u>		<u>Non-Communicable</u>		<u>Total</u>	
	<u>Cases</u>	<u>Days</u>	<u>Cases</u>	<u>Days</u>	<u>Cases</u>	<u>Days</u>
July	0	0	0	0	0	0
August	0	0	0	0	0	0
September	2	9	128	351	130	360
October	3	38	288	888	291	926
November	4	99	272	815	276	914
December	2	59	192	719	194	778
January	12	165	236	883	248	1048
February	8	153	393	1356	401	1509
March	12	195	415	1313	427	1508
April	4	98	305	1100	309	1198
May	13	146	206	735	219	881
June	0	31*	11	53	11	84
Total	60	993	2446	8213	2506	9206

*Resulting from cases of previous month.

Table VI

AVERAGE HOSPITAL STAY

Percentage of Students Using Hospitals

<u>Year</u>	<u>Average Hospital Stay</u>	<u>Percent of Students Using Hospitals</u>
1931-1932	4.07	15.8
1932-1933	4.1	11.9
1933-1934	3.91	15.3
1934-1935	3.65	24.6
1935-1936	3.89	24.3

Table VII

CASES CARED FOR AT MCKINLEY HOSPITAL

<u>Disease</u>	<u>1933-1934</u>		<u>1934-1935</u>		<u>1935-1936</u>	
	<u>Cases</u>	<u>Days</u>	<u>Cases</u>	<u>Days</u>	<u>Cases</u>	<u>Days</u>
Chickenpox	10	104	3	33	10	106
Diphtheria	2	21	1	13	0	0
Influenza	250	761	599	2050	533	1804
Malaria	4	15	0	0	0	0
Measles	40	164	24	124	2	8
Mumps	3	30	7	72	20	180
Pneumonia	0	0	0	0	6	103
Rubella	150	496	342	1179	0	0
Scarlet fever	16	293	19	498	28	699
Total	475	1884	995	3969	599	2900

Table VIII

ELEMENTARY HYGIENE

	<u>Number of Students</u>	<u>Number of Sections</u>
Hygiene V		
Men, First Semester	1108	20
Men, Second Semester	1127	20
Hygiene II		
Women, First Semester	430	8
Women, Second Semester	335	8

ADVANCED HYGIENE

	<u>Men</u>	<u>Women</u>	<u>Total</u>
Hygiene X			
First Semester	36	14	50
Second Semester	86	12	98

Table IX

FAMILY HISTORY OF INHERITABLE DISEASES

	1938		1939					
	Men	Women	Men		Women		Total	
	%	%	No.	%	No.	%	No.	%
Apoplexy	.89	2.13	32	.97	37	2.71	69	1.48
Cancer	9.04	14.85	298	9.04	181	13.26	479	10.27
Goiter	5.02	8.	162	4.91	126	9.23	288	6.18
Mental dis- turbances	.76	1.29	28	.85	20	1.46	48	1.03
Diabetes	4.32	9.75	187	5.67	102	7.47	289	6.2
Epilepsy	.56	.53	7	.21	2	.15	9	.19
Kidney dis- eases	2.66	5	83	2.52	48	3.52	131	2.81
Tuberculosis	5.85	9.75	149	4.52	123	9.01	172	3.69

Table X

INJURIES

	1938		1939					
	Men	Women	Men		Women		Total	
	%	%	No.	%	No.	%	No.	%
Head	5.58	2.44	156	4.73	23	1.68	179	3.84
Chest	4.12	1.75	124	3.76	15	1.10	139	2.98
Abdomen	.17	.23	35	1.06	1	.07	36	.77
Arm	14.96	6.01	390	11.83	70	5.13	460	9.87
Leg	8.71	3.66	218	6.61	65	4.76	283	6.07
Others	2.78	2.13	77	2.34	45	3.30	122	2.62

Table XI

OPERATIONS

	1938		1939					
	Men	Women	Men		Women		Total	
	%	%	No.	%	No.	%	No.	%
Head								
Tonsils	52.26	61.30	1441	43.71	717	52.53	2158	46.29
Adnoids	38.16	26.35	1173	35.58	414	30.33	1587	34.04
Others	4.58	3.19	128	3.88	72	5.27	200	4.29
Chest	.39	0	25	.76	4	.29	29	.62
Abdomen	9.14	12.11	234	7.1	145	10.62	379	8.13
Circumcision	25.33		643	19.5			643	13.79
Others	3.19	1.59	138	4.19	28	2.05	166	3.56

Table XII

USE OF TEA, COFFEE, AND TOBACCO

	1938		1939					
	Men	Women	Men		Women		Total	
	%	%	No.	%	No.	%	No.	%
Coffee	46.31	54.61	1524	46.22	658	48.2	2182	46.8
Tea	15.84	49.29	688	20.87	582	42.64	1270	27.24
Tobacco	35.31	34.27	1185	35.94	402	29.45	1593	34.17
None of three	31.85	22.08	843	25.57	363	26.59	1206	25.87

Table XIII

SLEEPING HABITS

	1938		1939					
	Men	Women	Men		Women		Total	
	%	%	No.	%	No.	%	No.	%
Under 6 hours	.16	.53	0	0	3	.22	3	.06
6 to 7 hours	11.17	13.32	290	8.8	182	13.33	472	10.12
8 to 9 hours	82.97	79.97	2837	86.05	1126	82.49	3963	85.01
10 hours and over	5.35	7.	170	5.16	54	3.96	224	4.80

Table XIV

STUDENTS GIVING HISTORIES OF TYPHOID FEVER

Class of 1927	5.15	Class of 1934	2.09
Class of 1928	4.86	Class of 1935	2.08
Class of 1929	4.08	Class of 1936	2.21
Class of 1930	3.72	Class of 1937	2.28
Class of 1931	2.79	Class of 1938	2.57
Class of 1932	2.83	Class of 1939	1.46
Class of 1933	3.02		

Table XV

RELATIVE OCCURRENCE OF CERTAIN DISEASES IN HISTORIES OF THE CLASS OF 1939

	1938		1939					
	Men	Women	Men		Women		Total	
	%	%	No.	%	No.	%	No.	%
Appendicitis	9.04	13.79	260	7.89	152	11.14	412	8.84
Asthma	1.33	1.22	69	2.09	82	6.01	151	3.24
Chickenpox	55.98	72.05	1810	54.9	968	70.92	2778	59.59
Chorea	.06	.23	4	.12	7	.51	11	.24

Table XV (cont'd)

	1938		1939					
	Men	Women	Men		Women		Total	
	%	%	No.	%	No.	%	No.	%
Diabetes	.17	.23	8	.24	2	.15	10	.21
Diphtheria	7.41	5.56	218	6.61	82	6.01	300	6.44
Diphtheria immunization	13.16	12.88	412	12.5	183	13.41	595	12.76
Discharging ear	4.15	6.13	119	3.61	93	6.81	212	4.55
Dysentery	.38	.38	17	.52	6	.44	23	.49
Epilepsy	.03	0	2	.06	2	.15	4	.86
Gonorrhoea	.23	0	13	.40	0	0	13	.28
Heart trouble	2.29	2.74	82	2.49	39	2.86	121	2.6
Hay fever	4.92	4.65	222	6.73	71	5.20	293	6.28
Hernia	2.85	.38	77	2.34	5	.37	82	1.76
Infantile paralysis	1.06	.77	27	.82	11	.81	38	.82
Influenza	32.11	28.33	737	22.35	304	22.27	1041	22.35
Kidney trouble	1.23	2.58	41	1.24	38	2.78	79	1.69
Malaria	3.02	2.13	77	2.34	30	22.	107	2.30
Measles	76.93	88.5	2186	66.3	1162	85.13	3348	71.81
German measles	18.92	24.45	770	23.35	470	34.43	1240	26.60
Meningitis	.09	.08	7	.02	2	.15	9	.19
Mumps	57.68	56.36	1584	48.04	737	54.	2321	49.79
Nervous breakdown	.43	1.84	20	.61	23	1.68	43	.92
Pleurisy	1.37	2.21	50	1.52	35	2.56	85	1.82
Pneumonia	10.21	9.14	265	8.04	138	10.11	403	8.64
Rheumatism	2.49	2.59	45	1.36	33	2.42	78	1.67
Scarlet fever	17.32	17.91	441	13.38	247	18.10	688	14.76
Sinusitis	4.36	3.73	116	3.52	41	3.	157	3.37
Smallpox	6.02	2.91	84	2.55	33	2.42	117	2.51
Smallpox vaccination	82.81	85.92	2323	70.46	1103	80.81	3426	73.49
Syphilis	.03	0	1	.03	0	0	1	.02
Trachoma	.03	.08	2	.06	0	0	2	.04
Tuberculosis	.27	.15	8	.24	4	.29	12	.26
Typhoid fever	3.22	1.07	54	1.64	14	1.03	68	1.46
Typhoid inoculation	19.55	7.08	466	14.13	89	6.52	555	11.90
Undulant fever	.06	.38	4	.12	1	.07	5	.11
Whooping cough	52.29	66.49	1471	44.62	873	63.96	2344	50.28
Others	.13	0	87	2.64	0	0	87	1.87

Table XVI

GENERAL DEVELOPMENT

	1938		1939				Total	
	Men	Women	Men		Women		No.	%
	%	%	No.	%	No.	%		
Excellent	.83	1.68	27	.82	54	3.96	81	1.74
Good	84.77	87.20	2623	79.56	1197	87.69	3820	81.94
Fair	13.36	10.74	635	19.25	114	8.35	749	10.07
Poor	1.03	.38	12	.36	0		12	.26

BUILD

Stocky	11.97	8.91	537	16.29	145	76.56	682	14.63
Medium	60.67	59.79	2155	65.36	836	61.25	2991	64.16
Slender	25.76	31.3	604	18.32	384	28.13	988	21.19

Table XVII

COLOR OF EYES

	1938		1939				Total	
	Men	Women	Men		Women		No.	%
	%	%	No.	%	No.	%		
Blue	40.19	35.19	1446	43.86	497	36.41	1943	41.68
Grey	3.39	8.68	187	5.67	82	6.01	269	5.77
Greenish	6.88	11.88	116	3.52	164	12.01	280	6.01
Hazel	12.03	10.21	280	8.49	167	12.23	447	9.59
Brown	36.84	32.14	1237	37.52	439	32.16	1676	35.95
Dark	.66	1.9	31	.94	16	1.17	47	1.01

Table XVIII

COLOR OF HAIR

	1938		1939				Total	
	Men	Women	Men		Women		No.	%
	%	%	No.	%	No.	%		
Flaxen	6.72	5.56	288	8.74	90	6.6	378	8.11
Reddish	2.93	3.27	113	3.43	51	3.74	164	3.52
Light brown	21.7	28.56	757	22.96	373	27.33	1130	24.24
Brown	35.64	33.95	1671	50.68	493	36.12	2164	46.42
Dark brown	12.11	25.44	312	9.46	311	22.78	623	13.36
Black	10.84	3.20	148	4.49	44	3.22	192	4.12
Grey	.06	0	8	.24	3	.22	11	.24

Table XIX

TEETH

	1938		1939					
	Men	Women	Men		Women		Total	
	%	%	No.	%	No.	%	No.	%
Cavities	21.64	7.01	693	21.20	95	6.96	788	16.9
Absent	35.87	23.	1108	33.61	394	28.86	1502	32.22
Need cleaning	27.39	4.19	474	14.38	34	2.49	508	10.9
Diseased gums	.30	2.06	36	1.09	16	1.17	52	1.12
No cavities								
none absent	35.34	72.12	391	11.86	870	63.74	1261	27.05
Teeth devitalized	4.06	.84	64	1.94	6	.44	70	1.5

