

Sight and Society in the People's Republic of China

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Abstract

A 3-week visit to the People's Republic of China revealed a need for more eye examinations and professionally dispensed spectacles. Although health care is well organized and widely distributed, especially considering the current stage of economic development, vision care *per se* will need upgrading as the society becomes more economically efficient and technologically developed.

Key Words: China, vision care, health care, acupuncture, eye exercises, spectacles, ophthalmology, education

In September 1976 I had the opportunity of spending 3 weeks in the People's Republic of China seeing schools and universities, factories and communes, hospitals and clinics, from Canton in the south to Peking in the north. My special goal was to learn something about the care of vision—eye examinations, refractive correction, and the supply of spectacles. There have been numerous reports on health care and delivery in the People's Republic of China,¹ but none to my knowledge specifically covering vision.² Our official guides from the China International Travel Service were extremely helpful, doing their best to help me obtain any information I wanted and serving as translators. Most of what I was able to learn

was acquired primarily through their help. Naturally, they are proud of their country and its accomplishments since the success of the revolution of 1949, and they were eager to demonstrate the progress that has been made in the last 25 years. They de-emphasized those aspects of vision care that have survived from an earlier time and that are considered a part of the "old" China. It was easy to look into these on our own, however, since we were allowed to go anywhere within every city we visited.

Entering the People's Republic of China through the Shanghai Airport, one sees there, as well as elsewhere throughout one's travels, well-scrubbed and healthy-looking faces. One is free to talk to anyone. The environment is quiet except for vehicle horns. The people are subdued and disciplined, even the children in kindergartens and nursery schools. From nursery school on up, people are taught cooperation, harmony, and living compatibly together in every way. A widely heard slogan runs, "Friendship first, competition second." There is economic austerity, Victorian morality, and virtually complete

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honesty. Egalitarianism is a strong point and is pursued to a degree that sometimes seems impracticable to a Westerner. Consumer goods are readily available without the long lines and the bureaucracy common in other Marxist countries.

Everyone one talks to says that he or she is satisfied or even happy with the government and its policies. People are dedicated to the state. They do not choose their careers, not their jobs, not even where they live. These limitations must be difficult for intellectuals, especially those who have known the Western life style, although one hears no complaints. The lot of most citizens seems to have improved, and people say they are satisfied with this apparent tradeoff. The country seems geared to an all-embracing crash program to provide a plentiful and secure supply of food, clothing, medical care, and shelter. Everyone is expected to contribute without regard for personal preferences. Already the destitution of former days is gone, and epidemics have virtually disappeared.

Emphasis is given to health care for the people. The institution of "barefoot doctors" (to be described below), credited to Chairman Mao at the time of the Cultural Revolution (1966-1969),³ has made possible the widespread availability of health services, especially immunization, even in ru-

ral and remote areas (Fig. 1). Medical curricula have been shortened, and medical schools now require 3 years of training (half the previous duration) after high school and some practical experience or application. Professors, physicians, and other urban professional workers must spend about 3 months every 2 years on a farm working in the fields.

As in many other countries, vision care is divided between ophthalmologists in hospitals and opticians in stores. Actually, very few people wear glasses except for obvious presbyopes working where good near vision is required (Fig. 2). The society is organized in such a way that the need for refractive corrections in younger people is largely obviated. This will be explained later.

THE PREVALENCE OF SPECTACLES AND EYE EXERCISES

In visiting a watch factory in Shanghai, an embroidery factory in Changsha, and a middle (secondary) school in Kweilin, the absence of spectacles was conspicuous. In the watch factory, most workers performing very close work were young, and almost none of the young people wore glasses. The older workers who were obviously of presbyopic age were wearing



FIG. 1. School children dancing a pantomime about health care. At left is portrayed a "barefoot doctor" (as usual, with shoes on) giving an immunizing injection to a baby (the teddy bear).

