A STUDY OF STUDENT MORBIDITY

by

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The purpose of this study is threefold. First, to obtain statistics on the past medical history and physical condition of students entering the University; second, to study the morbidity rate and causes of absences from classes while in school, and third, to determine the relationship, if any, between the two.

To obtain these statistics I reviewed the records of one thousand students from the class of 1932, five hundred male and five hundred female. The records studied were chosen at random, excluding only those of students who had withdrawn from school for causes other than illness or physical disability.

A record was made of the past medical history, the findings noted during the routine physical examination at the time of entrance to the University, the student's relation with the health service during three years of University attendance, 1928-1929, 1929-1930 and 1930-1931, respectively. The student's relations with the health department were again divided into visits paid to the clinic and professional calls made on students at their lodgings; reported illnesses causing absences from classes, and days spent in the Student Infirmary during each of the three years, together with the causes for the same.

Necessarily, in a survey of this type, there are many sources of error. In the first place, many students do not remember what illnesses they had during childhood. Then, too, students do not know enough about their physical condition to enable them to tell

the examiner exactly what their trouble is. However, on the whole, this portion of the record is fairly accurate. It is interesting to note the observations made on the subject by Dr. R. L. Cunningham, et al. In the studies at the University of California the histories of two hundred and fifty students were rechecked at a time when there was no need of rush and when the student was well oriented, thus eliminating the nervous element entirely. It was found that the histories agreed in 85.95 per cent of the cases.

In a study of the illnesses of the students during their sojourn at the University however, error plays a most important role. Here we must take into consideration that all students are not honest and the medical excuse offers a very convenient method to cover up an absence from class due to an unprepared assignment or other non-medical reasons. The disease named as the cause of absence varies with the sex and season, men usually reporting gastro-intestinal upsets and the women reporting illness not stating its nature or cause, leaving it entirely to the imagination of the physician consulted.

Since in this survey I wish to attempt to establish relationship between past illnesses, physical findings at entrance examinations and illnesses during University attendance, certain conditions can be omitted. For instance, a gastro-intestinal upset has no bearing whatever on the past medical history unless it be of a special type. The days spent in the Student Infirmary by a football player with a sprained ankle, or by a student following a dental extraction certainly have no bearing on the past medical history of such student.

Such conditions as verruca, furuncolosis and Vincent's Angina frequently have no connection with past medical history and some conditions depend too much on the individual constitution of the student to be of much value in our study - one of these being dysmenorrhea, as some women always stay home during their menstrual periods and others never miss a class, though the intensity and severity of their periods be the same. Therefore, the statistics on this condition are variable, so much so as to be worthless. On the other hand if a student spent time in the University Infirmary with measles, small pox, mumps, etc. his record will show absence from classes because of these conditions. Or if a student gives a history of rheumatic fever with cardiac impairment we may find that he was forced to carry a reduced schedule, curtail his activities, or even withdraw from school because of the past medical history.

Since this observation covers only a thousand cases the results and conclusions regarding some conditions do not mean much. For instance, there was one case of malaria, but this does not mean that the incidence of malaria is one case per 1000 students, and in our study no student with tonsils present at the time of the routine examination reported sinusitis, but again this does not mean that only students without tonsils are susceptible to sinusitis. However, on the whole, I think that the figures covering colds, grippe, etc. are very reliable. (Grippe in our nomenclature is influenza).

I-PAST MEDICAL HISTORY

Table I following was prepared to show the various diseases reported in the histories of this group of students studied, together with their incidence in both men and women. It also shows the same factors for students who reported illnesses at the University Dispensary and those who did not.

Since it is impossible to diagnose with certainty diseases of the past while taking a history, certain diseases appear under general heads, such as renal, cardiac, or nervous diseases. At times there were physical findings at the routine examination which would definitely indicate the type of condition the student was describing. Then, too, if a student stated that he had kidney trouble and also stated it followed scarlet fever and physical examination showed either hypertension, albumin, oedema, or all of these, one would immediately form an opinion of the underlying pathology.

I think it is significant to note that among the students who reported no absences due to illness, only five per cent gave a history of tonsillitis, while those reporting absences show approximately forty per cent with a history of tonsillitis. The following table illustrates the possible bearing of past illnesses upon absences from University classes.

Disease	No Absences	Absences
Tonsillitis	5%	40%
Rheumatic fever	½%	3%
Cardiac	2½%	4%
Renal	½%	3%

On the other hand some diseases were more frequent in the non-absent group, as shown below:

Disease	No Absences	Absences
Mumps	59%	51%
Measles	51%	48%

In a study of the cause of absences one finds that the above two conditions play no small part, even though at the end of the three year period the two percentages will not be equal.