Table XX

ABNORMALITIES OF THE HEART

	1938		1939					
	Men	Women	Men		Women		Total	
	%	%	No.	%	No.	%	No.	%
Enlarged	0	0	0	0	0	0	0	0
Irregular	.5	.46	8	.24	8	.59	16	.34
Murmur								
Aortic	.03	0	25	.76	2	.15	27	.58
Mitral	.27	1.07	2	.06	7	.51	9	.19
Systolic	.93	.46	30	.9	5	.37	35	.75

Table XXI

THYROID ENLARGEMENT

	1938		1939					
	Men	Women	Men		Women		Total	
	%	%	No.	%	No.	%	No.	%
Enlarged	1.	1.52						
Slight			12	.36	201	14.73	213	4.57
Moderate			0	0	23	1.68	23	.49
Marked			0	0	8	.59	8	.17
Evidence of toxicity	.2	.46	0	0	8	.59	8	.17

Table XXII

CHEST AND LUNGS

	1938		1939				Total	
	Men	Women	Men		Women		No.	%
	%	%	No.	%	No.	%	No.	%
Chest, abnormal	1.73	5.1	23	.7	59	4.32	82	1.76
Lungs, abnormal	.7	.23	22	.67	0	0	22	.47

Table XXIII

INCIDENCE OF ENLARGED LYMPH GLANDS

	1938		1939				Total	
	Men	Women	Men		Women		No.	%
	%	%	No.	%	No.	%	No.	%
Epitrochlear	1.66	5.56	144	4.37	27	1.9	170	3.65
Axillary	11.77	1.29	342	10.37	10	.73	352	7.55
Cervical	14.86	30.39	328	9.95	310	22.71	638	13.69
Inguinal	32.85	5.25	811	24.6	77	5.64	888	19.05

Table XXIV

CONDITION OF ABDOMINAL WALLS

	1938		1939				Total	
	Men	Women	Men		Women		No.	%
	%	%	No.	%	No.	%	No.	%
Abdomen								
Rigid	.06	.46	0	0	4	.29	4	.09
Relaxed	.27	.23	2	.06	4	.29	6	.13
Hernia	1.16	0	25	.76	1	.07	26	.56

Table XXV

HERNIA IN MEN

Class of 1928	1.40	Class of 1934	1.30
Class of 1929	1.51	Class of 1935	1.71
Class of 1930	1.35	Class of 1936	.71
Class of 1931	1.26	Class of 1937	1.19
Class of 1932	1.41	Class of 1938	1.16
Class of 1933	1.74	Class of 1939	.76

Table XXVI

GENITO-URINARY ORGANS

	1938	1939	
	%	No.	%
Testes			
Atrophied	.66	7	.21
Enlarged	.03	3	.09
Hydrocele	.17	30	.91
Undescended	.43	1	.03
Varicocele	6.18	155	4.7
Circumcision	36.84	1242	37.67

Table XXVII

CRYPTORCHIDISM

Class of 1928	.77	Class of 1934	.70
Class of 1929	.75	Class of 1935	.48
Class of 1930	.71	Class of 1936	.28
Class of 1931	.38	Class of 1937	.32
Class of 1932	.60	Class of 1938	.43
Class of 1933	.32	Class of 1939	.03

Table XXVIII

URINALYSIS

	1938		1939				Total	
	Men	Women	Men		Women		No.	%
	%	%	No.	%	No.	%	No.	%
Acid	90.82	66.72	2784	84.44	1037	75.97	3821	81.96
Alkaline	9.18	22.39	319	9.68	257	18.83	576	12.36
Neutral	0	2.51	186	5.64	71	5.20	257	5.51
Sugar	.86	2.13	14	.42	8	.59	22	.47
Albumin	4.59	3.66	163	4.94	64	4.69	127	2.72

Table XXIX

GLYCOSURIA AND ALBUMINURIA OVER A PERIOD OF YEARS

	<u>Sugar</u>		<u>Albumin</u>	
	<u>Men</u>	<u>Women</u>	<u>Men</u>	<u>Women</u>
	<u>%</u>	<u>%</u>	<u>%</u>	<u>%</u>
Class of 1927	.04	.07	7.80	4.3
Class of 1928	.84	.41	3.10	.49
Class of 1929	.12	.07	3.75	.49
Class of 1930	.19	.60	7.33	4.4
Class of 1931	.58	1.86	5.71	2.75
Class of 1932	.06	.48	3.6	2.1
Class of 1933	.09	.85	2.62	1.44
Class of 1934	.21	.79	5.65	2.97
Class of 1935	.22	1.29	5.40	4.2
Class of 1936	.52	1.19	6.7	2.87
Class of 1937	.52	0	4.97	1.15
Class of 1938	.86	2.13	4.59	3.66
Class of 1939	.42	.59	4.94	4.69

Table XXX

FOOT ABNORMALITIES

	1938		1939				Total	
	<u>Men</u>	<u>Women</u>	<u>Men</u>	<u>Women</u>	<u>Men</u>	<u>Women</u>	<u>Men</u>	<u>Women</u>
	<u>%</u>	<u>%</u>	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>
Long arches								
1st degree	15.82	25.21	393	11.92	439	32.16	832	17.85
2nd degree	6.98	7.84	182	5.52	96	7.03	278	5.96
3rd degree	2.36	1.68	81	2.46	27	1.98	108	2.32
Anterior arches	18.98	20.49	477	14.47	302	7.47	779	16.71
Abnormalities of feet			73	2.21	30	2.2	103	2.21

Table XXXI

FOOT ABNORMALITIES OVER A PERIOD OF YEARS

	<u>Long Arches</u>						<u>Anterior Arches</u>	
	<u>1st Degree</u>		<u>2nd Degree</u>		<u>3rd Degree</u>		<u>Men</u>	<u>Women</u>
	<u>Men</u>	<u>Women</u>	<u>Men</u>	<u>Women</u>	<u>Men</u>	<u>Women</u>		
	<u>%</u>	<u>%</u>	<u>%</u>	<u>%</u>	<u>%</u>	<u>%</u>	<u>%</u>	<u>%</u>
Class of 1930	16.49	33.63	14.41	14.47	4.8	5.27	24.79	45.3
Class of 1931	15.82	29.78	11.35	33.22	3.28	11.	20.25	23.18
Class of 1932	18.4	17.5	10.9	27.8	2.5	19.8	27.1	27.5
Class of 1933	9.99	17.3	7.74	17.17	1.33	5.94	15.23	42.17

Table XXXI (cont'd)

	<u>Long Arches</u>						<u>Anterior Arches</u>	
	<u>1st Degree</u>		<u>2nd Degree</u>		<u>3rd Degree</u>		<u>Men</u>	<u>Women</u>
	<u>Men</u>	<u>Women</u>	<u>Men</u>	<u>Women</u>	<u>Men</u>	<u>Women</u>		
	%	%	%	%	%	%	%	
Class of 1934	19.5	11.68	9.73	9.3	2.03	1.51	22.31	28.41
Class of 1935	15.9	19.2	9.5	8.7	1.08	1.6	19.6	35.9
Class of 1936	18.3	36.4	9.5	10.	.99	2.18	28.3	29.
Class of 1937	14.3	32.9	7.1	12.3	2.4	2.72	22.2	34.
Class of 1938	15.82	25.21	6.98	7.84	2.36	1.68	18.98	20.49
Class of 1939	11.92	32.16	5.52	7.03	2.46	1.98	14.47	7.47

Table XXXII

SPINE ABNORMALITIES

	1938		1939					
	<u>Men</u>	<u>Women</u>	<u>Men</u>		<u>Women</u>		<u>Total</u>	
	%	%	No.	%	No.	%	No.	%
Kyphosis	1.99	.23	47	1.43	17	1.25	64	1.37
Lordosis	7.11	1.14	119	3.51	70	5.13	189	4.05
Scoliosis	4.85	1.68	86	2.61	67	4.91	153	3.28

Table XXXIII

NOSE ABNORMALITIES

	1938		1939					
	<u>Men</u>	<u>Women</u>	<u>Men</u>		<u>Women</u>		<u>Total</u>	
	%	%	No.	%	No.	%	No.	%
Spur	6.32	.69	153	4.64	2	.15	155	3.32
Deviated septum	14.09	10.89	577	17.50	131	9.6	708	15.19
Atrophied	.1	.08	9	.27	0	0	9	.19
Hypertrophy	4.45	15.23	233	7.07	28	2.05	261	5.6

Table XXXIV

THROAT ABNORMALITIES

	1938		1939				Total	
	Men	Women	Men		Women		No.	%
	%	%	No.	%	No.	%	No.	%
Tonsils								
Absent	52.19	57.19	1622	49.2	768	56.26	2390	51.27
Tags	6.48	14.16	255	7.73	220	16.12	475	10.19
Pathological	12.73	11.58	466	14.13	148	10.84	614	13.17

Table XXXV

PERCENTAGE OF STUDENTS WITH TONSILS REMOVED OVER A PERIOD OF YEARS

	Men	Women		Men	Women
Class of 1928	20.3	29.8	Class of 1934	42.41	41.1
Class of 1929	28.78	33.77	Class of 1935	45.4	52.2
Class of 1930	30.76	38.3	Class of 1936	44.	50.1
Class of 1931	35.77	42.42	Class of 1937	45.3	52.1
Class of 1932	37.3	37.2	Class of 1938	52.19	57.19
Class of 1933	42.48	5.56	Class of 1939	49.2	56.26

Table XXXVI

EARS

	1938		1939				Total	
	Men	Women	Men		Women		No.	%
	%	%	No.	%	No.	%	No.	%
Drum retracted	1.46	1.45	76	3.2	4	.29	80	.17
Perforated	.43	.53	4	.12	0	0	4	.09
Serumen	13.43	14.17	247	7.49	137	10.04	384	8.24
Hearing abnormal	.13	1.37	17	.52	5	.37	22	.47

TABLE 1

STATISTICAL DATA



TABLE 2

STATISTICAL DATA



TABLE 3

STAT



Table XXXVII

EYES

	1938		1939				Total	
	Men	Women	Men		Women		No.	%
	%	%	No.	%	No.	%	No.	%
Abnormal								
Color vision	1.06	0	6	.19	0	0	6	.13
Manifest astigmatism	56.68	31.91	1755	53.2	338	24.76	2093	44.89
Refraction								
O.D. only	6.35	7.24	321	9.73	112	8.2	433	9.28
O.S. only	7.71	6.93	370	11.52	101	8.13	471	10.10
Both O.D. and O.S.	32.15	29.32	886	26.87	484	35.3	1370	29.38
Corrected with glasses	7.81	28.1	280	8.49	475	34.8	755	16.19