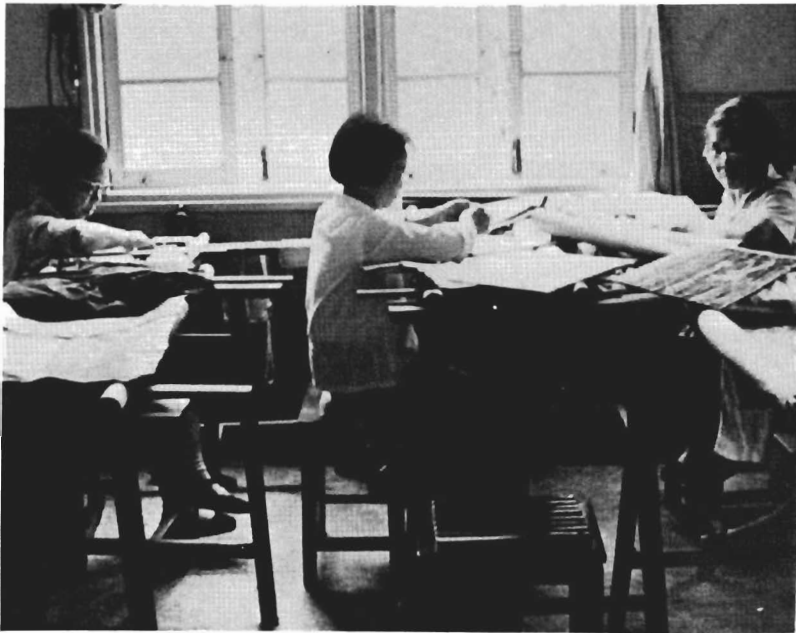


FIG. 2. Some older workers in an embroidery factory. Most presbyopes performing close work wore spectacles. The fitting generally was not skilled.

spectacles. We were told that workers were encouraged to do eye exercises several times a day, although during our visit we did not see any such activity. The embroidery factory in Changsha presented the same picture. Most of the young workers wore no spectacles. Virtually all the older workers, who were in the minority, wore spectacles, which appeared not to be professionally fitted but to have been bought ready-made from a retail outlet.

Among the 1400 youngsters in the middle school at Kweilin, no spectacles were observed. As part of the drive against competition, students are expected to tutor a member of their class who is not doing well academically. This expectation is in harmony with the policy of "no academic failures." It follows that if a visual defect keeps a student from seeing the blackboard or reading a book, he need not fear flunking and in fact may even do well because of the help from classmates. Thus the need for eye examinations and spectacles is minimized.

In addition to the routine calisthenics that the student body performs en masse twice a day (Fig. 3), eye exercises are performed in class under the leadership of a student (Fig. 4). These eye exercises,

which the Chinese credit for their good vision and their lack of need for glasses, consist of closing the eyes (relaxation) while touching with one's fingers various parts of the face around the eyes. These exercises go on for about 10 minutes and are said to take place about twice a day. The practice is apparently widespread in both schools and factories throughout the People's Republic of China. No other information was available about them until we visited the eye hospital in Canton and talked to an ophthalmologist there.

A decrease in the incidence of myopia among primary and middle (secondary) school students has been reported.² The reduction is attributed to outdoor exercise and hard labor, shortening the period of schooling, and avoiding overstrain of the eyes. It is also associated with the cultivation of good reading habits and the promotion of conscientious protection of the eyes among students.

CHINESE OPHTHALMOLOGY

A visit to the major medical school in Canton, at Chung-shan University, introduced us to Chinese ophthalmology. The school has 5 hospitals, and 1 of them, with