TABLE I

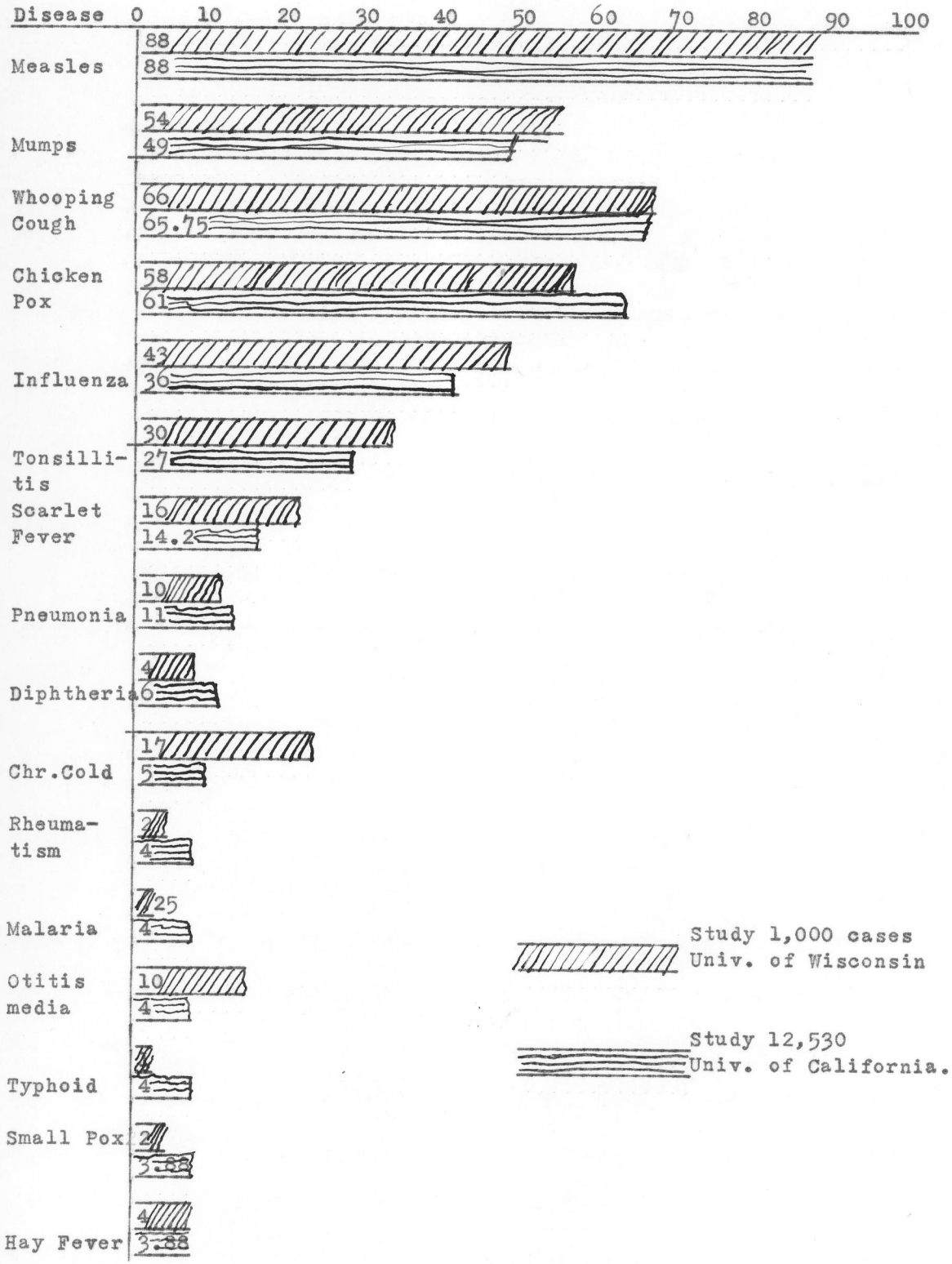
PAST ILLNESSES OF 1,000 STUDENTS

Group I - those who reported no illness at Student Clinic during 3 years.
Group II- those who reported illness at Student Clinic.

	126 Men		374		100 Women		400		% per	500 Total	1500
Disease	No.1	5	No.2	%	No.1	%	No.2	%	1,000	% Men	%Women
Measles	107	85	285	83	85	85	368	92	85	84	88
Mumps	83	63	180	48	54	54	216	54	55	56	54
Whooping cough	60	47	149	40	57	57	295	76	54½	43	66
Chicken pox	56	44	146	39	58	58	234	58	50	42	58
Scarlet fever	16	13	51	10	14	14	76	19	13	11	16
Influenza	50	40	120	33	40	40	120	33	36	36	36
Pneumonia	11	8	38	10	7	7	54	13	9½	9	10
Otitis Media	8	6	17	5	9	9	44	11	7½	5	10
Tonsillitis	0	0	120	33	10	10	182	45	30	17	27
Diphtheria	13	9	14	4	3	3	16	5	5½	7	4
Hay Fever	5	2	10	2	1	1	24	6	3	2	4
Asthma	2	1	3	1	0	0	12	3	1½	1	2
Small pox	6	4	12	4	0	0	15	4	3	4	2
Cardiac	1		12	4	5	5	16	4	3	2	4
Rheumatic fever	0	0	11	3	1	1	10	2	1½	1	2
Quinsy	0	0	6	2	1	1	7	2	1½	1	2
Pleurisy	1		14	5	3	3	12	3	2½	2	3
Sinusitis			4	1	2	2	2		½		1
Chorea	3	1	1		2	2	3	1	½		1
Poliomyelitis			4	1	1	1	6	2	½	-	1
Renal			11	3	1	1	13	3	1½	1	2
Typhoid fever	0		4	1	1	1	3	-	½	-	1
Bronchitis	2	1	6	2					½	1	
Chronic cold	16	13	65	16	13	13	83	20	10½	14	17
Peptic Ulcer	-	-			1	1	1	-	-	-	½
Gall Bladder			1	-	1	1	4	1	½	-	1
Empyema			2	-	1	1					½
Tbc.Adenitis							1				
Colitis							2				
Chr.Appendicitis	3	1	2	-			3				
Cystitis			1				5	1	½		1
Malaria			2				1				
Hypertension	4	2	2	-					½	1	
Nervous					1	1	1		½		1
Tonsillectomy	63	48	151	40	47	47	202	50	46	44	49
Small tonsils	15	12	45	12	9	9	31	8	10	12	8
Large tonsils	13	9	30	7	14	14	41	10	10	8	12
Large & cryptic	16	13	40	10	16	16	62	15	13	11	15
Small & cryptic	12	8	22	6	4	4	29	7	6¼	7	6
Appendectomy	14	11	23	6	8	8	33	8	8	8	8
Hernia			6	1							
Nephrectomy			1								
Mastoidectomy			4	1	1	1	4	1	½		1
Septal Spurs	11	8	47	13			6	1	5	10	
Athletes	12	8	47	13					5	10	

