

PULMONARY TUBERCULOSIS - WITH SPECIAL
EMPHASIS OF IT AMONG COLLEGE STUDENTS

X.

Ruth Carlson

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Present day programs for the prevention and cure of tuberculosis which is one of man's worst plagues is an evolution of many many years past.

As the world grows older it is gradually unravelling some of the mysteries of this disease which was historically known as consumption. It is mentioned in early writings and evidences of it are found in the remains of our pre-historic ancestors. (1) Chinese history mentions it about 550 B.C.

All our knowledge of medicine of ancient times dates from our Greek "Father of Medicine"- Hippocrates (460-357 B.C.) Instead of contributing the cause of disease to Gods as did his predecessors and contemporaries, he used his mind as a means of diagnosis. He gave a fairly good description of consumption and noticed that the disease usually started in winter, and that the cough was a symptom. It is interesting to notice that he discovered the ages most common for the disease was between 18-35 years.

There is a large gap in years between Hippocrates time and the period when scientific medicines and methods were applied to the diagnosis and treatment of the disease.

One of the earliest and most important, if it is at all possible to classify these great events as to their logical importance, was the construction of the very simple but

(1) "Founders of Our Knowledge of Tuberculosis"
Hygeia, Oct. 1929

efficient microscope by the Dutch Naturalist, Leeuwenhoek at the beginning of the 18th century. The tubercle bacillus being so small is only visible by use of the microscope.

Another early but comparatively recent step in historical tracing of some of the diagnostic methods of Tuberculosis was the turning out of the first monaural stethoscope in 1815 by Rene Laenner. This was the forerunner of the modern binaural stethoscope used and carried by every practicing physician today. Most of the modern terms describing the findings both normal and those due to disease in the chest were originated by Laenner.

In 1882, Robert Kock, of Berlin, Germany was first able to grow the tubercle bacillus, the germ causing tuberculosis, and demonstrated its development by growing mediums and injecting animals with the culture. Pasteur explained the opinions of many at the time when he said, "C'est un grand progrès." (1) In 1890 Kock described the valuable tuberculin which is an important diagnostic agent.

George Cornet, an assistant to Robert Kock, demonstrated that the dust from rooms of infected persons could infect animals with the disease.

Carl Fleugge, in the latter part of the nineteenth century demonstrated that it was the moist droplets expelled by the infected person during talking, coughing and sneezing that carried the bacillus.

In 1895 Professor Rontgen of the University of Wurzburg

(1) "Founders of Our Knowledge of T.B." Hygeia, Oct. 1929.

elaborated upon former attempts and introduced for the first time the use of the xray machine. Most cases of Tuberculosis could be detected by this means and the extent of it could be recognized .

It is from step to step that events such as these are opening the eyes of the world to the protective measures of both children and adults so the morbidity and mortality curves for tuberculosis are on the whole undergoing a gradual decline.

Further important steps in the control of tuberculosis brings in the first American sanatorium which was established in the Adirondack Mountains in 1882 by Dr. Edward L. Trudeau. Hundreds of sanatorium and consequently saving of many lives has resulted from his work. Fresh air, nutrition and rest were the three emphasis of the sanatorium and remain so today.

Artificial Pneumothorax or collapsing of the lung which has proven to be very efficient treatment in advanced stages of tuberculosis was worked out between 1885 and 1905 by Pierre Carl Edward Patain, a French physician, and Prof. Ludolf Brauer of Germany.

Clemens Von Pirquet, a young Viennese physician, in 1907 proved the value of a specific agent in diagnosing tuberculosis by a skin test method. It is called the Pirquet test (1).

(1) Founders of Our Knowledge of T.B. Hygeia Oct. 1929

A point which is of vital importance and should be emphasized when any phase of tuberculosis is talked, read, or written about is that tuberculosis is a communicable disease. Every case comes from another case. (1) It is caused by a very little germ, the tubercle bacillus which is a small rod shaped microorganism. It belongs to the vegetable kingdom although it is often spoken of as being a "bug". The smallness in size is made up for by it's greatness in number; there are thousands of them in a single drop of sputum when the disease is advanced. (12).

