No. 1

PHYSICAL EXAMINATION OF CHINESE STUDENTS

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Mission and government schools in China vary in their methods of health supervision from those which have a full-time physician or trained physical director to others where an attending doctor merely has oversight, or where all the responsibility falls on the busy teacher. The importance of the physical welfare of the student is being more and more emphasized, and is at least recognized by all. Actions by the China Christian Educational Association and its support of the Council on Health Education, together with articles in the *Educational Review* by Kulp[1], Peter[2], Cadbury[3], Wakefield[4] and others have helped to keep this issue before the educators in China. The Council on Health Education has as one of the main features of its program, "Health Education and Supervision in Schools".

There is as yet little correlation of the work done in the different schools and colleges. We could all profit by the experience of others; more frequent publication of results would help to standardize procedures, forms, nomenclature, methods of examination and follow-up in the physical, sanitary and educational phases of the work. Results of student examinations at Tsing Hwa in 1912[5], Shanghai College in 1915[1], and Canton Christian College in 1921[3], have appeared and they include excellent historical and theoretical discussions of this subject. A number of reports on body measurements, blood pressure, pulse rates, vital capacity, etc., in students have been reported by Merrins[6], Whyte[7], Schumaker[8], Hutcheson[9], Wilford[10], Kao[11], Foster[12], Hsieh[12], Cadbury[13], and others, largely stimulated by the Research Committee of the C.M.M.A. Anthropomorphic and physiological standards for China are being established as a result of these studies.

Surveys of the health conditions in the schools with reports of the defects found show us what are the most prevalent diseases among the students, and as so many of the conditions found are remediable, lines of attacking this problem are suggested. With

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this in view, and in order to mention some of the methods used, a report of physical examinations of students in Changsha during the past two years is here presented.

In addition to the routine examination of Yale and Hunan-Yale students we have had opportunity to examine students of a number of the city middle schools, including one union mission girl's school. The usual procedure has been to set aside one afternoon in the week and arrange for groups of the students to appear at 1 :30 and at succeeding half-hour intervals. A modified U.S. Army system is used. The student on entering is registered and given a history card. In the first room (1) he is helped to fill out the history data.* Taking his card with him the student passes on to (2) the medical examination room where he is stripped to the waist and examined in turn for general nutrition, skin, heart, lung and abdominal conditions and where the blood pressure is taken; passing on to (3) his eyes, ears, nose, throat and teeth are inspected by a specialist, then on to (4) for surgical, orthopedic and urological examination. There the few measurements are taken. A specimen of urine is then obtained and tested. After completing the examination his card is taken, checked for omissions, and he is given a dispensary card with his registration number. With one or two doctors in each room and assisted by medical students and nurses, 100 to 150 students or more can be given a thorough examination in one afternoon. The cards are then assembled and studied, recommendations for conditions requiring treatment are noted and the Head of the school or physical director is notified which students need treatment or further observation and directions are given for obtaining treatment. The cards are retained in the hospital out-patient department and are used as the students' clinic record. The reverse side of the card is used for recording treatments and follow-up.

The card (Fig. 1) used for recording the examinations has proved quite satisfactory and we are accumulating considerable data which will be valuable for future study. The card is based on one used at Cornell University[14], and acknowledgement is here made to Dr. Huntley of the Shanghai College, and to Dr. Appleton of the Council on Health Education, for suggestions.

*Time and confusion can be saved if the cards are filled out before coming to the hospital.

TABLE 1. SHOWING RESULTS OF EXAMINATIONS IN CHANGSHA SCHOOLS DURING 1921-1922.

School	Changsha 1st Middle School	Changsha Normal School	Yale	Medical School	Yale	Changsha Chang Chuen School	Yale	Medical School	Nursing School	Fuh Siang Girl's School
Date	Apr. 1921	May	May	Oct.	Oct.	Dec. 1922	Dec.	Dec.	Jan. 1923	Jan.
Number Examined	252*	301*	221*	30*	260*	285	324	41	22	140
Defective vision ...	38	42	33	6	61	112	140	36	10	65
Trachoma	60	51	22	7	114	53	45	10	0	10
Nasal obstruction...	...	...	...	...	...	39	20	13	2	22
Tonsils	50?	25	6	2	43?	33	29	0	0	16
Defective teeth ...	...	...	4	...	7	40	74	11	3	8
Lungs	2	20	11	2	15	5	11	4	1	9
Heart	0	2	2	1	2	2	3	0	0	8
Kidney	...	...	...	...	...	2	5	0	1	1
Skin disease	69	56	11	0	24	35	10	1	1	1
Hernia	4	5	6	0	6	1	6	0	2	0
Phimosis	9	6	11	6	20	30	35	3	3	0

* Incomplete

In summarizing the results of the examinations (Table 1) only defects which required treatment, and which in general were remediable, were noted. The skin diseases include ringworm of different types, eczema, and scabies, chiefly the last. Nasal obstruction includes deviated septa, polypi, sinus disease, and adenoids. It is interesting to note the increase in the diagnoses of nose and throat and dental defects this year since the addition of a nose and throat specialist and a dentist to our staff. Great difficulty has been found in obtaining fixed standards of diagnosis, for with the changes in examining personnel, personal opinions make considerable difference in the numbers reported. This same difficulty is very apparent when one comes to compare the figures reported from other schools. What one examiner calls trachoma another apparently calls conjunctivitis; all do not agree on what is a hypertrophied tonsil, or what degree of ordinary vision is defective.