Conditions	Number of Cases
Submucous Resection	1
Trachoma	1
Mastoidectomy	9
Varicosities	1
Frolich's syndrome	1
Hypothyroidism	2
Hyperthyroidism	1

For a compairson Table II shows the results of a survey made by Dr. R. L. Cunningham on 12,530 students at the University of California. This table shows the occurrence of the various diseases as given in the past medical history at that institution. One finds that there is very little difference in the common diseases with the exception of "colds" in which the incidence is only half that reported at our own institution. The California figures cover 12,530 female students and Wisconsin figures cover 500 female students.


Disease
0
10
20
30
40
50
60
70
80
90
100
Measles
88
88
Mumps
54
49
Whooping Cough
66
65.75
Chicken Pox
58
61
Influenza
43
36
Tonsillitis
30
27
Scarlet Fever
16
14.2
Pneumonia
10
11
Diphtheria
4
6
Chr.Cold
17
5
Rheumatism
2
4
Malaria
25
4
Otitis media
10
4
Typhoid
4
Small Pox
2
Hay Fever
4
Study 1,000 cases
Univ. of Wisconsin
Study 12,530
Univ. of California.

II-STUDENT ILLNESSES

A glance over Tables III, IV and V following gives one an idea of the various illnesses affecting the students, also the frequency and severity of each. In addition, Table V shows the incidence of each condition per year. Since the diseases covered by Table IV caused only absences from classes due to confinement in the Student Infirmary (or confinement in some other hospital), the table is so arranged to show the incidence or number of cases and the days lost.

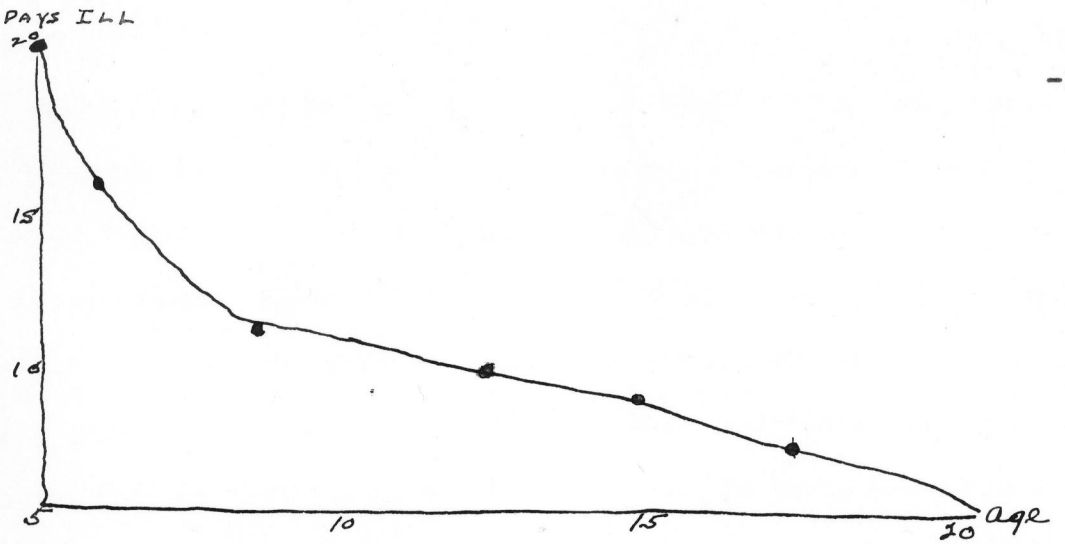
There are two striking things noted. First, some diseases or conditions cause many reported absences from classes and no such absences due to stay in the Student Infirmary, while other conditions cause only the latter; and, second, there is a gradual diminution from year to year of visits paid to the University Dispensary and absences reported, with little change in all conditions except asthma in number of days spent at the Student Infirmary (Table V). In the case of asthma the number of days spent at the Infirmary dropped to zero after the first year and hay fever followed this same drop. In asthma and hay fever the decrease in the number of days spent in the Infirmary is readily explained, namely a student reports at the Dispensary with one of these conditions, he is given the most thorough and best treatment science can provide; careful skin tests and desensitization,whenever possible, practically eliminate this condition before a student reaches his sophmore year.

There were no absences due to stay in the Infirmary because

of headache. The reason is obvious. This is a symptom, and yet headache ranks fourth as cause of absences from classes and is found usually more frequently only in women. (Table III) There may be several explanations for this and menstrual difficulties undoubtedly play a large part in this complaint.

Fatigue may be a maladjustment of the student to his new environment. It occurs most frequently in women in the first semester of their freshman year. However one finds some absences due to this condition in all three years of school. Often times the student's health card definitely states that the student had been working exceedingly hard for an examination.