TWENTIETH ANNUAL REPORT

APPENDIX B

APPENDIX B

Table I

SUMMARY OF MEDICAL HISTORIES

	<u>Men</u>	<u>Women</u>	<u>Class of '39</u> <u>Total</u>	<u>Class of '38</u> <u>Total</u>
Total number examined	3297	1365	4662	4321
Total number reexamined	2336	1058	3394	3309
Inheritable diseases				
Apoplexy (family history)	32	37	69	55
Cancer (" ")	298	181	479	467
Goiter (" ")	162	126	288	256
Mental disturbances (family history)	28	20	48	40
Diabetes (family history)	187	102	289	258
Epilepsy (" ")	7	2	9	24
Kidney disease (family history)	83	48	131	148
Tuberculosis (family history)	149	123	272	304
Birthplace				
Illinois	2447	997	3444	3115
Elsewhere	850	368	1218	1206
Work for self-support during college	1468	287	1755	1904
Use laxatives frequently	123	123	246	235
Sleep.				
Under 6 hours	0	3	3	12
6 - 7 hours	290	182	472	521
8 - 9 hours	2837	1126	3963	3536
10 hours and over	170	54	224	253
Habits				
Coffee	1524	658	2182	2110
Tea	688	582	1270	1210
Tobacco	1185	408	1593	1512
None of the three	843	363	1206	1248
Age started smoking				
Younger than 10 years	8	0	8	4
10 - 15 years	110	64	174	123
15 - 20 years	961	310	1271	1337
20 - 25 years	93	17	110	88
Over 25 years	8	3	11	8
Meals per day				
One	0	4	4	0
Two	54	61	115	113
Three	3218	1300	4518	4214
More than three	25	0	25	4

Table I--Continued

	<u>Men</u>	<u>Women</u>	<u>Class of '39</u> <u>Total</u>	<u>Class of '38</u> <u>Total</u>
Weight the past year				
Gained	1270	339	1609	1429
Lost	324	241	565	581
Stationary	1703	785	2488	2407
Easily fatigued	116	218	334	334
Subject to frequent colds in				
Nose	256	246	502	731
Throat	99	94	193	237
Lungs	26	18	44	32
When reading, bothered with				
Headaches	135	132	267	302
Blurring of vision	125	33	158	170
Burning of eyes	131	56	187	235
Squinting of eyes	75	46	121	105
Watering of eyes	102	29	131	141
Twitching of eyes	71	26	97	104
Persistently worry	114	72	186	173
Have the "blues"	122	115	237	314
Injuries				
Head	156	23	179	200
Chest	124	15	139	147
Abdomen	35	1	36	8
Arm	390	70	460	530
Leg	218	65	283	310
Others	77	45	122	111
Operations				
Head				
Tonsils	1441	717	2158	2377
Adenoids	1173	414	1587	1494
Others	128	72	200	180
Chest	25	4	29	12
Abdomen	234	145	379	434
Circumcision	643		643	762
Others	138	28	166	117
Arches of feet painful	133	70	203	158
Possible reasons for not taking				
Physical education	136	109	245	220
Military science	184		184	151
Diseases had				
Appendicitis	260	152	412	453
Asthma	69	82	151	57
Chickenpox	1810	968	2778	2630
Chorea	4	7	11	5
Diabetes	8	2	10	8
Diphtheria	218	82	300	296

Table I--Continued

	<u>Men</u>	<u>Women</u>	<u>Class of '39</u> <u>Total</u>	<u>Class of '38</u> <u>Total</u>
Diseases had (cont'd)				
Diphtheria immunization	412	183	595	575
Discharging ear	119	93	212	206
Dysentery	17	6	23	16
Epilepsy	2	2	4	1
Gonorrhoea	13	0	13	7
Heart trouble	82	39	121	115
Hay fever	222	71	293	209
Hernia (rupture)	77	5	82	90
Infantile paralysis	27	11	38	42
Influenza	737	304	1041	1341
Kidney trouble	41	38	79	71
Malaria	77	30	107	119
Measles	2186	1162	3348	3465
German measles	770	470	1240	890
Meningitis	7	2	9	4
Mumps	1584	737	2321	2485
Nervous breakdown	20	23	43	37
Pleurisy	50	35	85	71
Pneumonia	265	138	403	426
Rheumatism	45	33	78	109
Scarlet fever	441	247	688	758
Sinusitis	116	41	157	181
Smallpox	84	33	117	219
Smallpox vaccination	2323	1103	3426	3609
Syphilis	1	0	1	1
Trachoma	2	0	2	2
Tuberculosis	8	4	12	10
Typhoid fever	54	14	68	111
Typhoid inoculation	466	89	555	681
Undulant fever	4	1	5	6
Whooping cough	1471	873	2344	2446
Others	87	0	87	4

Table II

SUMMARY OF PHYSICAL EXAMINATIONS

	<u>Men</u>	<u>Women</u>	<u>Class of '39</u> <u>Total</u>	<u>Class of '38</u> <u>Total</u>
Color of hair				
Flaxen	288	90	378	275
Reddish	113	51	164	131
Light brown	757	373	1130	1028
Brown	1671	493	2164	1518
Dark brown	312	311	623	999
Black	148	44	192	368
Gray	8	3	11	2

Table II--Continued

	<u>Men</u>	<u>Women</u>	<u>Class of '39</u> <u>Total</u>	<u>Class of '38</u> <u>Total</u>
Color of Eyes				
Blue	1446	497	1943	1671
Gray	187	82	269	216
Greenish	116	164	280	363
Hazel	280	167	447	496
Brown	1237	439	1676	1530
Dark	31	16	47	45
Vision abnormal				
Without glasses				
Both eyes	886	484	1370	1352
Right eye (O.D.)	321	112	433	286
Left eye (O.S.)	370	101	471	323
Corrected with glasses	280	475	755	604
Color vision abnormal	6	0	6	32
Manifest astigmatism	1755	338	2093	2124
Ears				
Both ears				
Cerumen	247	137	384	353
Drum retracted	76	4	80	43
Perforation	4	0	4	5
Hearing abnormal	17	5	22	12
Right ear				
Cerumen	87	67	154	126
Drum retracted	13	1	14	6
Perforation	1	1	2	7
Hearing abnormal	0	1	1	7
Left ear				
Cerumen	80	40	120	111
Drum retracted	8	6	14	14
Perforation	2	0	2	8
Hearing abnormal	3	3	6	2
Nose				
Spur	153	2	155	199
Deviation	577	131	708	567
Chronic hypertrophy	233	28	261	334
Atrophy	9	0	9	4
Tonsils				
Removed	1622	768	2390	2321
Tags	255	220	475	381
Pathological	466	148	614	535
Teeth				
No cavities or absent	391	870	1261	2010
Cavities	693	95	788	743
Absent	1108	394	1502	1381
Need cleaning	474	34	508	879
Devitalized	64	6	70	133
Gums diseased	36	16	52	36

Table II--Continued

	<u>Men</u>	<u>Women</u>	<u>Class of '39</u> <u>Total</u>	<u>Class of '38</u> <u>Total</u>
Weight	*			
Below 100		78	78	104
100-115		487	487	474
116-130		466	466	436
131-145		212	212	187
146-160		84	84	76
161-175		19	19	22
176-190		11	11	5
191 and over		8	8	4
Height, below 50	*	0	0	1
50-59		35	35	32
60-62		324	324	297
63-65		682	682	609
66-68		295	295	340
69-71		29	29	31
72 and over		0	0	3
General Development				
Excellent	27	54	81	47
Good	2623	1197	3820	3695
Fair	635	114	749	543
Poor	12	0	12	36
Build				
Stocky	537	145	682	477
Medium	2155	836	2991	2610
Slender	604	384	988	1186
Skin				
Acne	1007	283	1290	1246
Mycosis	219	166	385	369
Other skin diseases	37	13	50	25
Vaccination scar				
Arm	2776	777	3553	3381
Leg	14	332	346	294
None	507	256	763	646
Reflexes				
Patellar	31	13	44	47
Romberg	9	2	11	19
Pupillary	9	4	13	52
Thyroid				
Enlarged				50
Slight	12	201	213	
Moderate	0	23	23	
Marked	0	4	4	
Evidence of toxicity	0	8	8	12
Lymph glands				
Cervical	328	310	638	846
Axillary	342	10	352	371
Inguinal	811	77	888	1057
Epitrochlear	144	26	170	123

*See pages 109 to 111.

Table II--Continued

	<u>Men</u>	<u>Women</u>	<u>Class of '39</u> <u>Total</u>	<u>Class of '38</u> <u>Total</u>
Chest, abnormal	23	59	82	119
Lungs, abnormal	22	0	22	24
Heart				
Irregular pulse	8	8	16	21
Enlarged	0	0	0	0
Murmur				
Aortic	25	2	27	1
Mitral	2	7	9	22
Systolic	30	5	35	34
Abdomen				
Rigid	0	4	4	8
Relaxed	2	4	6	11
Penis, circuncised	1242			1108
Testes, atrophied	7			20
Enlarged	3			1
Undescended	30			13
Hydrocele	1			5
Varicocele	155			186
Menses				
Regular		1142		1067
Irregular		223		245
Pain, severe		272		344
slight		374		286
Hernia, present	25	1	26	35
Hemorrhoids, present	29	0	29	19
Vertebral column				
Kyphosis (stooped)	47	17	64	63
Lordosis (swayback)	119	70	189	229
Scoliosis (curvature)	86	67	153	167
Incorrect posture	193	93	286	284
Restricted flexibility	1	9	10	14
Flat feet				
Long arches				
1st degree	393	439	832	807
2nd degree	182	96	278	313
3rd degree	81	27	108	92
Anterior arches	477	302	779	840
Abnormalities of feet	73	30	103	84
Physical defects				
Amputations	24	0	24	12
Atrophies	14	0	14	16
Deformities	47	6	53	46
Unusual scars	232	34	266	312
Others	41	0	41	72
Urine				
Acid	2784	1037	3821	3608
Alkaline	319	257	576	570
Neutral	186	71	257	33

Table II--Continued

	<u>Men</u>	<u>Women</u>	<u>Class of '39</u> <u>Total</u>	<u>Class of '38</u> <u>Total</u>
Urine (cont'd)				
Albumin				185
Persistent	34	9	43	
Functional	129	55	184	
Sugar				54
Diabetic	2	0	2	
Transient	12	8	20	

Table III

CLASSIFIED SUMMARY OF PHYSICAL EXAMINATION RESULTS

	<u>MEN</u>			<u>WOMEN</u>		
	<u>Urban</u>	<u>Rural</u>	<u>Out-St.</u>	<u>Urban</u>	<u>Rural</u>	<u>Out-St.</u>
Total number examined	2181	719	397	876	306	183
Total number reexamined	1530	542	264	709	252	97
Inheritable diseases						
Apoplexy (family history)	15	12	5	17	16	4
Cancer (" ")	178	86	34	100	53	28
Goiter (" ")	118	38	6	76	37	13
Mental disturbances (family history)	13	8	7	12	5	3
Diabetes (family history)	139	34	14	71	20	11
Epilepsy (" ")	6	0	1	2	0	0
Kidney disease (family history)	53	19	11	34	14	10
Tuberculosis (family history)	100	34	15	90	23	10
Birthplace						
Illinois	1764	651	32	690	277	30
Elsewhere	417	68	365	186	29	153
Work for self-support during college	926	357	185	170	103	14
Use laxatives frequently	76	34	13	83	30	10
Sleep, under 6 hours	0	0	0	0	1	2
6 - 7 hours	183	76	31	103	47	32
8 - 9 hours	1887	602	348	732	247	147
10 hours and over	111	41	18	41	11	2
Habits						
Coffee	963	276	285	440	125	93
Tea	495	107	86	398	87	97
Tobacco	610	235	140	284	48	76
None of the three	499	226	118	213	133	17