"Consumption", as was mentioned is an old-fashioned word which was used for the late stages of tuberculosis when the patient was wasting away or being "Consumed". Tuberculosis today does not mean what consumption used to mean, because the doctors usually make the diagnosis much earlier when the hope of early cure is very much brighter. All consumption is tuberculosis but all tuberculosis is not consumption. The treatment is better understood now and many cases of consumption get well who would have died twenty years ago, but it is a longer and harder job to get well in the late stages than it is at first.

Tuberculosis may affect any part of the body—the glands, joints, bones, kidneys, larynx, intestines; but ⁽³⁾as most prevalent in the lungs and consequently is what this paper deals with.

- (1) and (3) Tuberculosis and How to Combat it"—Pottenger
(2) Some Things Worth Knowing About T.B. —N. Barlow

It is hard for us at first, especially for the infected people to realize that there are joyful sides to the disease and we can be thankful for these facts, namely that tuberculosis is not inherited and that it is both preventable and curable. Many teachers, health educators as well as college students have a fear of tuberculosis that is not justifiable. This has been termed a "hangover" from the days when it was believed that this disease was inherited and inescapable and that to have it meant death. None of this is true and along with many other superstitions they should have been forgotten long ago. (1)

Much has been said about the desirability of facing facts in health and hygiene. It has been tested and proven that students are the most willing and ready to face facts.

Tuberculosis as will be shown a little later in this paper is the leading cause of deaths in young people. Since students in college, high school and even younger can and are willing to face the facts there should be a stressing and repeated use here of the old proverb, "An ounce of prevention is worth a pound of cure". Since the prevention is plain enough for all to understand each individual must be encouraged to do his part.

"Anyone may have active clinical tuberculosis, no one is too old or too young; too fat or too thin; too strong or too weak; too rich or too poor. It comes to the city dweller and also to the dweller in the country. No one is immune. (2)

(1) "Youth Will Face Facts"- Strachan, Hygeia, May 1934

(2) T.B. and How to Combat It"-Pottenger

Pulmonary tuberculosis produces symptoms on the lung and also on other organs. The functions of the lung are to take up oxygen from the air and transmit it to the blood and to take poisons from the blood and give them back to the air. The lung area is much larger than it need be. In fact one can get along fairly comfortable on one-half of his lung area, and can exist on about one-twelfth. Therefore tuberculosis involvement of varying proportions can be present in the lungs without producing a recognizable interference with it's functions.

Infected patients as a rule feel tired and show a decrease in strength, weight, and resistance and are usually troubled with a cough. Neither these nor any other single symptom is always present. The disease has varying ways of showing itself. People often have the idea that they must cough or spit blood or have a pleurisy or lose weight in order to be tuberculous; but this is based on those long disproved ideas of the disease.

The leaders in the fight against tuberculosis are emphasizing the early diagnosis of the disease for the best chance of cure. The work in the health department of our universities, which will be explained in detail a little later, is an excellent means of checking because it locates early cases and reaches so many students at the infectious age and also the routine is very thoroughly carried out in most of our educational institutions.

Tuberculosis differs from all other infectious diseases

in one outstanding respect. When a person takes into his body the germs of such a disease as typhoid fever, the body deals decisively with the organism; his resistance either destroys the germs or is overcome with them and develops active typhoid fever. If he recovers he does so in a few weeks and does not go on for months or years with chronic typhoid fever. (1)

In the case of active tuberculosis, he may become ill from an infection that has taken place a month, a year or many years before, or he may carry the disease all his life and not know it.

Every infected person has become so from contact with a person of active tuberculosis although at the time they may not know they have it.

In spite of the infection then, a person can continue in health, and the infection remains inactive. But when certain conditions develop it is capable of becoming active. It is during this active stage that the tubercle bacilli are spread unless the disease is recognized and precautions taken against the infection of others.