There is a marked decrease in the incidence of colds and grippe during this three year period (Table V). Is this due to a natural yearly variation, to an increased resistance of the students as they grow older or increased home medication. In studying the statistics of other men, notably those of Dr. Charles C. Wilson, it would seem that the age increases from five years the incidence or morbidity decreases. This can be seen from the following table prepared by Dr. Wilson.



I think the most important factor in the gradual decrease of absences due to reported illness is the fact that as the student reaches the upper classes, as in the Graduate School, excuses for absences are not required by the instructors. That is why the number of days spent in the Infirmary does not decrease in the same proportion as reported absences.

By far the most frequent cause of absence from class and for visits to the Student Clinic is the common cold. Colds and grippe (influenza) are responsible for over one-half of all the calls made at the Student Dispensary and for absences from classes. At the same time it is ordinarily one of the conditions which is given the least attention by the average general practitioner. Not only is the incidence of colds to be considered, but theircomplications and sequelae. Every case of sinusitis was preceeded by a cold; every case of bronchitis was preceeded by a cold, and so on until almost every disease is mentioned. Whether the presence of the cold and the complications are both due to the same condition, viz. Lowered resistance or whether the cold paves the way for the secondary

condition is a matter of conjecture. That they go hand in hand is a known fact. Many so-called "colds" are symptoms of certain minor infections. Smith reported on absences in a Brookline, Massachusetts, boy's school during the three years 1917-18, 1918-19, 1919-20 and of the absences reported 54.54 and 40 per cent were due to colds, respectively. During school years 1919-1922 studies were made of absences at St. Paul's School, Concord, New Hampshire; the per cents of days lost were 4.26, 3.15 and 3.25, respectively, of which 2.27, 0.91 and 2.39 were due to colds. In the study of illness among grade school children made by Dr. C. C. Wilson he considered only illnesses lasting three days or longer and found that colds contributed 37.4 per cent of the total in a group of children among whom the acute infectious exanthemata was still common.

In the clinical records used in this study grippe is understood to be the clinical entity usually called influenza. Grippe runs its course with marked constitutional symptoms, general malaise, leukopenia and usually requires bed rest, while a cold has marked local upper respiratory symptoms, a slight leucocytosis, and tends to permit the patient to be ambulatory.

Disease	Calls at the Clinic	Absences	Days in Infirmary
Cold	564	835	190
Grippe	22	233	139.

In addition, when grippe is complicated by another disease, such as pneumonia, the course of the complication is usually very severe and

convalescence is protracted.

All the other diseases can be considered as a group because their incidence is too small to make a yearly study of any value and there is not enough difference in incidence between the sexes to be of any importance. Rheumatic fever, tuberculosis and pneumonia rate first as causes for extended time spent in the Student Infirmary (Table IV)

Some conditions instead of necessitating long infirmary care cause only partial disability but that is sufficient to make it advisable for the student to carry a reduced academic schedule. Among this group organic heart lesions take first place, several students having to carry reduced schedules while others are forced to withdraw entirely. Tuberculosis and rheumatic fever also caused withdrawals following extended confinement in the Student Infirmary.