Table III--Continued

	<u>MEN</u>			<u>WOMEN</u>		
	<u>Urban</u>	<u>Rural</u>	<u>Out-St.</u>	<u>Urban</u>	<u>Rural</u>	<u>Out-St.</u>
Age started smoking						
Younger than 10 years	5	3	0	0	0	0
10 - 15 years	74	14	22	45	7	12
15 - 20 years	679	194	88	213	39	58
20 - 25 years	51	22	20	9	2	6
Over 25 years	1	2	5	3	0	0
Meals per day						
One	0	0	0	3	1	0
Two	37	2	15	38	18	5
Three	2120	717	381	835	287	178
More than three	24	0	1	0	0	0
Weight the past year						
Gained	841	286	143	225	74	40
Lost	216	77	31	151	50	40
Stationary	1124	356	223	500	182	103
Easily fatigued	78	19	19	141	57	20
Subject to frequent colds						
Nose	149	74	33	153	67	26
Throat	70	22	7	50	30	14
Lungs	18	8	0	12	3	3
When reading, bothered with						
Headaches	95	31	9	89	36	7
Blurring of vision	80	32	13	29	2	2
Burning of eyes	77	41	13	32	18	6
Squinting of eyes	59	12	4	23	18	5
Watering of eyes	71	18	13	17	9	3
Twitching of eyes	55	13	3	22	4	0
Persistently worry	73	27	14	53	13	6
Have the "blues"	68	31	23	82	25	8
Injuries						
Head	128	23	5	11	9	3
Chest	80	43	1	13	2	0
Abdomen	32	2	1	1	0	0
Arm	258	82	50	56	14	0
Leg	156	39	23	42	15	8
Others	61	6	10	33	11	1
Operations						
Head						
Tonsils	1040	263	138	477	140	100
Adenoias	883	190	100	277	89	48
Others	95	15	18	55	12	5
Chest	25	0	0	0	3	1
Abdomen	163	51	20	95	27	23
Circumcision	498	57	88			
Others	84	27	27	18	4	6

Table III--Continued

	<u>MEN</u>			<u>WOMEN</u>		
	<u>Urban</u>	<u>Rural</u>	<u>Out-St.</u>	<u>Urban</u>	<u>Rural</u>	<u>Out-St.</u>
Arches of feet painful	82	36	15	41	24	5
Possible reasons for not taking physical education	97	18	21	80	20	9
Military science	141	18	25			
Diseases had						
Appendicitis	181	46	33	97	33	22
Asthma	53	11	5	15	5	2
Chickenpox	1082	526	202	608	236	124
Chorea	4	0	0	2	2	3
Diabetes	5	0	3	2	0	0
Diphtheria	175	19	24	59	17	6
Diphtheria immunization	242	118	52	108	53	22
Discharging ear	77	23	19	67	16	10
Dysentery	9	5	3	2	2	2
Epilepsy	2	0	0	2	0	0
Gonorrhoea	7	5	1	0	0	0
Heart trouble	67	13	2	27	9	3
Hay fever	182	17	23	51	16	4
Hernia (rupture)	47	16	14	4	1	0
Infantile paralysis	19	7	1	7	3	1
Influenza	483	162	92	180	85	39
Kidney trouble	25	9	7	26	7	5
Malaria	51	18	8	19	5	6
Measles	1498	447	241	745	266	151
German measles	462	209	99	289	142	39
Meningitis	4	3	0	2	0	0
Mumps	1039	360	185	475	165	97
Nervous breakdown	18	2	0	13	5	5
Pleurisy	29	11	10	25	9	1
Pneumonia	179	55	31	92	35	11
Rheumatism	23	14	8	28	3	2
Scarlet fever	307	86	48	172	54	21
Sinusitis	61	26	29	33	5	3
Smallpox	63	13	8	16	13	4
Smallpox vaccination	1579	402	342	725	219	159
Syphilis	0	0	1	0	0	0
Trachoma	1	0	1	0	0	0
Tuberculosis	3	1	4	3	1	0
Typhoid fever	31	16	7	7	2	5
Typhoid inoculation	289	94	83	53	16	20
Undulant fever	3	1	0	1	0	0
Whooping cough	869	412	190	557	215	101
Others	53	21	13	0	0	0

Table III--Continued

	<u>MEN</u>			<u>WOMEN</u>		
	<u>Urban</u>	<u>Rural</u>	<u>Out-St.</u>	<u>Urban</u>	<u>Rural</u>	<u>Out-St.</u>
Color of Hair						
Flaxen	187	71	30	67	17	6
Reddish	73	26	14	31	10	10
Light brown	503	203	51	245	90	38
Brown	1127	306	238	295	131	67
Dark brown	195	95	22	208	55	48
Black	89	17	42	28	2	14
Gray	7	1	0	2	1	0
Color of Eyes						
Blue	912	391	143	325	113	59
Gray	123	33	31	52	22	8
Greenish	85	22	9	106	39	19
Hazel	186	59	35	98	44	25
Brown	858	211	168	283	87	69
Dark	17	3	11	12	1	3
Vision abnormal						
Without glasses						
Both eyes	606	180	100	326	77	81
Right eye (O.D.)	235	55	31	65	37	10
Left eye (O.S.)	272	64	34	65	28	8
Corrected with glasses	188	43	49	330	101	44
Color vision abnormal	4	1	1	0	0	0
Manifest astigmatism	1075	415	265	212	67	59
Ears						
Both ears						
Cerumen	161	56	30	93	29	15
Drum retracted	52	13	11	2	2	0
Perforation	2	1	1	0	0	0
Hearing abnormal	17	0	0	2	2	1
Right ear						
Cerumen	58	20	9	36	14	17
Drum retracted	11	2	0	1	0	0
Perforation	1	0	0	1	0	0
Hearing abnormal	0	0	0	1	0	0
Left ear						
Cerumen	49	19	12	24	7	9
Drum retracted	8	0	0	3	3	0
Perforation	1	1	0	0	0	0
Hearing abnormal	3	0	0	2	1	0
Nose						
Spur	120	24	9	0	2	0
Deviation	412	100	65	89	29	13
Chronic hypertrophy	170	44	19	15	8	5
Atrophy	6	0	3	0	0	0

Table III--Continued

	<u>MEN.</u>			<u>WOMEN</u>		
	<u>Urban</u>	<u>Rural</u>	<u>Out-St.</u>	<u>Urban</u>	<u>Rural</u>	<u>Out-St.</u>
Tonsils						
Removed	1205	264	153	515	137	116
Tags	191	39	25	162	31	27
Pathological	273	123	70	91	43	14
Teeth						
No cavities or absent	281	75	35	544	182	144
Cavities	460	160	73	56	35	4
Absent	800	225	83	260	99	35
Need cleaning	282	89	103	23	8	3
Devitalized	47	7	10	4	2	0
Gums diseased	24	7	5	5	8	3
Weight						
Below 100	*	*	*	44	19	15
100-115				305	100	82
116-130				304	112	50
131-145				135	50	27
146-160				63	17	4
161-175				12	5	2
176-190				6	2	3
191 and over				7	1	0
Height, below 50				0	0	0
50-59 incl.				21	5	9
60-62				205	67	52
63-65				417	174	91
66-68				210	54	31
69-71				23	6	0
72 and over				0	0	0
General development						
Excellent	25	1	1	33	9	12
Good	1749	589	285	767	278	152
Fair	395	129	111	76	19	19
Poor	12	0	0	0	0	0
Build						
Stocky	314	181	42	100	28	17
Medium	1457	451	247	533	188	115
Slender	410	87	107	243	90	51
Skin						
Acne	650	250	107	188	74	21
Mycosis	135	61	23	114	35	17
Other skin diseases	33	4	0	5	7	1
Vaccination scar						
Arm	1882	529	365	500	160	117
Leg	14	0	0	225	59	48
None	285	190	32	151	87	18

*See pages 100-111

Table III--Continued

	<u>MEN</u>			<u>WOMEN</u>		
	<u>Urban</u>	<u>Rural</u>	<u>Out-St.</u>	<u>Urban</u>	<u>Rural</u>	<u>Out-St.</u>
Reflexes						
Patellar	22	3	6	5	5	3
Romberg	6	0	3	0	0	2
Pupillary	4	0	5	1	0	3
Thyroid						
Enlarged						
Slight	9	2	1	134	44	23
Moderate	0	0	0	19	2	2
Marked	0	0	0	4	0	0
Evidence of toxicity	0	0	0	7	0	1
Lymph glands						
Cervical	226	75	27	199	79	32
Axillary	228	89	25	3	2	5
Inguinal	504	222	85	52	19	6
Epitrochlear	120	16	8	11	8	7
Chest, abnormal	20	2	1	35	12	12
Lungs, abnormal	18	2	2	0	0	0
Heart						
Irregular pulse	8	0	0	7	1	0
Enlarged	0	0	0	0	0	0
Murmur						
Aortic	22	2	1	0	1	1
Mitral	1	1	0	2	3	2
Systolic	25	5	0	4	0	1
Abdomen						
Rigid	0	0	0	1	3	0
Relaxed	0	2	0	1	2	1
Penis, circumcised	914	149	179			
Testes, atrophied	6	1	0			
Enlarged	3	0	0			
Undescended	24	3	3			
Hydrocele	0	0	1			
Varicocele	99	43	13			
Menses						
Regular				729	265	148
Irregular				147	41	35
Pain, severe				191	54	27
slight				218	113	43
Hernia, present	17	4	4	1	0	0
Hemorrhoids, present	27	2	0	0	0	0
Vertebral column						
Kyphosis (stooped)	38	7	2	4	7	6
Lordosis (swayback)	87	23	9	36	22	12
Scoliosis (curvature)	56	21	9	24	28	15
Incorrect posture	156	25	12	67	21	5
Restricted flexibility	1	0	0	6	0	3

Table III--Continued

	<u>MEN</u>			<u>WOMEN</u>		
	<u>Urban</u>	<u>Rural</u>	<u>Out-St.</u>	<u>Urban</u>	<u>Rural</u>	<u>Out-St.</u>
Flat feet						
Long arches						
1st degree	284	79	30	277	114	48
2nd degree	125	36	21	66	19	11
3rd degree	76	2	3	23	3	1
Anterior arches	360	83	34	190	69	43
Abnormalities of feet	54	13	6	6	18	6
Physical defects						
Amputations	23	1	0	0	0	0
Atrophies	9	3	2	0	0	0
Deformities	39	4	4	5	1	0
Unusual scars	159	41	32	17	6	11
Others	31	7	3	0	00	0
Urine						
Acid	1865	564	355	680	221	136
Alkaline	206	83	30	151	64	42
Neutral	110	64	12	45	21	5
Albumin						
Persistent	34	0	0	5	1	3
Transitory	98	27	4	45	6	4
Sugar						
Persistent	2	0	0	0	0	0
Transitory	11	1	0	6	1	1

SUBNORMAL DEVELOPMENT OF MEN STUDENTS
AS DETERMINED BY MINIMUM STANDARDS
OF THE WAR DEPARTMENT

	<u>Urban</u>	<u>Rural</u>	<u>Out-S</u>	<u>Grand Total</u>
Underheight and Underweight (under 64" and 120 lbs.)	39	6	18	63
Underheight (under 64"; 120 lbs. or over)	20	4	0	24