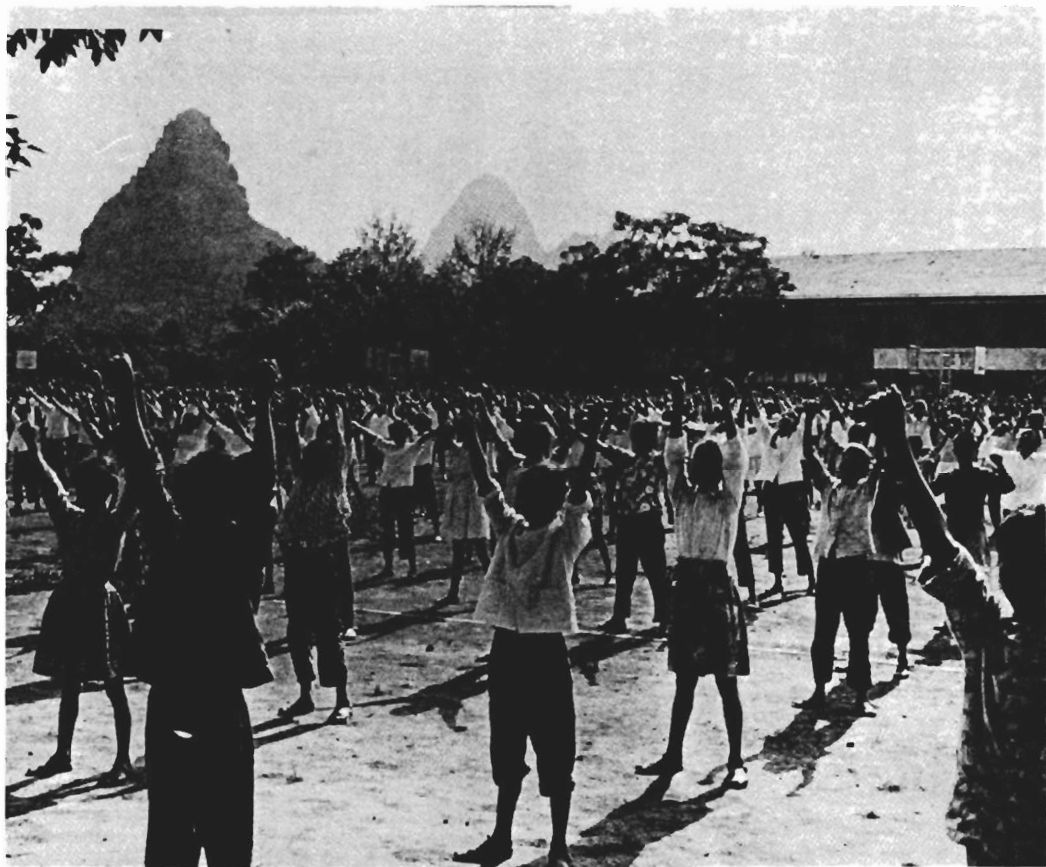


FIG. 3. Mass calisthenics at a high school in Kweilin. Not 1 of the 1400 students in class was seen wearing spectacles. Note in the background a few of the many Karst limestone mountains, for which the region is famous.

200 beds, is devoted to ophthalmology. Additionally, the school maintains subhospitals in rural areas. The following information was provided in our briefing and question periods. Such periods were held everywhere we visited, in factories, communes, universities, and other organizations.

The first entrance requirement is a good knowledge of Marxism-Leninism and Chairman Mao's thoughts. The second requirement is 2 years of practical experience. Third, education must be above the level of junior middle school (equivalent to the first 2 years of high school). Fourth, one must be less than 25 years of age. However, those with practical experience are not limited by the last qualification. In order to matriculate, the student must volunteer, be recommended by the peasants, and be approved by college authorities.

The broad masses of workers, soldiers, and peasants are very satisfied with the system, since they decide who will enter. (The peasants seem to be the highest authority in local decision making.) Students are highly motivated to serve the people, since it is the people who select them.

Entering medical students are served a bitter dinner to remind them of the bitter past, and they are told they must not forget the past in order to serve the people better. They take an active part in the movement for class struggle, transformation, and reform. Furthermore, they must repudiate Lin Piao and Confucius and also revisionism. (*Revisionism* refers to the revising of Marxism-Leninism by the Soviet Union.) They take part in grading themselves, and they participate in compiling their textbooks. Because the students have