TABLE III

STUDENT ILLNESS

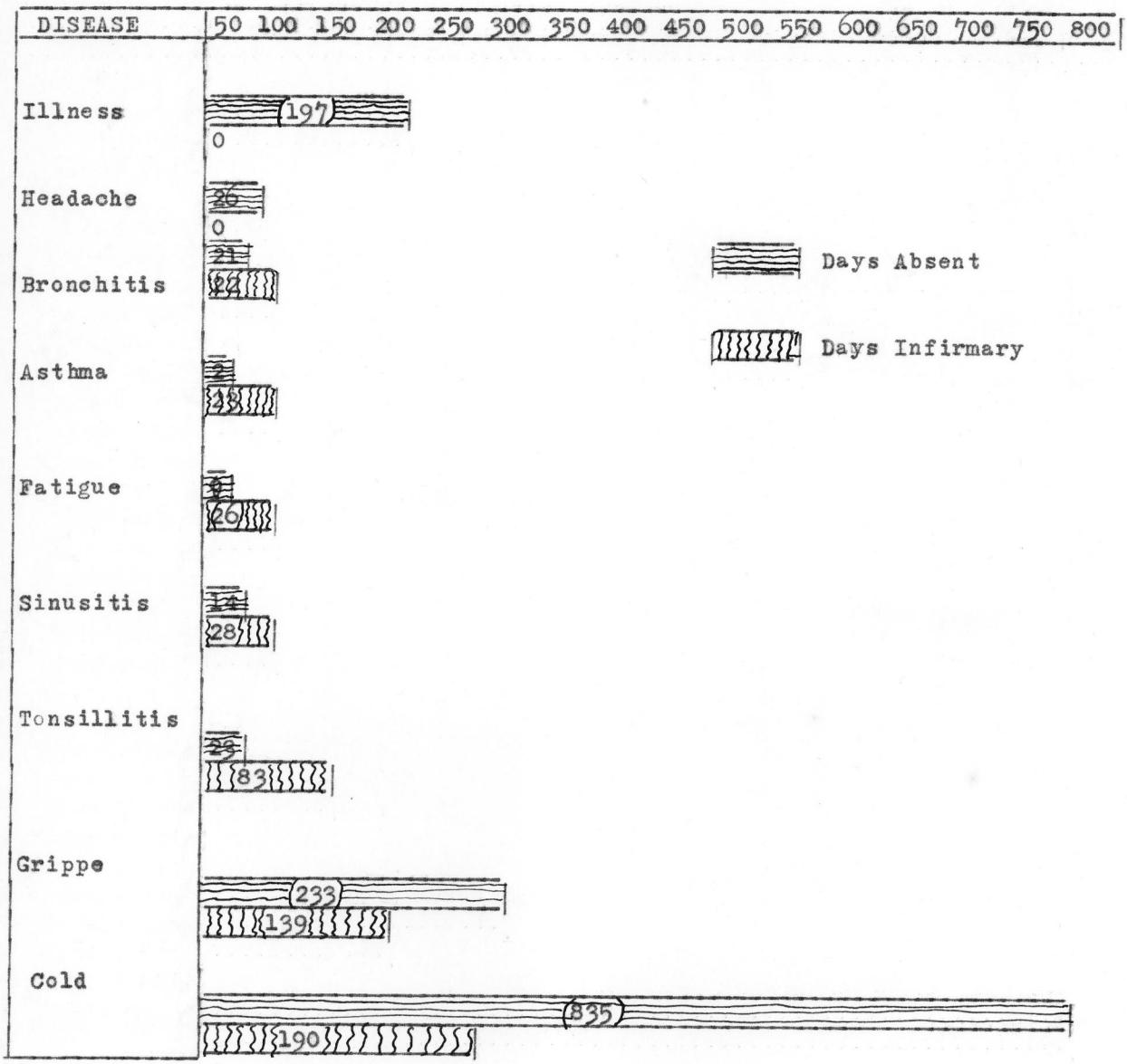


TABLE IV

INFECTIOUS DISEASES AND OTHER CONDITIONS

1000 Cases.

Disease	Men		Women		Total	
	No. of Cases	Days in Infirmary	No. of Cases	Days in Inf.	No. of Cases	Days in Inf.
Measles	2	28	2	32	4	60
Mumps	2	28	2	24	4	52
Rheumatic fever	1	180	3	59	4	289
Rubella	1	13	1	13	2	26
Infectious Mono.	2	16	1	17	3	33
Chicken pox	1	12	1	14	2	27
Pneumonia	2	110			2	110
Colitis	1	2	2	8	3	10
Diphtheria	1	15	1		1	15
Otitis media	1	15	1	5	2	20
Tuberculosis	2	180			2	180
Fungus inf.chest			1	30	1	30
Bronchiectasis			1	7	1	7
Organic heart dis.			1	15	1	15
Quinsy	1	7	2	6	3	13
Observation			2	12	2	11
M.D. Insanity				1	1	
Malaria				1		
Pituitary Dysfunc.	1	2			1	2
Hypertension	1	2			1	2
Nephritis	1	3			1	3
Pyelitis	1	10			1	10
Thyrotoxicosis	1	5	1		2	5
Inf.Hydronephrosis			1	90	1	90
		SURGICAL CONDITIONS				
Chr.Appendicitis	2	9	8	24	10	33
Appendectomies	5	74	6	69	11	142
Tonsillectomies	8	32	17	35	25	67
Gall bladder	1	7			1	7
Submucous resection			2	4	2	4
Ovarian cyst			1	4	1	4
Herniotomy	1	14			1	14
Peptic Ulcer	2					
Cyst	1				1	
Nervousness	1	13			1	13
Insomnia	1	3			1	3

TABLE V-ILLNESSES WHILE IN SCHOOL

TOTAL OF ALL REPORTED CASES

Sex	1928-1929			1929-1930			1930-1931		
	Calls	Absences	Inf.	Calls	Absences	Inf.	Calls	Absences	Inf.
Male	163	353	500	106	170	406	59	89	127
Female	182	431	64	155	256	201	64	201	140
Total	345	784	564	261	426	607	123	290	267

TOTAL FOR 3 YEAR PERIOD

SEX	CALLS	ABSENCES	INFIRMARY
Male	334	612	1033
Female	301	888	405
Total	755	1500	1438

COLDS

SEX	1928-1929			1929-1930			1930-1931		
	Calls	Absences	Inf.	Calls	Absences	Inf.	Calls	Absences	Inf.
Male	141	175	38	86	98	18	44	65	5
Female	125	210	37	116	163	61	52	106	31
Total	266	385	75	202	261	79	96	171	36

TOTAL FOR 3 YEAR PERIOD

SEX	CALLS	ABSENCES	INFIRMARY
Male	271	338	61
Female	293	497	129
Total	564	835	190

GRIPPE

SEX	1928-1929			1929-1930			1930-1931		
	Calls	Absences	Inf.	Calls	Absences	Inf.	Calls	Absences	Inf.
Male	4	84	30	1	14	5	1	12	27
Female	14	85	38	3	20	8		18	31
Total	18	169	68	4	34	13	1	30	58

TOTAL FOR 3 YEAR PERIOD

SEX	CALLS	ABSENCES	INFIRMARY
Male	5	110	62
Female	17	123	77
Total	22	233	139

TONSILLITIS

SEX	1928-1929			1929-1930			1930-1931		
	CALLS	Absences	Inf.	Calls	Absences	Inf.	Calls	Absences	Inf.
Male	3	5	28	4	6	3	5	3	22
Female	4	2	13	4	5	8	1	2	9
Total	7	7	41	8	11	11	6	5	31

TOTAL FOR 3 YEAR PERIOD

Sex	Calls	Absences	Infirmary
Male	12	14	53
Female	9	9	30
Total	21	23	83

SINUSITIS

SEX	1928-1929			1929-1930			1930-1931		
	Calls	Absences	Inf.	Calls	Absences	Inf.	Calls	Absences	Inf.
Male	2	0	7	5	4	2	3	0	3
Female	2	2		3	8	13	1	0	3
Total	4	2	7	8	12	15	4	0	6