<u>Height</u>	<u>Weight</u>	<u>Chest at Expiration</u>	<u>Satisfactory</u>				<u>Underdev. Chest</u>			
			<u>Urban</u>	<u>Rural</u>	<u>Out-S</u>	<u>Total</u>	<u>Urban</u>	<u>Rural</u>	<u>Out-S</u>	<u>Total</u>
64	120	30	49	10	6	65	1	0	1	2
65	121	30	87	27	22	136	0	0	1	1
66	122	30 $\frac{1}{4}$	189	67	28	284	2	0	1	3
67	124	30 $\frac{1}{2}$	244	97	46	387	0	0	3	3
68	126	30 $\frac{3}{4}$	274	115	47	436	3	0	2	5
69	128	31	335	116	51	502	2	0	0	2
70	130	31 $\frac{1}{4}$	284	89	45	418	4	0	2	6
71	133	31 $\frac{1}{2}$	165	52	41	258	2	0	0	2
72	138	32 $\frac{1}{4}$	120	40	25	185	4	0	0	4
73	143	32 $\frac{3}{4}$	66	20	8	94	1	0	1	2
74	148	33 $\frac{1}{2}$	26	5	5	36	1	0	0	1
75	155	34 $\frac{1}{4}$	6	3	2	11	0	0	0	0
76	161	34 $\frac{3}{4}$	4	1	0	5	1	0	0	1
77	168	35 $\frac{1}{4}$	0	0	0	0	0	0	0	0
78	175	35 $\frac{3}{4}$	0	0	0	0	0	0	0	0
79 $\frac{3}{4}$										
	<u>Totals</u>		1849	643	326	2818	21	0	11	32

STATE OF CALIFORNIA
DEPARTMENT OF AGRICULTURE
DIVISION OF ENTOMOLOGY

REPORT ON THE

INVESTIGATION OF THE
LIFE HISTORY OF THE
COTTON BOLL WORM

BY
J. H. REEB
ENTOMOLOGICAL ASSISTANT
CALIFORNIA DEPARTMENT OF AGRICULTURE
DIVISION OF ENTOMOLOGY
1912

Date	Eggs			Larvae			Pupa	Moth	Remarks	Locality	Collector
	Set	Inc.	Hatched	1st	2nd	3rd					
1	1	1	1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1	1	1	1	1
8	1	1	1	1	1	1	1	1	1	1	1
9	1	1	1	1	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1	1	1	1	1
11	1	1	1	1	1	1	1	1	1	1	1
12	1	1	1	1	1	1	1	1	1	1	1
13	1	1	1	1	1	1	1	1	1	1	1
14	1	1	1	1	1	1	1	1	1	1	1
15	1	1	1	1	1	1	1	1	1	1	1
16	1	1	1	1	1	1	1	1	1	1	1
17	1	1	1	1	1	1	1	1	1	1	1
18	1	1	1	1	1	1	1	1	1	1	1
19	1	1	1	1	1	1	1	1	1	1	1
20	1	1	1	1	1	1	1	1	1	1	1
21	1	1	1	1	1	1	1	1	1	1	1
22	1	1	1	1	1	1	1	1	1	1	1
23	1	1	1	1	1	1	1	1	1	1	1
24	1	1	1	1	1	1	1	1	1	1	1
25	1	1	1	1	1	1	1	1	1	1	1
26	1	1	1	1	1	1	1	1	1	1	1
27	1	1	1	1	1	1	1	1	1	1	1
28	1	1	1	1	1	1	1	1	1	1	1
29	1	1	1	1	1	1	1	1	1	1	1
30	1	1	1	1	1	1	1	1	1	1	1
31	1	1	1	1	1	1	1	1	1	1	1
32	1	1	1	1	1	1	1	1	1	1	1
33	1	1	1	1	1	1	1	1	1	1	1
34	1	1	1	1	1	1	1	1	1	1	1
35	1	1	1	1	1	1	1	1	1	1	1
36	1	1	1	1	1	1	1	1	1	1	1
37	1	1	1	1	1	1	1	1	1	1	1
38	1	1	1	1	1	1	1	1	1	1	1
39	1	1	1	1	1	1	1	1	1	1	1
40	1	1	1	1	1	1	1	1	1	1	1
41	1	1	1	1	1	1	1	1	1	1	1
42	1	1	1	1	1	1	1	1	1	1	1
43	1	1	1	1	1	1	1	1	1	1	1
44	1	1	1	1	1	1	1	1	1	1	1
45	1	1	1	1	1	1	1	1	1	1	1
46	1	1	1	1	1	1	1	1	1	1	1
47	1	1	1	1	1	1	1	1	1	1	1
48	1	1	1	1	1	1	1	1	1	1	1
49	1	1	1	1	1	1	1	1	1	1	1
50	1	1	1	1	1	1	1	1	1	1	1
51	1	1	1	1	1	1	1	1	1	1	1
52	1	1	1	1	1	1	1	1	1	1	1
53	1	1	1	1	1	1	1	1	1	1	1
54	1	1	1	1	1	1	1	1	1	1	1
55	1	1	1	1	1	1	1	1	1	1	1
56	1	1	1	1	1	1	1	1	1	1	1
57	1	1	1	1	1	1	1	1	1	1	1
58	1	1	1	1	1	1	1	1	1	1	1
59	1	1	1	1	1	1	1	1	1	1	1
60	1	1	1	1	1	1	1	1	1	1	1
61	1	1	1	1	1	1	1	1	1	1	1
62	1	1	1	1	1	1	1	1	1	1	1
63	1	1	1	1	1	1	1	1	1	1	1
64	1	1	1	1	1	1	1	1	1	1	1
65	1	1	1	1	1	1	1	1	1	1	1
66	1	1	1	1	1	1	1	1	1	1	1
67	1	1	1	1	1	1	1	1	1	1	1
68	1	1	1	1	1	1	1	1	1	1	1
69	1	1	1	1	1	1	1	1	1	1	1
70	1	1	1	1	1	1	1	1	1	1	1
71	1	1	1	1	1	1	1	1	1	1	1
72	1	1	1	1	1	1	1	1	1	1	1
73	1	1	1	1	1	1	1	1	1	1	1
74	1	1	1	1	1	1	1	1	1	1	1
75	1	1	1	1	1	1	1	1	1	1	1
76	1	1	1	1	1	1	1	1	1	1	1
77	1	1	1	1	1	1	1	1	1	1	1
78	1	1	1	1	1	1	1	1	1	1	1
79	1	1	1	1	1	1	1	1	1	1	1
80	1	1	1	1	1	1	1	1	1	1	1
81	1	1	1	1	1	1	1	1	1	1	1
82	1	1	1	1	1	1	1	1	1	1	1
83	1	1	1	1	1	1	1	1	1	1	1
84	1	1	1	1	1	1	1	1	1	1	1
85	1	1	1	1	1	1	1	1	1	1	1
86	1	1	1	1	1	1	1	1	1	1	1
87	1	1	1	1	1	1	1	1	1	1	1
88	1	1	1	1	1	1	1	1	1	1	1
89	1	1	1	1	1	1	1	1	1	1	1
90	1	1	1	1	1	1	1	1	1	1	1
91	1	1	1	1	1	1	1	1	1	1	1
92	1	1	1	1	1	1	1	1	1	1	1
93	1	1	1	1	1	1	1	1	1	1	1
94	1	1	1	1	1	1	1	1	1	1	1
95	1	1	1	1	1	1	1	1	1	1	1
96	1	1	1	1	1	1	1	1	1	1	1
97	1	1	1	1	1	1	1	1	1	1	1
98	1	1	1	1	1	1	1	1	1	1	1
99	1	1	1	1	1	1	1	1	1	1	1
100	1	1	1	1	1	1	1	1	1	1	1

BY

SUBNORMAL DEVELOPMENT OF MEN STUDENTS
AS DETERMINED BY MINIMUM STANDARDS
OF THE WAR DEPARTMENT
(cont'd)

<u>Height</u>	<u>Weight</u>	<u>Chest at</u> <u>Expiration</u>	<u>Underweight</u>				<u>Underdev. Chest</u> <u>and Underweight</u>			
			<u>Urban</u>	<u>Rural</u>	<u>Out-S</u>	<u>Total</u>	<u>Urban</u>	<u>Rural</u>	<u>Out-S</u>	<u>Total</u>
64	120	30	10	4	1	15	1	0	0	1
65	121	30	18	8	5	31	2	0	2	4
66	122	30 $\frac{1}{4}$	23	7	3	33	4	3	1	8
67	124	30 $\frac{1}{2}$	28	9	9	46	10	1	1	12
68	126	30 $\frac{3}{4}$	35	10	3	48	12	1	2	15
69	128	31	20	5	1	26	9	0	3	12
70	130	31 $\frac{1}{4}$	19	9	1	29	12	0	3	15
71	133	31 $\frac{3}{4}$	9	6	0	15	8	2	1	11
72	138	32 $\frac{1}{4}$	9	0	1	10	3	1	2	6
73	143	32 $\frac{3}{4}$	6	0	0	6	3	0	0	3
74	148	33 $\frac{1}{2}$	4	0	1	5	3	0	1	4
75	155	34 $\frac{1}{4}$	0	0	1	1	1	0	0	1
76	161	34 $\frac{3}{4}$	2	0	0	2	0	0	0	0
77	168	35 $\frac{1}{4}$	0	0	0	0	0	0	0	0
78	175	35 $\frac{3}{4}$	0	0	0	0	1	0	0	1
<u>Totals</u>			183	58	26	267	69	8	16	93

SUBNORMAL DEVELOPMENT OF MEN STUDENTS
AS DETERMINED BY MINIMUM STANDARDS
OF THE WAR DEPARTMENT
(cont'd)

<u>Height</u>	<u>Weight</u>	<u>Chest at</u> <u>Expiration</u>	<u>Urban</u>	<u>Grand</u> <u>Rural</u>	<u>Totals</u> <u>Out-S</u>	<u>Total</u>
64	120	30	61	14	8	83
65	121	30	107	35	30	172
66	122	30 $\frac{1}{4}$	218	77	33	328
67	124	30 $\frac{1}{2}$	282	107	59	448
68	126	30 $\frac{3}{4}$	324	126	54	504
69	128	31	366	121	55	542
70	130	31 $\frac{1}{4}$	319	98	51	468
71	133	31 $\frac{1}{2}$	184	60	42	286
72	138	32 $\frac{1}{4}$	136	41	28	205
73	143	32 $\frac{3}{4}$	76	20	9	105
74	148	33 $\frac{1}{2}$	34	5	7	46
75	155	34 $\frac{1}{4}$	7	3	3	13
76	161	34 $\frac{3}{4}$	7	1	0	8
77	168	35 $\frac{1}{4}$	0	0	0	0
78	175	35 $\frac{3}{4}$	1	0	0	1
79 $\frac{1}{4}$				1		1
		<u>Totals</u>	2122	710	379	3210