It is found that people in the best of health may develop active tuberculosis, but in the majority of cases the predisposing factor is diminished resistance, due to what is called a "run-down condition"- loss of vigor resulting from anxiety, worry, poor nutrition, and poor living conditions. (2)

(1) & (2)- Am. Student Health Proc.- Dr. Haggard, 1931

Two interesting theories of the predisposing causes of tuberculosis are contrasted in Dublin's well known book entitled "Health and Wealth". Conclusions from a group of workers on one theory is that tuberculosis developed because of weakened defenses of the individual. This might be due either to undesirable conditions of the organic and physical environment or to a weakened personal constitution, or to both. Therefore they emphasized the constant improvement of the status and personal hygiene of the people.

The other theory minimizes the importance of the environmental factors and emphasize the importance of the genetic or constitutional side. They insist that the tendency to have tuberculosis is inherited like other physical characteristics. They emphasize the importance of stock and ascribe the decline to secular changes in the germ plasm of races and nations.

Both sides of the problem have their strong contributing factors, and improvement of both is what we need to help stamp out the disease.

Aside from the numerous opinions and theories of the causes of tuberculosis; all responsible authorities that can back up their statements with facts agree on two outstanding conclusions. First that tuberculosis occurs most commonly in the ages from 20-40 years and most authorities say it occurs mostly in people from 15-25 years. Secondly that more young girls than young boys die of the disease.

Before elaborating upon these two phases I wish to point out a few interesting general facts about tuberculosis.

The geographical distribution of the occurrence of the disease is surprising. Pointing out a few statistics as to the fatality of it in various places of the United States will demonstrate this. In 1929 the fatality rate of tuberculosis in Utah was 291.6, in New York it was 92.1, and in Tennessee it was 137.6 per 100,000 population.

The racial variability in the death rate shows it to be lowest among the Jews, both male and female. It is also low in the Italians and Austro-Hungarians. The highest death rates fall among the Irish people, both male and female.

These facts are just brought out as points of interest, and the reasons for this are not within the range of this paper.

The death rates of tuberculosis in sex and age also show definite variations. On the whole the death rate for males is higher than that of females. The first 10 years of life show approximately the same rates; from 10-25 years the rate for females is higher than for males and beyond 30 years the rate for females drops rapidly and continues so throughout the rest of life. The white male rate reaches its maximum at about 52 years, and the white female rate is highest at about 26 years of life. (1)

Dr. S.A. Knoff of the Health Department Sanatorium of

(1) Dublin- "Health and Wealth"

New York wrote forty letters to well-known specialists on tuberculosis and to internists who see a good deal of tuberculosis in the consultation practice, and twenty letters to well-known authorities on diseases of children. For an example the first of his list of returned answers are given here to show the variations in opinions. They vary slightly but still cluster within a limited range. (1)

Dr. W. J. Barlow, Los Angeles gave the age at	20-29 years.	
Prof. Hermann M. Biggs, New York.....	16-25	"
Prof. Frank Billings, Chicago.....	15-25	"
Prof. Vincent Bowdich, Boston.....	20-40	"
Dr. E. S. Bullock, Silver City, Mon.....	18-25	"
Dr. G. W. Halden, Denver.....	20-25	"
Prof. S. Solis Cohen, Philadelphia.....	18-22	"
Dr. Alfred Meyer, New York.....	15-40	"
Dr. Chas. L. Minor, Asheville.....	20-40	"
Prof. Edward O. Otis, Boston.....	18-35	"
Dr. Bertram H. Waters, New York	25-40	"
Prof. Wm. Chas. White, Pittsburgh.....	20-40	"

The probability of infection being carried in the body and the active condition or breakdown of the disease coming within these years makes us wonder what the factors in the lives of these young people just finishing school and going out into the world to seek their place would be. These special factors will be taken up in a discussion a little later in the paper.

(1) "E. B. Occurs Most Frequently"—Dr. Knoff, Jr. of Public Health.—Sept. '16

The second point that seems to be universally agreed, that more young women than young men die of tuberculosis has several interesting possibilities.