TOTAL FOR 3 YEAR PERIOD

Sex	Calls	Absences	Infirmary
Male	10	4	12
Female	6	10	16
Total	16	14	28

BRONCHITIS

SEX	1928-1929			1929-1930			1930-1931		
	Calls	Absences	Inf.	Calls	Absences	Inf.	Calls	Absences	Inf.
Male	1	8		4	7				10
Female	7	1	13	2	3	9		2	
Total	8	9	13	6	10	9		2	10

TOTAL FOR 3 YEAR PERIOD

SEX	Calls	Absences	Infirmary
Male	5	15	10
Female	9	6	22
Total	14	21	32

ASTHMA

	1928-1929			1929-1930			1930-1931		
SEX	Calls	Absences	Inf.	Calls	Absences	Inf.	Calls	Absences	Inf.
Male			10	1		6	1		
Female	1	1	7	1			1		
Total	1	1	17	2		6	2		

TOTAL FOR 3 YEAR PERIOD

SEX	Calls	Absences	Infirmary
Male	2	1	16
Female	3	1	7
Total	5	2	23

TABLE V

CONDITIONS REPORTED BY WOMEN ONLY

HEADACHE

YEAR	CALLS	ABSENCES	INFIRMARY
1928-1929	9	8	0
1929-1930	11	10	0
1930-1931	4	8	0
Total	24	26	0

FATIGUE

YEAR	CALLS	ABSENCES	INFIRMARY
1928-1929	9	2	21
1929-1930	2	5	0
1930-1931	3	2	5
Total	14	9	26

ILLNESS

YEAR	CALLS	ABSENCES	INFIRMARY
1928-1929	8	125	0
1929-1930	3	37	0
1930-1931	1	35	0
Total	12	197	0

RELATION BETWEEN ILLNESS AND PAST MEDICAL HISTORY

The relationship between the past medical history and student illness is best shown by comparing the past medical histories of the students reporting no illnesses with those reporting illnesses (See Table I). One finds that measles, mumps, whooping cough are slightly higher among the students who reported no illnesses and that pneumonia, asthma, tonsillitis, pleurisy, etc. were higher among the group reporting illnesses.

Many of the students who carried reduced schedules due to their physical condition previously had had rheumatic fever, and showed cardiac lesions at routine physical examination.

The most significant finding in the histories given by the students were those referring to tonsils. This, we feel, is important enough to deserve an entire table of statistics (See Table VI).

TABLE VI

STATISTICS RELATING TO TONSILLAR CONDITIONS

GROUP	Tonsillectomies	
	Cases	Per cent
I - Students who reported no illnesses	110	47½
II- Students who reported illnesses	353	45
Students having had tonsillectomies	463	46
Students not having had tonsillectomies	537	53

CHART SHOWING TYPE OF TONSILS IN RELATION TO TONSILLECTOMIES AND TONSILLITIS

	No.of Cases	Type of Tonsils									
		Small		Large		Small & Cryptic		Large & Cryptic		None	
Tonsillectomies	33	3	4%	13	20%	4	5%	13	20%	3	4%
Tonsillitis	34	3	9%	5	15%	3	9%	10	30%	4	12

CHART SHOWING INCIDENCE OF VARIOUS ILLNESSES IN STUDENTS WHO HAD HAD TONSILS REMOVED ON ADMISSION AND OF STUDENTS WHO HAD NOT HAD TONSILS REMOVED.

COLDS

	Calls at Clinic		Absences Reported		Days in Infirmary	
	No.	Rate per 1000 Stu.	No.of Days	Days per 1,000	No.of Days	Days per 1,000
Tonsils removed	316	663.6	442	928.2	105	220.5
Tonsils in	448	264.2	393	707.4	85	143.0

GRIPPE

	Calls at Clinic		Absences Reported		Days in Infirmary	
	No.	Rate per 1000 Stu.	No.of Days	Days per 1,000	No.of Days	Days per 1000 Stu.
Tonsils removed	10	21.0	110	241	83	187
Tonsils in	12	21.5	123	221.4	56	100

BRONCHITIS

	Calls at Clinic		Absences Reported		Days in Infirmary	
	No.	Rate per 1000 Stu.	No.of Days	Days per 1000 Stu.	No.of Days	Days per 1000 Stu.
Tonsils removed	8	16.8	3	6.3	28	58
Tonsils in	6	10.8	18	32.4	4	9.6

SINUSITIS

	Calls at Clinic		Absences Reported		Days in Infirmary	
	No.	Rate per 1000 Stu.	No.of Days	Days per 1000 Stu.	No.of Days	Days per 1000 Stu.
Tonsils removed	11	23	3	6.3	28	58
Tonsils in	5	9	11	19.8	0	0

"ILLNESS"

	Calls at Clinic		Absences Reported		Days in Infirmary	
	No.	Rate per 1000 Stu.	No.of Days	Days per 1000 Stu.	No.of Days	Days per 1000 Stu.
Tonsils removed	8	16	79	166		
Tonsils in	4	7	118	212		

HEADACHE

	Calls at Clinic		Absences Reported		Days in Infirmary	
	No.	Rate per 1000 Stu.	No.of Days	Days per 1000 Stu.	No.of Days	Days per 1000 Stu.
Tonsils removed	7	14.7	9	18.9		
Tonsils in	17	30.0	17	30.0		