Some examiners apparently call every systolic murmur cardiac disease, etc. Complete records of the follow-up are not obtainable at present but are a necessary part of the whole scheme.

TABLE 2. SHOWING THE PERCENTAGE OF DEFECTS FOUND BY DIFFERENT EXAMINERS IN CHINA AND AMERICA.

	Tsing Hwa (5)	Shanghai College (1)	Canton Christian College (3)	Yale in China	Changsha Middle School	Fuh Siang Girl's School	New York City Public Schools (15)	Chicago Public Schools (15)	U.S. Army Draft (16)
Number Examined	685	106	893	387	285	140	230,000	317,000	5,000,000
Disorder of heart.....	9.6	20.4	13.	0.8	0.7	5.7	0.7	0.5	3.5
Disease of lungs	3.8	20.4	0.3	4.1	1.7	6.0	0.2	0.2	2.5
Eyes : defective vision	21.1	—	—	48.1	39.0	46.4	10.0	16.4	3.3
Trachoma.....	0.2	47.0	17.0	14.2	18.5	7.0	—	—	—
Conjunctivitis	36.5	—	—	—	—	0.7	—	—	—
Nasal obstruction	3.3	3.9	—	9.0	13.7	15.7	12.0	18.5	—
Hypertrophy tonsils	37.8	24.3	—	7.5	11.6	11.4	15.0	21.0	2.3
Defective teeth	1.3	13.6	—	22.5	14.0	5.7	59.0	36.5	1.3
Skin disease...	0.1	24.3	—	3.1	12.9	0.7	—	1.9	—
Hernia	1.7	—	—	2.1	0.3	—	—	—	4.0

Comment

In looking over the results of the two years' work as shown in the first Table, which includes only the commonest conditions, one is impressed by the large number of eye, nose and throat diagnoses. Defective vision, ($\frac{20}{40}$, $\frac{6}{10}$ or less) is very common, as it is elsewhere in China; over 40 per cent of the Changsha students examined should be wearing glasses. Trachoma is present in from 10 per cent to 18 per cent of the students, being less in the mission schools. There is also a surprisingly large number with sinus disease, adenoids, etc., which can only be properly diagnosed and treated by

a specialist. Tuberculosis is fairly common among the student class in Changsha, although it may be difficult to detect it during routine examinations. Students are frequently admitted to the hospital with hemoptysis but with very few other symptoms and with almost normal chests. A history of spitting blood in the past, or a chronic cough, or of tuberculosis in the family, has often been of more help in detecting these cases than the actual chest examination. The small number with skin disease found in the mission schools as compared with those in the city schools speaks volumes for the value of frequent and compulsory bathing. Several cases of albuminuria and two cases of mild glycosuria were detected by the urine examinations and have demonstrated the value of routine urinary tests. Feces examinations have not been carried out so far in the schools but our hospital figures show about 90 per cent ascaris infection for the region of Changsha.

Comparison with the limited number and incomplete figures of student examinations in other schools in China, with Chicago and New York City public school reports[15], and with U. S. Army draft figures[16], brings out some interesting facts. (Table 2.) First of all is the evident difference in the standards of diagnosis. It is not likely that the Shanghai College students actually have so much more cardiac and lung disease. The same difficulty is encountered in comparing the incidence of trachoma in different sections of China, or in the percentage of defective teeth or hypertrophied tonsils. The important feature of the results shown in the Tables is that each of the conditions detected is something which in the opinion of the examining physician is a physical handicap to the student. What affects his body will affect his capacity to study and to live a normal life. Most of the defects can be remedied. We are not doing our full duty unless we try to fit the student physically, as well as mentally and spiritually, for everyday life.

Summary.

1. There should be a closer relation between those who have supervision of the health of students in China.

2. The teaching and application of hygiene in the schools should be standardized equally with the other phases of the curriculum.

No..... School..... Class..... Date.....

HUNAN-YALE HOSPITAL O.P.D.
STUDENTS CLINIC

Name..... Address.....
Date of Birth (English)..... Are you married?.....
(Chinese)..... Age..... Do you have a chronic cough?... Ever spit blood?.....
Birthplace..... Province..... Eyes ever examined?..... Do you wear glasses?.....
What relatives have had Tuberculosis?..... Is your health good?.....
Have you ever had Small Pox?..... Typhoid?.....
Dysentery?..... When last vaccinated?.....

Date.....Year.....	19.....		19.....		19.....		19.....		19.....	
Height										
Weight										
Sitting Height										
Span										
Lung Capacity										
Nourishment—Good										
Average										
Poor										
Mentally alert										
" dull										
Color rosy										
anemic										
dark under eyes										
Posture erect										
stooping										
Spine straight										
curvature										
Nose,—ant. obstr.										
Mouth,—Teeth										
Tonsils										
Adenoids										
Eyes,—Vision R	L	R	L	R	L	R	L	R	L	
Trachoma U R	L	R	L	R	L	R	L	R	L	
L										
Other defects										
Ear										

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FIGURE 1.—CARD (8½″ x 11″) FOR RECORDING EXAMINATION.

3. A summary of the examinations of 1876 students is given, showing a high percentage of remediable defects.

4. Comparison with the statistics of other reports brings out (1) the need for more fixed standards of diagnosis, and (2) emphasizes the fact of the physical handicap under which such a large number of students are working.

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