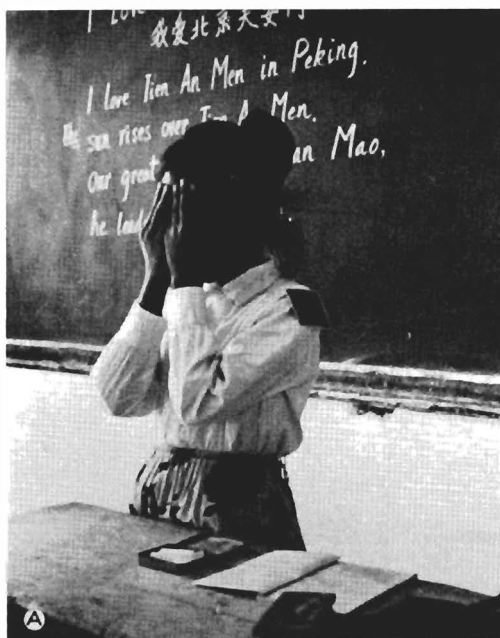


FIG. 4. A, Student leading eyes exercises in a high school during a pause in an English lesson.



FIG. 4. B, Students following the leader in eye exercises.



FIG. 4. C, Official poster on eye exercises.

broad experience before matriculation, they are very helpful in this task. For example, in the study of pediatrics, a U. S. text is used. The text prescribes apples for infants at so many months of age, but apples are not generally available in China. However, rice milk is, so they have made this substitution. The preparation of lectures is in the 3-in-1 mode: teachers, workers, and students. Chinese informants often presented trios of things as "3 in 1" and duos of things as "walking on 2 legs.") There is participation by the students in discussions of teaching and learning, with the teachers studying methods and experiences. In these ways the students participate in the educational revolution.

There are 2 specialties in medical

schools, general medicine and stomatology. (The latter term is used in Marxist countries to mean "dentistry.") There are no expenses for the students, and they are given 5 yuan a month for pocket money; this may go in part for clothing, which is not provided. (A yuan is roughly 50 cents U. S.)

The course of medical school education was 6 years before the Cultural Revolution. After experimenting with periods as short as 2 years, they finally settled on 3 years as the proper length of the course, for the following reasons. First, socialism is developing very fast, and there was need for a faster and more economical result. Second, before the Cultural Revolution there were 36 courses, some of which were not very applicable for physicians, such as

higher mathematics and forensic medicine. Some of the courses, such as physics, took a lot of time. Since physicians do not need to repair electric lights, this seemed unnecessary. Furthermore, there was too much repetition. Dysenteric diseases were covered both in infectious diseases and in pediatrics, as well as internal medicine and microbiology. By treating the topic once instead of multiple times in various courses, the educational period could be shortened. Third, in the past, theory was divorced from practice, but no longer. For example, in dermatology, syphilis was studied, but since the Cultural Revolution venereal diseases have been eliminated, so there need not be much time spent studying them, since there are no cases to be seen. Before the Cultural Revolution, some thought that rare cases had to be studied in order to maintain the reputation of the college. Fourth, Liu Shao-ch'i, the capitalist (a pejorative term), wanted to reduce the practice of Chinese traditional medicine, but it was decided that traditional medicine would still be used. For all these reasons, then, the 6-year course could be reduced by at least 2 or 3 years. Before the Cultural Revolution, students for the first year of medical study never saw a doctor and after 3 years of study had not even seen a patient. In the past the study of ophthalmology included much time spent in the classroom. Now more time is spent in the countryside since teachers and students are organized into a medical team. They see trachoma, cataract, and conjunctivitis. Students operate on the spot in the clinics and hospitals of the communes. The students see a greater variety of eye diseases this way, and they are very satisfied because they learn from the people and serve the people.

In this medical school as well as other educational institutions, examinations are considered a special and sensitive topic. Before the Cultural Revolution, examinations treated the students as enemies, since the most difficult questions were sought out by the examiner. There were many examinations on many subjects for the 36 courses, so every term there were 5 or 6 courses with examinations. If a student failed, he could not advance, and

some students were afraid they would not pass and would have to leave school. So some stayed awake and studied for 36 hours straight. The kinds of examinations were many—some before class, some after class, some after term, and so forth. There were many useless questions, such as, "Why has the horse 4 legs and a person 2 legs?" Exhausted by reading all the books, the students memorized notes from the class for examinations and then forgot them promptly afterwards. In 1964, it was found that students who graduated were in very poor health. These are the reasons for educational reform.