Many reasons have been attributed to it in the past without due regard as to their direct cause. Some of the suggested conditions are: a desire to be a flapper, scanty clothing, poor diet, late hours, ambition for popularity, tobacco, alcohol, factory jobs and other similar factors. (1)

More recent studies recognize these factors as wearing on the young woman's resistance, but they emphasize the primary cause of the increased mortality in females as biological rather than environmental factors. (2)

From a biological standpoint the higher rate for females at this age of adolescence and early adult life may be due to the great changes in the organs of the female body which would tend to lower her resistance. The physical developmental changes are very important, and since her resistance is lowered at that time of life, if she does not bear this in mind and take proper measures to protect her health her life may become endangered and her resistance lowered to a condition of long and expensive poor health.

The dangers of childbirth must also be considered. Marriage and childbearing are common at this age. Pregnancy before 20 years of age is quite common and is closely linked up with the onset of the disease. Some sources claim this

(1) "Why Young Females Die of T.B." - Hygeia, Dec., 1932
(2) "The Control of T.B. Among U. Students" - Dr. H.D. Lees, Univ. of Penn.

to be the most important single causative factor in the mortality of females at this group. (1) The physiologic strain involved in child-bearing lowers the resistance and gives the incipient or latent infection formerly mentioned an excellent chance to develop into an active state.

However a phase in the study made in the comparison of the prevalence of tuberculosis in the Western Reserve University and in the city of Cleveland seems to suggest the possibility that sex is not a major factor except in the lower economic levels. (2).

Nevertheless, the proper adaptation of young women to meet these physical and psychical problems in the healthiest manner can be improved only by education. The high school and college groups are the ones who are passing out of the schools and into homes and other institutions. Since it is much easier to reach people in collective groups as these are, the educational system is gradually leaning towards the importance of spreading the facts and giving aid to these people who can help most in reaching the goal for a lower mortality rate for which we are striving.

Turning to the problem of the prevention of tuberculosis we can readily see that whatever procedures or practices are causing the decline of the mortality rate for the infection, it is certainly painting a hopeful picture.

(1) "Why Young Females Die of T.B."-Mygeia - Dec. 1932

(2) "A Study of College Students"- Dr. Ferguson,
Jr. of Outdoor Life Aug. 1934.

The year 1900 was the first for reliable statistics on tuberculosis for any large part of the United States. (1) Statistics show that less than half the people are dying each year from tuberculosis in the United States today, than would have died if the death rate for 1900 were still prevailing. (2)

Theoretically tuberculosis is just as preventable as typhoid, diphtheria or smallpox, but practically it is not. The reason is that smallpox can be checked by vaccination, and when the water supply is purified typhoid can not develop. The prevention of tuberculosis however lies in making the people themselves do something. The people are the source of infection of tuberculosis. No sane person would spread it intentionally, but hundreds of thousands are spreading it un-intentionally. A united effort is needed to control the disease by finding the infected people and controlling his daily life.

Some general but very important final facts for everyone to keep in mind in order to help keep up the resistance of himself and his associates are to live, work, sleep and rest whenever possible in the sunshine and fresh air; eat nourishing food; avoid overwork, late hours and all excesses which weaken the body; and have frequent health examinations. Because after all the best results are achieved not by treating the disease itself but by attacking it before it begins.

(1) & (2) "Health and Wealth"--Dublin

We do not know the extent of tuberculosis in American Universities. Until the health service plan is more nearly universal we cannot know how extensively it exists. We do know however that cases do develop within the college walls and Dr. Myers of the Student health center at the University of Minnesota said, "On several occasions we have been able to trace tuberculosis in a student to a roommate who suffered from undiagnosed tuberculosis in an advanced stage". (1) Under present situations where health programs are practiced, such situations are not now likely to occur in our institutions.