TWENTIETH ANNUAL REPORT

APPENDIX C

APPENDIX C

CIVIL SERVICE EXAMINATIONS

	<u>Men</u>	<u>Women</u>	<u>Total</u>
Total number examined	199	6	205
Married	175	4	179
Widower, widow	1	2	3
Single	23	0	23
Age			
Under 20	3	0	3
20 - 29	45	1	46
30 - 39	61	1	62
40 - 49	54	2	56
50 and over	36	2	38
Inheritable diseases			
Tuberculosis	10	1	11
Cancer	13	2	15
Neurasthenia	3	0	3
Epilepsy	1	0	1
Others	1	0	1
Birthplace			
Illinois	159	4	163
Elsewhere	40	2	42
Injuries			
Head	8	0	8
Chest	5	0	5
Abdomen	0	0	0
Arm	25	0	25
Leg	8	0	8
Others	3	0	3
Operations			
Head			
Tonsils	27	0	27
Adenoids	12	0	12
Others	3	0	3
Chest	1	0	1
Abdomen	15	0	15
Circuncision	6		6
Others	16	0	16
Vaccinations			
Typhoid	54	1	55
Smallpox	141	6	147
Age of vaccination scar			
Less than 10 years	4	1	5
10 - 20 years	100	1	101
More than 20 years	41	4	45
Sleep			
Less than 6 hours	0	0	0
6 - 7 hours	20	0	20
8 - 9 hours	171	5	176
10 hours and over	8	1	9

	<u>Men</u>	<u>Women</u>	<u>Total</u>
Habits			
Tea	52	0	52
Coffee	145	6	151
Tobacco	142	0	142
Alcohol	13	0	13
Drugs	0	0	0
None of the above	25	0	25
Diseases had			
Measles	175	6	181
Rubella	33	1	34
Mumps	135	6	141
Chickenpox	100	4	104
Whooping cough	124	6	130
Scarlet fever	13	1	14
Typhoid fever	11	0	11
Diphtheria	10	1	11
Meningitis	0	0	0
Malaria	6	0	6
Smallpox	7	0	7
Pneumonia	18	0	18
Asthma	0	0	0
Pleurisy	5	0	5
Rheumatism	11	0	11
Tonsillitis	14	0	14
Chorea	0	0	0
Influenza	62	2	64
Otitis media	2	0	2
Gonorrhoea	14	0	14
Syphilis	0	0	0
Chancroid	0	0	0
Constipation	4	0	4
Dysentery	4	0	4
Appendicitis	13	1	14
Neurasthenia	0	0	0
Poliomyelitis	0	0	0
Tuberculosis	1	0	1
Glasses	36	3	39
Others	3	0	3
Weight			
Below 100 pounds	0	0	0
100 - 115	5	1	6
116 - 130	26	3	29
131 - 145	51	2	53
146 - 160	55	0	55
161 - 175	27	0	27
176 - 190	24	0	24
191 and over	2	0	2

	<u>Men</u>	<u>Women</u>	<u>Total</u>
Height			
Below 50 inches	0	0	0
50 - 59	0	0	0
60 - 62	2	2	4
63 - 65	27	4	31
66 - 68	91	0	91
69 - 71	60	0	60
72 and over	19	0	19
Color of eyes			
Blue	110	2	112
Gray	26	1	27
Greenish	0	0	0
Hazel	14	1	15
Brown	49	2	51
Dark	0	0	0
Color of hair			
Flaxen	5	0	5
Reddish	5	1	6
Light brown	53	1	54
Brown	92	2	94
Dark brown	22	1	23
Black	10	0	10
Gray	13	1	14
Teeth			
No cavities or absent	12	0	12
Cavities	72	0	72
Absent	140	6	146
Need cleaning	103	2	105
Devitalized	0	0	0
Gums diseased	56	1	57
General development			
Excellent	1	0	1
Good	171	4	175
Fair	26	2	28
Poor	1	0	1
Nutrition			
Thin	34	1	35
Average	151	4	155
Obese	14	1	15
Build			
Stocky	42	0	42
Medium	157	5	162
Slender	40	1	41
Appearance			
Healthy	198	5	203
Borderline	1	1	2
Unhealthy	0	0	0
Nervous	0	0	0
Alert	197	0	197
Apathetic	1	0	1

	<u>Men</u>	<u>Women</u>	<u>Total</u>
Skin			
Dry	3	0	3
Moist	196	6	202
Acne	14	0	14
Other skin diseases	3	0	3
Vaccination scar			
Arm	149	6	155
Leg	0	0	0
None	150	0	150
Thyroid			
Enlarged	1	0	1
Evidence of toxicity	0	0	0
Chest, abnormal	2	0	2
Lungs, abnormal	4	0	4
Lymph glands			
Cervical	16	0	16
Axillary	9	0	9
Inguinal	26	0	26
Epitrochlear	2	0	2
Heart			
Irregular pulse	0	0	0
Enlarged	0	0	0
Murmur			
Aortic	0	0	0
Mitral	0	0	0
Systolic	2	0	2
Abdomen			
Rigid	0	0	0
Relaxed	4	3	7
Abnormal			
Liver	0	0	0
Spleen	0	0	0
Kidneys	0	0	0
Knee jerk	6	0	6
Hernia, present	14	0	14
Hemorrhoids, present	5	0	5
Penis, circumcised	17		17
Testes, atrophied	7		7
Enlarged	0		0
Undescended	3		3
Hydrocele	0		0
Varicocele	16		16
Vertebral column			
Kyphosis	11	1	12
Lordosis	8	1	9
Scoliosis	8	0	8
Incorrect posture	21	0	21
Restricted flexibility	1	0	1

	<u>Men</u>	<u>Women</u>	<u>Total</u>
Flat feet			
Long arches			
1st degree	24	4	28
2nd degree	9	1	10
3rd degree	1	0	1
Anterior arches	30	4	34
Nose			
Spur	2	0	2
Deviation	16	1	17
Chronic hypertrophy	13	1	14
Atrophy	0	0	0
Adenoids, present	3	4	7
Tonsils			
Removed	24	0	24
Tags	4	0	4
Pathological	3	2	5
Ears			
Right ear			
Cerumen	4	0	4
Drum retracted	1	0	1
Perforation	1	0	1
Hearing abnormal	0	0	0
Left ear			
Cerumen	4	0	4
Drum retracted	2	0	2
Perforation	0	0	0
Hearing abnormal	0	0	0
Both ears			
Cerumen	11	0	11
Drum retracted	2	0	2
Perforation	0	0	0
Hearing abnormal	0	0	0
Eyes			
Right eye			
Abnormal lids	0	0	0
Conjunctiva	0	0	0
Abnormal muscles	0	0	0
Abnormal pupils	0	0	0
Fundus	0	0	0
Left eye			
Abnormal lids	0	0	0
Conjunctiva	0	0	0
Abnormal muscles	0	0	0
Abnormal pupils	0	0	0
Fundus	0	0	0
Both eyes			
Abnormal lids	0	0	0
Conjunctiva	0	0	0
Abnormal muscles	0	0	0
Abnormal pupils	0	1	1
Fundus	0	0	0

	<u>Men</u>	<u>Women</u>	<u>Total</u>
Vision abnormal			
Without glasses			
Both eyes	193	2	195
Right eye (O.D.)	19	0	19
Left eye (O.S.)	17	0	17
Corrected with glasses	10	3	13
Color vision abnormal	2	0	2
Urine			
Acid	156	6	162
Alkaline	35	0	35
Neutral	8	0	8
Albumin	10	0	10
Sugar	5	0	5

Classification

	<u>Men</u>	<u>Women</u>	<u>Total</u>
Grade			
Excellent	0	0	0
Good	188	3	191
Fair	10	2	12
Poor	0	1	1
Waiver required	17	2	19
Reexamination	0	0	0
Disqualified	1	0	1

TWENTIETH ANNUAL REPORT

APPENDIX D

APPENDIX D

UNIVERSITY HIGH SCHOOL EXAMINATIONS

	<u>Men</u>	<u>Women</u>	<u>Total</u>
Total number examined	30	42	72
Total number reexamined	10	19	29
Inheritable diseases			
Apoplexy (family history)	1	0	1
Cancer (" ")	5	4	9
Goiter (" ")	1	3	4
Mental disturbances (family history)	1	0	1
Diabetes (family history)	0	3	3
Epilepsy (" ")	0	0	0
Kidney disease (family history)	0	3	3
Tuberculosis (" ")	1	7	8
Birthplace			
Illinois	22	20	42
Elsewhere	8	22	30
Work for self-support during school	9	0	9
Use laxatives frequently	2	3	5
Sleep			
Under 6 hours	0	0	0
6 - 7 hours	2	0	2
8 - 9 hours	20	15	35
10 hours and over	8	27	35
Habits			
Coffee	7	7	14
Tea	4	12	16
Tobacco	6	4	10
None of three	15	16	31
Age started smoking			
Younger than 10 years	0	0	0
10 - 15 years	2	3	5
15 - 20 years	4	1	5
20 - 25 years	0	0	0
Over 25 years	0	0	0
Meals per day			
One	0	0	0
Two	1	0	1
Three	28	42	70
More than three	1	0	1
Weight the past year			
Gained	19	24	43
Lost	3	2	5
Stationary	8	16	24
Easily fatigued	3	1	4

	<u>Men</u>	<u>Women</u>	<u>Total</u>
Subject to frequent colds in			
Nose	6	5	11
Throat	1	1	2
Lungs	0	0	0
When reading, bothered with			
Headaches	4	4	8
Blurring of vision	0	2	2
Burning of eyes	0	1	1
Squinting of eyes	2	0	2
Watering of eyes	0	2	2
Twitching of eyes	0	1	1
Persistently worry	1	1	2
Have the "blues"	2	3	5
Injuries			
Head	0	1	1
Chest	0	0	0
Abdomen	0	0	0
Arm	4	4	8
Leg	0	1	1
Others	0	1	1
Operations			
Head			
Tonsils	14	24	38
Adenoids	13	22	35
Others	0	3	3
Chest	0	0	0
Abdomen	3	3	6
Circumcision	6		6
Others	1	3	4
Arches of feet painful	3	0	3
Possible reasons for not taking			
Physical education	0	3	3
Military science	0		0
Diseases had			
Appendicitis	4	3	7
Asthma	1	1	2
Chickenpox	15	33	48
Chorea	0	0	0
Diabetes	0	0	0
Diphtheria	0	1	1
Diphtheria immunization	4	13	17
Discharging ear	2	1	3
Dysentery	0	0	0
Epilepsy	0	0	0
Gonorrhoea	2	0	2
Heart trouble	1	0	1
Hay fever	2	0	2
Hernia (rupture)	1	0	1

	<u>Men</u>	<u>Women</u>	<u>Total</u>
	<u>Men</u>	<u>Women</u>	<u>Total</u>
Infantile paralysis			
Diseases had (cont'd)			
Infantile paralysis	0	0	0
Influenza	3	4	7
Kidney trouble	0	1	1
Malaria	1	1	2
Measles	15	35	50
German measles	10	16	26
Meningitis	0	0	0
Mumps	6	11	17
Nervous breakdown	0	0	0
Pleurisy	0	0	0
Pneumonia	0	5	5
Rheumatism	0	2	2
Scarlet fever	1	5	6
Sinusitis	0	0	0
Smallpox	0	0	0
Smallpox vaccination	21	26	47
Syphilis	0	0	0
Trachoma	0	0	0
Tuberculosis	0	0	0
Typhoid fever	0	1	1
Typhoid inoculation	7	2	9
Undulant fever	0	0	0
Whooping cough	3	25	28
Others	7		7
Color of hair			
Flaxen	4	3	7
Reddish	0	1	1
Light brown	8	13	21
Brown	1	17	18
Dark brown	3	8	11
Black	4	0	4
Gray	0	0	0
Color of eyes			
Blue	15	14	29
Gray	3	9	12
Greenish	0	2	2
Hazel	2	4	6
Brown	9	12	21
Dark	1	1	2
Vision abnormal			
Without glasses			
Both eyes	13	5	18
Right eye (O.D.)	3	5	8
Left eye (O.S.)	1	6	7
Corrected with glasses	1	9	10
Color vision abnormal	0	0	0
Manifest astigmatism	2	10	12