There are now 3 ways that examinations are given. One is on the spot—that is, with patients, having the teachers check students in a practical diagnosis exercise. The second is open-book examinations, and the third is closed-book examinations, where the students are allowed to review the lessons first.

Grades are made out after the students discuss the examinations and give marks to each other; the teachers give the final marks. Students coach their fellows who are not doing well, and they are encouraged to help each other. The course for ophthalmology takes 3 years after medical school.

ACUPUNCTURE

In the hospital we were invited to observe a cataract operation using acupuncture for anesthesia (Fig. 5). Acupuncture anesthesia in China is often performed in the traditional way, with needles, but may also be performed by using electrical impulses in place of the needles, applied by electrodes to the acupuncture points. This electroanesthesia is used in major surgery, whereas in most dental surgery we observed, the traditional needles alone were applied (Fig. 6). Acupuncture anesthesia seems to work in about half the patients. In the other half, pharmacological anesthesia is required. In the operation shown in Fig. 6, when the surgeon applied the scalpel to the limbus, no movement of the patient was apparent through the drapes. The operation continued uneventfully, and the cataractous lens was extracted.



FIG. 5. Cataract operation performed with acupuncture anesthesia. Actually, this particular operation was done with electroanesthesia—alternating current applied to acupuncture points—which is considered a form of acupuncture.

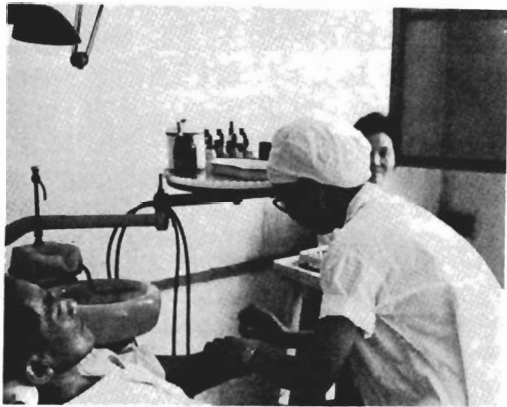


FIG. 6. Dentist inserting acupuncture needles into the hand of a patient before tooth extraction.

Earlier in Shanghai we had met Chang Hsiang-tung, who is the "responsible person" (i.e., person in charge) of acupuncture research at the Shanghai Institute of Physiology. I had known of Dr. Chang for many years from his original research publications in neurophysiology, written while he was working for his doctoral degree at Yale University in the late 1940's. His approach to acupuncture was com-

pletely and competently scientific, as may be seen in an interview with him.³ As he indicated, however, although the analgesic and anesthetic effects of acupuncture can be explained on a scientific basis, there is no such background for acupuncture therapy (Fig. 7).

CHUNG-SHAN UNIVERSITY, CANTON

At a university in Kwangchow (Canton), we saw again the same attitudes as those at the medical school, including a wariness of examinations, an emphasis on the practical, and a de-emphasis of the theoretical (Fig. 8). Recent reports indicate that there are some in education who are concerned that the "no failure" policy may be lowering educational performance significantly and should be changed.⁴ Publications in the University library included reproductions of *Science*, *Nature*, *Scientific American*, *Popular Science*, and *Science News*, all in the original English. The only newspaper in English was the *Guardian*, a pro-Maoist weekly published in New York City which had sponsored our tour. The goal of the university seemed to

be to train workers. Like all other universities and schools in China, it maintains factories in which students work and from which the educational institution obtains income (Fig. 9). The Chung-shan University is a national one in that students come from all parts of the country "with the exception of the province of Taiwan for the time being." There is no question of goal or



FIG. 7. Moxibustion, a form of acupuncture therapy in which a burning leaf preparation is put on the free end of a needle.

purpose, and students show none of the spiritual malaise that overcame our university students, especially in nonprofessional studies, a dozen years ago.