Dr. Lee H Ferguson made an interesting study of the comparative check of tuberculosis in students in colleges where there was an active tuberculosis program, and where there was not. In seven institutions having an active tuberculosis program a census in 1932-1933 of 38,932 students, 28,091 men and 10,841 women, showed a total of 6.7 cases per 1000 of adult pulmonary tuberculosis. The rate for men was 6.4 cases per 1000 and for women 7.5 cases per 1000.

In four institutions not having an active tuberculosis program a census in 1932-1933 of 15,374 students showed only 0.7 cases per 1000. (2)

A great variation was found in the amount of tuberculosis at various institutions. The highest incidence in men was 13.7 cases per 1000 and the lowest 3.1. The highest incidence in women was 12.7 and the lowest 3.1.

(1) "Tuberculosis in University Students"- Esmond R. Long

(2) "A Study of College Students"- Dr Ferguson,
Jr. of Outdoor Life, Aug. 1934.

Tuberculin testing in college students shows a variation in active cases found from 15% to 62%. The general average is 35%.

The above brief discussion on the subject is enough to show that the universities are now concerned with the prevalence of tuberculosis among the students.

When this is generally adopted the health and lives of our future professional, economic and political leaders will be greatly insured and the huge sums of money now spent in the long tedious treatment of the disease can be used for more pleasing purposes.

Earlier in this discussion were listed some general factors which can break down the individuals resistance so the tubercle bacillus will not have to struggle so hard to become a harmful factor for the individual to cope with.

Many students leaving home to enter college come into a new climate, this often can irritate the respiratory track and cause a prolonged annoyance and wearing on the individuals resistance, and they are also very likely to neglect minor respiratory infections when busy and away from home.

Other special factors in student life which may favor the development of tuberculosis are long hours of indoor study; too strenuous and poorly organized social life; poorly planned diets for those who are cooking for themselves for the first time; extra needed work or participating in too many activities so the body does not receive ample

rest; cases of homesickness; poor social adjustment and other emotional adjustments where appetite is lost and the student finds difficulty in sleeping and the general resistance is lowered, and there is therefor a failure to conserve needed energy.

The control of health problems in the American Universities and Colleges is an evolution of the last decade. Efforts made in the prevention of tuberculosis in the colleges can be shown in three steps (1)

Ten years ago students who were sick with what turned out to be tuberculosis, consulted their private physicians either in the university neighborhood or on their return home. The university had a record of the students absence but otherwise was unconcerned in the matter. This system of course did not have much effect in the early recognition or control of tuberculosis. The first symptoms have a slow or gradual onset and the "sufferer" may have received much damage before he became enough alarmed to report to a physician.

An improved step in the control of tuberculosis came about with the formation of the student health services of the early type. Under these arrangements the students had the privilege of consulting the college physician any time they desired. Annual fees were often paid to cover the expenses of the service, therefor students were more inclined to report with minor ailments than when it would

(1) "T.B. in University Students" - Dr. E.R. Long
Fr. of Outdoor Life, Nov. 1933

have meant an additional expense. Also the health service coming into public consciousness brought the families and friends of the students to force the health service on them when the students would not report for their ailments.

The third step shows the organization of measures whereby students are required for the sake of themselves as well as their fellow students to undergo certain tests for specifically detecting the prevalence of tuberculosis.

With the development in recent years of the organization of the modern student health services the tuberculosis problem is finally receiving its much needed attention, and plans are now in operation in many universities.

The American Student Health Association meets annually and present and discuss problems of college hygiene. The conference is made up of competent authorities and the effect of their tuberculosis program if carried out would certainly make a far-reaching check since it dominates in the years of life of college students.

Following is a complete copy of the report of the subcommittee of the branch of the American Student Health Association on tuberculosis. It is presented here to show how thorough their work is and consequently how effective the results would be.

In view of the fact that tuberculosis in college students is still a serious unsolved problem, the following program is submitted for its solution. (1)

I Methods of Detection

a. Complete history of all new students, to discover contact cases and nature of previous lung infections, tuberculosis, pneumonia, pleurisy, chronic bronchitis, etc.

b. Physical examination of all students on admission and annually thereafter. Repetition of lung examination when suspicious lung signs or symptoms appear; likewise during upper respiratory infections.

c. Routine Mantoux intradermal tuberculosis tests.