	<u>Men</u>	<u>Women</u>	<u>Total</u>
Ears			
Both ears	0	2	2
Cerumen	0	0	0
Drum retracted	0	0	0
Perforation	0	0	0
Hearing abnormal	0	0	0
Right ear	1	3	4
Cerumen	1	0	1
Drum retracted	0	0	0
Perforation	0	0	0
Hearing abnormal	0	0	0
Left ear	0	0	0
Cerumen	0	1	1
Drum retracted	0	0	0
Perforation	0	0	0
Hearing abnormal	0	0	0
Nose			
Spur	1	0	1
Deviation	2	2	4
Chronic hypertrophy	0	6	6
Atrophy	0	0	0
Tonsils			
Removed	14	27	41
Tags	2	6	8
Pathological	3	7	10
Teeth			
No cavities or absent	5	33	38
Cavities	7	4	11
Absent	8	5	13
Need cleaning	8	2	10
Devitalized	1	0	1
Gums diseased	1	2	3
General development			
Excellent	0	0	0
Good	28	40	68
Fair	2	2	4
Poor	0	0	0
Build			
Stocky	4	2	6
Medium	19	23	42
Slender	7	17	24
Skin			
Acne	4	6	10
Mycosis	2	2	4
Other skin diseases	0	1	1
Vaccination scar			
Arm	24	14	38
Leg	0	14	14
None	6	14	20

	<u>Men</u>	<u>Women</u>	<u>Total</u>
Reflexes			
Patellar	0	2	2
Romberg	0	0	0
Pupillary	0	0	0
Thyroid			
Enlarged			
Slight	0	2	2
Moderate	0	0	0
Marked	0	0	0
Evidence of toxicity	0	0	0
Lymph glands			
Cervical	7	12	19
Axillary	4	1	5
Inguinal	6	3	9
Epitrochlear	0	0	0
Chest, abnormal	0	1	1
Lungs, abnormal	0	0	0
Heart			
Irregular pulse	0	0	0
Enlarged	0	0	0
Murmur			
Aortic	0	0	0
Mitral	0	0	0
Systolic	0	0	0
Abdomen			
Rigid	0	0	0
Relaxed	0	1	1
Penis, circumcised	12		12
Testes, atrophied	1		1
Enlarged	0		0
Undescended	0		0
Hydrocele	0		0
Varicocele	0		0
Hernia, present	1	0	1
Vertebral column			
Kyphosis (stooped)	0	1	1
Lordosis (swayback)	3	6	9
Scoliosis (curvature)	0	2	2
Incorrect posture	5	0	5
Restricted flexibility	0	0	0
Flat feet			
Long arches			
1st degree	1	6	7
2nd degree	2	7	9
3rd degree	0	0	0
Anterior arches	3	5	8
Abnormalities of feet	0	3	3

	<u>Men</u>	<u>Women</u>	<u>Total</u>
Physical defects			
Amputations	0	0	0
Atrophies	0	0	0
Deformities	0	1	1
Unusual scars	2	1	3
Others	0	0	0
Urine			
Acid	24	32	56
Alkaline	6	6	12
Neutral	0	4	4
Albumin			
Persistent	0	1	1
Functional	3	2	5
Sugar			
Diabetic	0	0	0
Transient	0	0	0
Height	*		
Below 50 inches		0	
50 - 59		10	
60 - 62		14	
63 - 65		15	
66 - 68		3	
69 - 71		0	
72 and over		0	
Weight	*		
Below 100 pounds		15	
100 - 115		14	
116 - 130		12	
131 - 145		0	
146 - 160		0	
161 - 175		0	
176 - 190		1	
191 and over		0	
Menses			
Has not started yet		11	11
Regular		25	25
Irregular		6	6
Pain, slight		7	7
severe		4	4
Hemorrhoids	0	0	0

*See Page 128.

COMPARISON OF WEIGHT, HEIGHT, AND CHEST
MEASUREMENTS OF HIGH SCHOOL BOY STUDENTS
WITH MINIMUM ARMY STANDARDS

Underheight and Underweight
(under 64 ins. and 120 lbs.) 13

Underheight (under 64 ins. but
weight of 120 lbs. or over) 0

<u>Height</u>	<u>Weight</u>	<u>Chest at Expiration</u>	<u>Satis- factory</u>	<u>Underdev. Chest</u>	<u>Under- weight</u>	<u>Underdev. Chest and Underweight</u>
64	120	30	0	0	0	0
65	121	30	1	0	1	0
66	122	30 $\frac{1}{4}$	2	0	0	0
67	124	30 $\frac{1}{2}$	2	0	0	0
68	126	30 $\frac{3}{4}$	3	0	0	0
69	128	31	1	0	0	0
70	130	31 $\frac{1}{4}$	3	0	0	0
71	133	31 $\frac{1}{2}$	2	0	0	0
72	138	32 $\frac{1}{2}$	0	0	0	1
73	143	32 $\frac{1}{2}$	0	0	1	0
74	148	33 $\frac{1}{2}$	0	0	0	0
75	155	34 $\frac{1}{2}$	0	0	0	0
76	161	34 $\frac{3}{4}$	0	0	0	0
77	168	35 $\frac{1}{4}$	0	0	0	0
78	175	35 $\frac{3}{4}$	0	0	0	0

TWENTIETH ANNUAL REPORT

APPENDIX E

THE HISTORY OF

AMERICA

CASES ENCOUNTERED DURING THE YEAR

Abdominal pain		9
Abscess		
Alveolar (gunboil)	7	
Ischiorectal	1	
Tonsillar	2	
Unclassified	<u>17</u>	27
Acidosis		2
Acne		107
Adenitis		
Cervical	20	
Inguinal	3	
Unclassified	<u>39</u>	62
Adhesions		3
Albuminuria		158
Allergy		12
Alopecia		5
Amenorrhea		15
Anaphylaxis		1
Anemia		7
Angina, Vincent's		35
Ankylosis		1
Anorexia		3
Appendicitis		
Acute	5	
Chronic	19	
Unclassified	<u>49</u>	73
Architis		1
Arthritis		34
Asthma		28
Astigmatism		26
Autointoxication		23
Balanitis		4
Bites		
Animal	7	
Insect stings	<u>28</u>	35
Blepharitis		26
Blindness		1
Bradycardia		4
Bromidrosis		18
Bronchitis		
Acute	88	
Chronic	38	
Unclassified	<u>324</u>	450
Bunion		17
Bursitis		51
Calculus		2
Callosity		78
Carbuncle		7
Caries of tooth		25
Catarrh		6

Cauliflower ear		12
Cellulitis		49
Ceruminosis		338
Chalazion		3
Chapped		
Lips	3	
Skin	1	
Unclassified	<u>1</u>	5
Chickenpox		3
Chilblain		2
Chills		2
Clavus		72
Colitis		51
Color blindness		5
Comedo		3
Concussion		
Brain	5	
Unclassified	<u>3</u>	8
Conjunctivitis		
Acute	63	
Chronic	5	
Unclassified	<u>126</u>	194
Constipation		77
Corpus luteum		2
Coryza		1132
Cough		27
Cramp		2
Curvature of spine (lordosis)		1
Cyst		
Sebaceous	43	
Unclassified	<u>85</u>	128
Cystitis		9
Dandruff		12
Deafness		8
Dermatitis		
Chemical	14	
Exfoliativa	9	
Medicamentosa	2	
Mycelial	1	
Occupational	1	
Venenata	12	
Vesicular	1	
Unclassified	<u>122</u>	162
Deviation, nasal septum		20
Diarrhea		16
Diphtheria		1
Dysentery		2
Dysmenorrhea		49
Eccymosis		3
Ecthyma		13
Eczema		20
Edema		10

Enteritis		54
Epidermophytosis		8
Epididymitis		4
Epistaxis		42
Eustachian tube, obstruction of		5
Excoriation		26
Exostosis		8
Fainting		5
Fatigue		94
Fever		19
Fissure		
Anus	3	
Skin	4	
Unclassified	<u>16</u>	23
Fistula		1
Flat foot (pes planus)		52
Flatulence		19
Floating cartilage		4
Folliculitis		5
Frostbite		71
Furunculosis		577
Ganglion		7
Gas, chlorine		1
Gastritis		77
Gastroenteritis		36
Gingivitis		62
Glossitis		3
Gonococcus infection		1
Granulation, eye		2
Halitosis		3
Hay fever		9
Headache		58
Heart trouble		3
Heat rash		2
Hematoma		2
Hematuria		3
Hemorrhage		9
Hemorrhoids		45
Hernia		
Femoral	1	
Inguinal	7	
Unclassified	<u>11</u>	19
Herpes		
Liabilis	26	
Simplex	34	
Zoster (shingles)	14	
Zoster Ophthalmos	1	
Unclassified	<u>13</u>	88
Hiccough		6
Hirsutism		1
Hodgkin's disease		1

Hordeolum		103
Hydrocele		1
Hyperacidity		2
Hyperhidrosis		20
Hypermetropia		2
Hypertension		9
Hyperopia		4
Hypertrophy		
Turbinates	6	
Unclassified	<u>2</u>	8
Hypothyroidism		2
Ichthyosis		2
Impetigo		
Contagiosa	58	
Unclassified	<u>115</u>	173
Indigestion		70
Inflammation		19
Influenza		18
Ingrown nail		55
Insomnia		26
Iritis		2
Irritation		
Skin	8	
Unclassified	<u>8</u>	16
Keloid		2
Kidney stones		1
Lagrippe		71
Laryngitis		58
Leucorrhoea		1
Lichen		2
Lipoma		1
Lumbago		12
Lymphangitis		2
Malaise		4
Malaria		2
Menorrhagia		22
Metatarsalgia		50
Milium		4
Mucocele		1
Mumps		14
Myalgia		19
Mycosis		1031
Myocarditis		2
Myopia		5
Myositis		150
Narcolepsy		1
Nausea		7
Nasal obstruction		7
Neisserian infection		5
Nephritis		6
Nervousness		23

Neuralgia		
Face	4	
Intercostal	8	
Unclassified	<u>20</u>	32
Neurasthenia		13
Neuritis		46
Neurosis		4
Nevus		30
Nocturia		1
Node, axillary		1
Nostalgia		1
Obesity		2
Omphalitis		2
Orchitis		2
Osteomyelitis		1
Otalgia		16
Otitis		
Externa	11	
Interna	3	
Media	<u>89</u>	103
Overweight		21
Painful		
Arch	50	
Knee	1	
Miscellaneous	<u>28</u>	79
Papilloma		2
Paralysis		
Facial	2	
Infantile	1	
Unclassified	<u>1</u>	4
Paronychia		36
Pediculosis		
Capitis	1	
Pubis	32	
Unclassified	<u>8</u>	41
Periostitis		13
Peritonitis		1
Pharyngitis		
Acute	322	
Chronic	5	
Unclassified	<u>936</u>	1263
Phimosi		10
Pityriasis		8
Pleurisy		26
Poisoning		
Ivy	5	
Ptomaine	2	
Unclassified	<u>7</u>	14
Polyuria		7
Pruritis		18
Psoriasis		13