FATIGUE

	Calls at Clinic		Absences Reported		Days in Infirmary	
	No.	Rate per 1000 Stu.	No.of Days	Days per 1000 Stu.	No.of Days	Days per 1000 Stu.
Tonsils removed	1	21	1	21	26	54
Tonsils in	13	23	8	14	0	0

CHRONIC APPENDICITIS

	Calls at Clinic		Absences Reported		Days in Infirmary	
	No.	Rate per 1000 Stu.	No.of Days	Days per 1000 Stu.	No.of Days	Days per 1000 Stu.
Tonsils removed	3	6.3	18	37.8	30	63
Tonsils in					3	5.4

TONSILLITIS

	Calls at Clinic		Absences Reported		Days in Infirmary	
	No.	Rate per 1000 Stu.	No.of Days	Days per 1000 Stu.	No.of Days	Days per 1000 Stu.
Tonsils Removed	0	0	1	21	13	27.3
Tonsils in	21	35.1	22	36.9	70	126.0

OTHER CONDITIONS

Diseases	Tonsils in		Tonsils Removed	
	No.Cases per 1000	Days Inf. per 1000	No.Cases per 1000	Days Inf. per 1,000
Tuberculosis	4.2	378.0		
Rheumatic fever	6.3	443.1	1.8	50.4
Pneumonia	2.2	105.0	1.8	90.0
Infectious Mononucleosis	4.2	33.6	1.8	30.6
Colitis	2.1	4.2	3.6	14.4
Diphtheria			1.8	27.0
Measles, German	4.2	58.8		
Mumps	6.3	77.7	1.8	27.0
Chicken pox	2.1	25.2	2.1	25.2
Measles	2.1	37.8	5.4	75.6
Appendectomies	10.5		10.8	
Tonsillectomies	10.5		36.0	
Fungus Infection of lung	2.1	27.0		
Absences in Infirmary	4.2	22.4		

Before going into my findings or conclusions, I would like to quote the results of Dr. R. L. Cunningham's study of 12,350 University of California students. They are as follows:

1. Students having had tonsillectomies give a history of more infections than students with normal or pathological tonsils.

2. The condition of the tonsils, whether normal, absent or pathological, does not appear to affect the height or weight correction as based on the age-height ratio; the chest capacity, heart rate, blood pressure, thyroid condition, posture, character of plantar arches, the number of teeth filled or absent

and the number and character of eye defects or the menstrual history of young women.

3. There is a definite relationship between the tonsil condition and the history of

   a. Rheumatism
   b. Neuritis
   c. Heart Trouble
   d. Chorea
   e. Otitis media
   f. Mastoid operations
   g. Appendicitis with or without operation
   h. Operations on glands of the neck
   i. Nasal operations

In each instance the incidence is higher for the group with tonsils absent than for the group with tonsils normal, or thegroup with pathological tonsils."

Dr. Cunningham's observations, however, cover only the past medical history. Statistics obtained in this three year study show still more clearly the incidence of illness is higher in the group with tonsils removed.

47½ per cent of the students without illness and 45 per cent with illness reported tonsillectomies in thier past medical history. Of the 1,000 students studied 46 per cent reported tonsillectomies. The nearness of these figures shows that tonsillectomies played no part in the health of students without illnesses.

A study of the incidence of the various diseases is surpris-

ing. In the group with tonsillectomies, colds increased 46 per cent, grippe increased 47 per cent; and all absences due to sinusitis belong in this group having had tonsillectomies. No matter hwat disease one considers, except measles and tonsillitis, its incidence is higher in the group having had tonsillectomies. Even chronic appendicitis shows a higher morbidity rate in the tonsillectomy group. Before one can draw any conclusions, however, one must investigate the past medical history of this group. Perhaps these people had more illnesses to begin with. Table VII will give us some idea of the bearing of the past illnesses. The incidence of measles and chronic colds is higher in the group who did not have their tonsils removed. All the other conditions were more common in the group having had tonsillectomies. This is notably true of cardiac conditions, tonsillitis, influenza and chicken pos.

It is peculiar to note that less chronic colds were reported in the group having had tonsillectomies.