1. on all entering students

2. re-testing at least each year and preferable every 6 months on those having negative reactions.

Testing should also be made whenever suspicious lung signs or symptoms appear. It is recommended that routinely only two doses be given. The first should be 1/100 milligram of old tuberculin. If the reaction to this is negative a one milligram dose should be given. This should be the maximum used.

d. Routine flat x-ray films of chest are recommended on all students having positive tuberculin reaction. This should be repeated whenever suspicious lung signs or symptoms appear. It is the opinion of the committee that a routine chest x-ray is desirable on all students on

admission if funds will permit.

II Methods of Handling Cases

A. Tuberculosis contact cases

1. Physical examination of lungs.

a. Every 3 to 6 months routinely

b. During upper respiratory infections or if symptoms are shown.

2. X-ray of lungs yearly or 6 months routinely.

This should be repeated whenever suspicious signs or symptoms appear.

3. Tuberculin test: this should be repeated every 6 months if previously negative; also whenever suspicious signs or symptoms appear.

B. Childhood type of tuberculosis (Hilum tuberculosis.

This shows usually as healed lesions in adults.)

1. Detected by x-ray and tuberculin tests.

2. No special care advised except to repeat physical examination yearly, during upper respiratory infections and whenever there are suspicious symptoms. The x-ray should also be repeated whenever suspicious signs or symptoms appear.

C. Arrested pulmonary tuberculosis

1. Physical examination of lungs routinely every two months. Repeat during upper respiratory infections or if symptoms are shown.

2. X-ray lungs every six months. Repeat during upper respiratory infections or if symptoms are shown.

3. Regulation of habit life.

4. Adjustment of academic schedule, social life, outside work, physical education program, and recreation.

D. Active pulmonary tuberculosis.

1. Detected by:

- a. physical examination
- b. tuberculin test
- c. x-ray
- d. sputum
- e. symptoms

2. Dismissal from school usually advisable.

3. Advise should be given for suitable treatment, and arrangements made for this.

4. Protection should be provided against dangers of infection from active cases in fraternities and dormitories.

5. If the student remains in school (as should not be the case as a rule) his habits of life, sleep, food, etc.) should be carefully regulated, and his academic schedule and physical education program together with his recreational, social, and outside activities program should be readjusted to meet his needs.

Cases of active pulmonary tuberculosis should not engage in regular physical work, or competitive or strenuous athletics of any kind.

General Care of College Students in Relation to Tuberculosis

A. Upper respiratory infections

1. repeated lung examinations of all cases
2. x-raying of cases having suspicious signs
or symptoms.

3. tuberculin testing whenever need is indicated.

B. Regulation of student life

1. social life
2. curriculum
 - a. undergraduate schools
 - b. graduate schools
3. habits
4. outside work
5. revised physical education programs to include
adequate recreation for all four years of undergraduate
schools and through all graduate schools.
6. mental hygiene to reduce nervous and mental strain.

It was reported at the last annual session of the Pacific coast section of the American Student Health Association that the prevention and control of tuberculosis among students of the University of Oregon was declared the best of any so far reported.

At the meeting Dr. Miller of the Health Department of the University of Oregon outlined the procedures followed there and health physicians present declared it was not only superior to that followed in most other colleges on the Pacific Coast, but one that is very effective and efficient.

The procedure above mentioned requires that every student be given a thorough physical examination and a tuberculin test upon entrance. Those who show a positive reaction to the test are then brought back to the health headquarters, have their chests x-rayed, and are thoroughly gone over for other signs of the disease. While only a few of those showing a positive reaction have tuberculosis in an active stage, these cases may then be treated.

This method makes it possible to discover the disease in an early stage, and through modern methods effect a check or cure. The health service also offers its service to students at any time after they enter the university, and students who report upon becoming ill are tested again if they show any indications of tuberculosis.