Psychosis		4
Pterygium		1
Pustule		18
Pyelitis		1
Pyorrhoea		2
Pyuria		1
Rales		6
Regurgitation, mitral		3
Retraction of left eardrum		1
Rheumatism		13
Rhinitis		
Acute	52	
Chronic	8	
Unclassified	<u>232</u>	292
Rubella		1
Sarcoma		1
Scabies		49
Sciatica		2
Scoliosis		2
Seborrhea		3
Sinusitis		185
Stasis, intestinal		2
Stenosis, mitral		1
Stiff neck		2
Stomatitis		
Apthous	120	
Unclassified	<u>18</u>	138
Synovitis		3
Stomachodynia		2
Sun stroke		1
Swollen		
Face	1	
Gland	5	
Legs	<u>1</u>	7
Tachycardia		24
Tenosynovitis		2
Thyroid, enlarged		2
Tinea		
Circinata	21	
Cruris	45	
Sycosis	3	
Tonsurans	2	
Versicolor	5	
Unclassified	<u>44</u>	120
Tinnitus aurium		4
Tonsillitis		
Acute	39	
Chronic	7	
Unclassified	<u>109</u>	155

Toothache	35
Torticollis	14
Tracheitis	22
Trophic disturbance, skin	2
Tumor	7
Ulcer	43
Underweight	38
Urethritis	10
Urticaria (hives)	65
Vaccinia	24
Varicocele	3
Varicose Veins	11
Vasomotor disturbance	2
Venipuncture	5
Verruca (wart)	750
Vertigo	5
Vesicle	18
Vitiligo	1
Vomiting	4
Weak ankle	8
Whooping cough	1

INJURIES, WOUNDS, SPRAINS

Abrasion		
Ankle	5	
Arm	13	
Back	4	
Buttocks	4	
Chest	1	
Elbow	9	
Eyelid	5	
Face	13	
Finger	78	
Foot	30	
Gum	6	
Hand	53	
Head	13	
Heel	9	
Knee	77	
Leg	33	
Nose	6	
Penis	1	
Shoulder	2	
Skin	9	
Thigh	14	
Toe	18	
Miscellaneous	34	
Unclassified	<u>12</u>	449

Blister			
Heel		103	
Miscellaneous		138	
Unclassified		<u>6</u>	247
Broken			11
Bruise			41
Burn			
Acid	13		
Chemical	16		
Electrical	2		
Sunburn	7		
Miscellaneous	17		
Unclassified	<u>34</u>	89	
Arm	10		
Back	3		
Eye	3		
Face	7		
Finger	20		
Foot	6		
Hand	38		
Leg	6		
Mouth	2		
Neck	1		
Scalp	2		
Wrist	2		
Miscellaneous	8		
Unclassified	<u>8</u>	116	205
Contusion			
Arm	7		
Back	4		
Bone			
Rib	10		
Thorax	<u>2</u>	12	
Buttocks	3		
Chest	10		
Ear	14		
Eye	17		
Face	3		
Finger	75		
Foot	31		
Forehead	3		
Head	7		
Hand	17		
Heel	15		
Joint			
Ankle	2		
Elbow	27		
Hip	5		
Knee	38		
Wrist	<u>1</u>	73	
Leg	29		

Contusion (cont'd)

Lip	5	
Neck	2	
Nose	27	
Scalp	2	
Scrotum	1	
Shoulder	3	
Side	3	
Spine	3	
Testicle	1	
Thigh	6	
Toe	43	
Miscellaneous	38	
Unclassified	<u>4</u>	458
Defective vision		10
Dislocation		
Cartilage	6	
Finger	3	
Shoulder	1	
Wrist	3	
Unclassified	<u>3</u>	16
Foreign body		
Ear	4	
Eye	124	
Finger	33	
Hand	8	
Miscellaneous	12	
Unclassified	<u>8</u>	189
Fracture		
Bones		
Arm	1	
Clavicle	1	
Foot	3	
Hand	2	
Jaw	1	
Metacarpal	6	
Rib	6	
Toe	9	
Miscellaneous	<u>6</u>	35
Joints		
Finger	2	
Wrist	1	
Unclassified	<u>1</u>	4
Unclassified	<u>4</u>	43
Incisions		
Face	1	
Finger	2	
Foot	1	
Hand	2	
Leg	1	
Wound	24	
Miscellaneous	<u>1</u>	32

Infections

Abrasion	12
Ankle	3
Arm	5
Axillar	1
Blister	14
Cheek	2
Clavus	4
Comedo	1
Cyst	21
Elbow	4
Eye	4
Eyelid	2
Face	12
Finger	108
Foot	26
Gun	27
Hand	15
Head	1
Heel	22
Hematoma	1
Knee	9
Leg	7
Mouth	1
Neck	4
Nose	2
Skin	2
Throat	1
Toe	83
Tonsils	11
Tooth	5
Wart (verruca)	2
Wound	1
Umbilicus	1
Miscellaneous	70
Unclassified	<u>7</u>

491

Injured

Ankle	15
Arm	1
Back	11
Chest	2
Elbow	3
Eye	3
Finger	13
Foot	12
Hand	6
Knee	16
Leg	7
Nose	4
Rib	2
Shoulder	8

Injured (cont'd)		
Toe	14	
Wrist	7	
Miscellaneous	22	
Unclassified	<u>7</u>	153
Lacerations		
Arm	3	
Chin	3	
Ear	1	
Eye	7	
Elbow	3	
Face	7	
Finger	80	
Foot	6	
Hand	30	
Head	4	
Knee	2	
Leg	8	
Lips	5	
Nose	1	
Scalp	13	
Thigh	1	
Toe	5	
Tongue	2	
Wrist	2	
Wound	36	
Miscellaneous	13	
Unclassified	<u>4</u>	236
Puncture, wound		23
Rupture		1
Sprain		
Ankle	238	
Arm	1	
Back	20	
Elbow	5	
Finger	36	
Foot	31	
Hand	4	
Intercostals	2	
Knee	35	
Leg	3	
Sacroiliac	3	
Shoulder	10	
Tendon	1	
Thumb	19	
Toe	11	
Wrist	33	
Miscellaneous	8	
Unclassified	<u>1</u>	461

Strain	
Abdomen	9
Ankle	47
Arm	5
Back	41
Eye	154
Foot	36
Knee	31
Leg	3
Muscle	33
Neck	1
Sacroiliac	21
Shoulder	11
Thigh	1
Thumb	4
Wrist	28
Miscellaneous	22
Unclassified	<u>2</u>
	<u>449</u>

Grand Total - - - - - 3515

RECAPITULATION

Pharyngitis	1263
Coryza	1132
Mycosis	1031
Verruca	750
Furunculosis	577
Bronchitis	450
Ceruminosis	338
Rhinitis	292
Conjunctivitis	194
Simusitis	185
Impetigo	173
Dermatitis	162
Albuminuria	158
Tonsillitis	155
Myositis	150
Stomatitis	138
Cyst	128
Tinea	120
Acne	107
Hordeolum	103
Otitis	103
Fatigue	94
Herpes	88
Painful arch, knee, etc.	79
Callosity	78

Constipation	77
Gastritis	77
Appendicitis	73
Clavus	72
Frostbite	71
Lagrippe	71
Indigestion	70
Urticaria	65
Adenitis	62
Gingivitis	62
Headache	58
Laryngitis	58
Ingrown nail	55
Enteritis	54
Flatfoot	52
Bursitis	51
Colitis	51
Metatarsalgia	50
Cellulitis	49
Dysmenorrhea	49
Scabies	49
Neuritis	46
Hemorrhoids	45
Ulcer	43
Epistaxis	42
Pediculosis	41
Underweight	38
Gastroenteritis	36
Paronychia	36
Angina, Vincent's	35
Bites and insect stings	35
Toothache	35
Arthritis	34
Neuralgia	32
Nevus	30
Asthma	28
Abscess	27
Cough	27
Astigmatism	26
Blepharitis	26
Excoriation	26
Insomnia	26
Peritonitis	26
Caries of tooth	25
Vaccinia	24
Tachycardia	24
Autointoxication	23
Fissure	23
Nervousness	23
Malaria	22

Tracheitis	22
Overweight	21
Deviation of nasal septum	20
Eczema	20
Hyperhidrosis	20
Fever	19
Flatulence	19
Hernia	19
Inflammation	19
Myalgia	19
Bronchitis	18
Influenza	18
Pruritis	18
Pustule	18
Vesicle	18
Bunion	17
Diarrhea	16
Irritation	16
Otalgia	16
Amenorrhea	15
Mumps	14
Poisoning	14
Torticollis	14
Ecthyma	13
Neurasthenia	13
Periostitis	13
Psoriasis	13
Rheumatism	13
Allergy	12
Cauliflower ear	12
Dandruff	12
Lumbago	12
Varicose veins	11
Edema	10
Phimosis	10
Urethritis	10

NINE CASES: Abdominal pain, Cystitis, Hay fever, Hemorrhage, Hypertension

EIGHT CASES: Concussion, Deafness, Epidermophytosis, Exostosis, Hypertrophy, Pleurisy, Weak Ankles

SEVEN CASES: Anemia, Carbuncle, Ganglion, Nausea, Nasal obstruction, Polyuria, Tumor

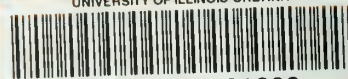
SIX CASES: Catarrh, Hiccough, Nephritis, Rales

FIVE CASES: Alopecia, Chap, Color blindness, Eustachian tube--obstruction of, Fainting, Folliculitis, Myopia, Neisserian infection, Swollen glands, Venipuncture, Vertigo

- FOUR CASES: Balanitis, Bradycardia, Epididymitis, Floating cartilage, Hyperopia, Malaise, Miliium, Neurosis, Paralysis, Psychosis, Tinnitus aurium, Vomiting
- THREE CASES: Adhesions, Anorexia, Chalazion, Chickenpox, Comedo, Eccymosis, Glossitis, Halitosis, Heart trouble, Hematuria, Regurgiation--mitral, Seborrhoea, Synovitis, Varicocele
- TWO CASES: Acidosis, Calculus, Chilblain, Chills, Corpus luteum, Cramp, Dysentery, Granulated eye, Heat rash, Hematoma, Hyperacidity, Hypermetropia, Hyper-thyroidism, Intestinal stasis, Iritis, Keloid, Lichen, Lymphangitis, Malaria, Myocarditis, Obesity, Orchitis, Omphalitis, Papilloma, Pyorrhoea, Sciatica, Scoliosis, Stiff neck, Stomachodynia, Tenosynovitis, Thyroid--enlarged, Trophic disturbance of skin, Vasomotor disturbance
- ONE CASE: Anaphylaxis, Ankylosis, Arthritis, Axillary node, Blindness, Curvature of spine--lordosis, Diphtheria, Fistula, Gas--chlorine, Gonococcus infection, Hirsutism, Hodgkin's disease, Hydrocele, Ichthyosis, Kidney stones, Leucorrhoea, Lipoma, Mucocoele, Narcolepsy, Nocturia, Nostalgia, Osteomyelitis, Peritonitis, Pterygium, Pyelitis, Pyuria, Rubella, Retraction of eardrum, Sarcoma, Stenosis--mitral, Sun stroke, Swollen face, Swollen legs, Vitiligo, Whooping cough

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