TABLE VII

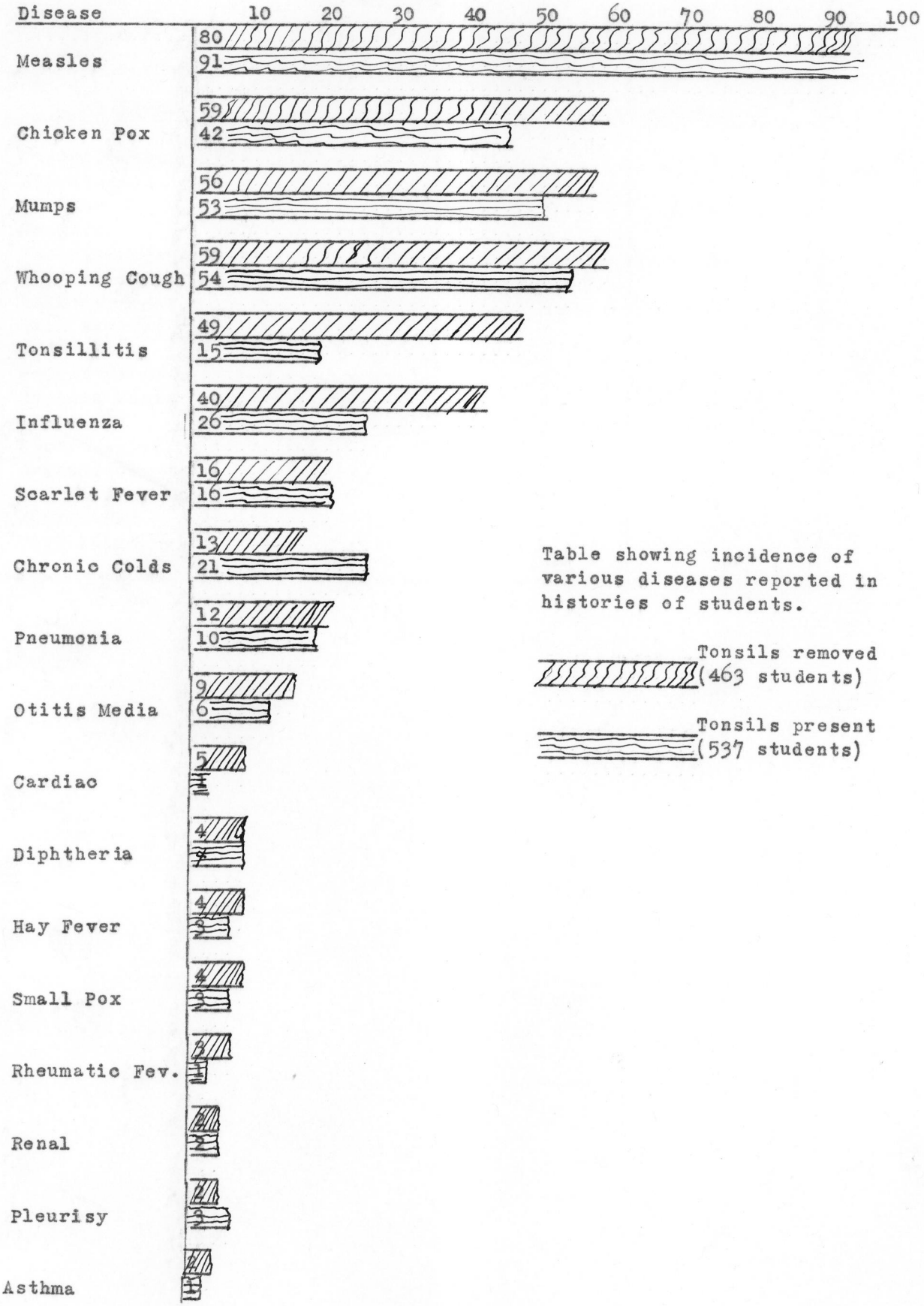


Table showing incidence of various diseases reported in histories of students.

Tonsils removed (463 students)

Tonsils present (537 students)

Number of Cases Reported

DISEASE	Tonsils Removed	TOnsils In
Mastoidectomy	8	1
Sinusitis	5	3
Chorea	6	4
Cystitis	5	1
Chronic appendicitis	5	3
Organic heart lesion	4	-
Poliomyelitis	4	6
Gall Bladder	3	2
Malaria	2	1
Peptic Ulcer	2	0
Typhoid Fever	2	6
Colitis	2	0
Hypertension	2	6
Bronchitis	1	7
Tuberculous Adenitis	1	0
Empyema	1	2
Thyroidectomy	1	0

CONCLUSIONS

The presence of measles, mumps, whooping cough and chicken pox in the past medical history of a student has no bearing on his morbidity record at the Health Service. This is shown by comparing the incidence of the diseases named above in the histories of the students reporting no absences from classes and those who did.

Among the not uncommon illnesses recorded after matriculating in the University are measles, mumps and chicken pox. Since these diseases usually confer a lasting immunity it is, from the standpoint of morbidity, advantageous to have had them before entering the University.

While most of those students who reported chronic colds at the routine entrance examination were subject to this condition throughout the three year period; the morbidity due to colds in this group was not higher than in the group which was not subject to chronic colds.

On the other hand almost every student who suffered from tonsillitis during the period of enrollment at the University gave a history of that disease at the entrance examination. It is also interesting to note that a goodly per cent of students subject to tonsillitis during the three year period of this survey not only gave a history of tonsillitis but had had tonsillectomies as well.

Rheumatic fever while not causing marked time lost from

classes in proportion to some other diseases is very important because of the slow convalescence and serious complications. A large number of students withdrawing from school due to illness gave a history of rheumatic fever with some of its complications.

Again, it is interesting to note that practically every case of rheumatic fever found in this survey was in a student who had had his tonsils removed before enrollment at the University.

Students having had tonsillectomies show a higher morbidity rate than those students who have not had tonsillectomies. This is particularly true of sinusitis and colds. Whether this increased morbidity is due to the tonsillectomy or both are the result of a lowered resistance is hard to say. Studying the past medical history of students with tonsillectomies shows a general increase in the incidence of all diseases except tonsillitis and chronic colds.

The curve of incidence of appendicitis follows that of the acute upper respiratory infections. I could establish no relation between tonsillectomies and appendectomies.

Other interesting relationships noted were that students who gave a history of pneumonia were more susceptible to colds that those students who had not had that disease. The majority of students previously having had pneumonia were from rural communities.

On the whole, athletes are healthier than students who are

not athletes. (By athletes I mean students who participate in some form of athletics which requires a physical examination such as football, track, base ball, etc.). The occurrence of hypertension is four times as common in athletes as in non-athletes.

The majority of students with the diagnosis of neurosis, neurocirculatory asthenia or psychoneurosis were Jewish, particularly of Russian ancestry.

While women reported more absences from classes than men, the men spent more days in the Student Infirmary. The causes of morbidity of the two groups were essentially the same, except that women reported vague conditions such as "fatigue" or "illness" more often than men.

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