A complete physical examination is also offered by the health department to all seniors. Students about to

graduate are urged to come in for a final check up before leaving school.

At universities where funds fall too short, to carry out a comprehensive program, the institutions in many places carry out as ideal a program as they can finance.

The results they obtain do indicate to them the advisability of not only continuing their present work but of extending it and improving it as rapidly as possible.

Dr. Lees of the University of Pennsylvania reports their organization of a Student Health Service in 1931. Their program includes the application of the intracutaneous tuberculin test to all new students, and taking of stereoscopic films of the chest of the positive reactors. In addition to the freshman group, the same procedure is made compulsory for all members of varsity squads engages in inter-collegiate athletics. Special effort is made also to reach all members of the freshman class, who at the time of the entrance physical examination, give a history of having had tuberculosis or pleurisy, as well as those who have had contact with tuberculosis in the home or elsewhere. A special detailed history is taken in every case, and a physical examination and fleuroscopic examination is given each student before chest films are made. In addition to these groups in 1931, the privilege of complete chest study was made available, without charge, to all students requesting it. (1).

(1) "The Control of T.B. Among Univ. Students".

Dr. H.D. Lees- Univ of Penn.

With reference to the general population the death rate of tuberculosis has shown a very rapid decline in the last 20 years and earlier. The public health workers claim the great improvement in general to be due primarily to activities within human control, that is a knowledge of general hygiene, ability to strengthen the resistance against the development of active symptoms, and the knowledge of the importance of destroying the bacillus and preventing contact with it . (1)

The development of progressive education of these principles has certainly been encouraging. On the official side, the activity against tuberculosis may be said to date from 1894 when the health department of New York city adapted a series of resolutions to assist in suppressing the disease.

In 1897 the Sanitary Code was amended to make the notification of pulmonary tuberculosis compulsory.

Another organization of special importance was the formation in 1902 of the Committee on the Prevention of Tuberculosis of the Charity Organization Society of New York city. They carried out research, education and relief with much vigor and they make it a model for other local organizations.

With the growth of the popular interest in the problem and the independent undertakings that were showing themselves in different parts of the United States the need of a national body of authority was felt.

(1) Campaign Against Tuberculosis in the United States-
-T.B. National Association.

In 1904 the National Association for the Study and Prevention of Tuberculosis was established in Philadelphia by leading physicians of the country.

Since that time the work of organizations along state and local lines has been developing in every direction and now there are hundreds of special associations for the prevention of tuberculosis affiliated with the national association. Intelligent interest has placed official responsibility on the nation, state, and local centers. (1)

The national idea of selling Christmas seals was originated in 1904 by a postal clerk in Denmark; the proceeds of the sale were used to establish a children's hospital in Copenhagen. In 1907 the proceeds were used to build a tuberculosis pavilion. In the following year 1908 the American Red Cross conducted a nation-wide campaign in this manner and the proceeds were used to assist the work of the National Tuberculosis Association.

In 1920 the sale of the stamps passed from the auspices of the Red Cross to that of the National Tuberculosis Association. (2)

Any intelligent person can appreciate the continuous work of our civilization in stamping from our happy lives the possibilities of an unexcusable enemy like tuberculosis.

The foundation for the fight against it has been laid and we are the people who must build upon this foundation to fight and overcome our enemy. This is progressing

(1) Campaign against T.B. in U.S.-Nat'l T.B. Assoc.

(2) Am Student Health Proc., 1931, Dr. H.W. Haggard.

hopefully and year by year we can see our efforts are being repaid.

The incidence of tuberculosis in our Universities we see is great; but with the wonderful work being carried out there and with the cooperation of all local, state, and national associations we cannot hesitate in this way to help build a healthy future.

"I'm the Red Cross Christmas Stamp

This that I propose is,

To summon wealth to fight for health

And beat tuberculosis,-

Beat the greatest plague of all,

Oust a pall of sadness,

Treat despair with food and air

And lift it into gladness."

By Otis

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