EYE REFRACTIONS AT THE CHUNG-SHAN MEDICAL COLLEGE

At the eye hospital we met Dr. Kwan Chun-hsis, an ophthalmologist. His refracting room contained a refractor of Japanese manufacture, the common visual acuity chart (Fig. 10) found everywhere in China, a Swiss-made slit lamp (Fig. 11), and an ophthalmoscope and retinoscope of Chinese manufacture. Dr. Kwan told us that he examines 30 patients a day for refraction with the help of 1 technician. In summer, when the schools are closed, the hospital has 60 refraction patients per day, who are seen after they go through the ophthalmology outpatient department. The spectacles are obtained from shops in the city, and there is also a service department for them in the hospital. Glasses cost 3 to 6 yuan (approximately \$1.50 to \$3.00 U. S.). Bifocals with large, round, fused segments cost 15 yuan (about \$7.50). Ex-



FIG. 8. Students by the bulletin board on the campus of Chung-shan University in Canton. Love and marriage are strongly discouraged until the late twenties. Bicycles (and wristwatches) are considered luxuries and status symbols.



FIG. 9. Factory in a school. Students in high school producing molded plastic electric plugs and bottle tops.

aminations cost 2 yuan (about \$1.00) if the pupils are dilated (for the first prescription in children), 1 yuan if they are not. Dr. Kwan told us that similar eye examinations are available in other provincial centers. The "barefoot doctors" who bring medical care, particularly immunizations, to remote and rural areas do not perform eye examinations; only ophthalmologists do.

When asked why there were no spectacles on the students we had seen in the middle school at Kweilin, Dr. Kwan replied that they probably did not want to wear glasses because they were vain. This answer surprised us, since every Chinese citizen does what he thinks is good for the state, and personal preferences are always downgraded if not ignored.

Dr. Kwan believes that because of the attention that schools pay to eye exercises, myopia has decreased. The eye exercises,

he said, are based on research done in Shanghai and not yet published. He suggested that further information could be obtained by writing to the China Medical Association in Peking. For more than a year I received no answers to my written inquiries. After the death of Mao, the Association acknowledged my letters without giving any useful information.

Every 2 years Dr. Kwan must work on a farm, perhaps laboring in the fields, for 3 to 4 months, an activity that did not seem to disturb him in any way. At first I was a little apprehensive about calling him "Doctor" since I felt it might be considered elitist and therefore in bad taste for me to use the title, but he assured me that it was all right.

DISPENSING OF SPECTACLES

In Kweilin we saw spectacles sold on the street, but the best choice was in the de-

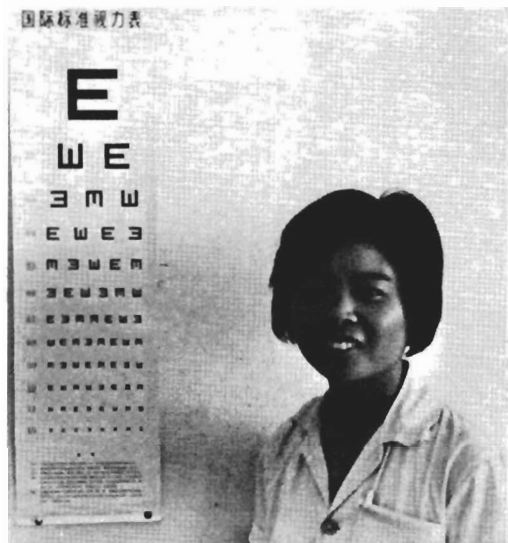


FIG. 10. Standard Chinese visual acuity chart with a hospital worker who administers the examination. A translation of the instructions at the bottom follows:

International Standard Eyesight Chart

1. This chart should be hung in a lighted place. Its height should be on a level with the eye.
2. The examinee should be 5 m away, not facing the source of the light to avoid the direct glare of the light in the eyes.
3. Each eye should be examined separately. While one eye is being examined, the other should be covered by a card, without pressure.
4. The eyesight of the examinee is considered normal when either of the eyes can see clearly the 10th row on the chart as indicated by 1.0. If one can see only the 9th row or above his eyesight will be considered abnormal or defective. The method for illustration is as follows: If one perceives clearly the 8th row his eyesight would be indicated as 0.8, if the 7th row, as 0.7, etc. If the examinee cannot see clearly the E in the 1st row with either eye, he is instructed to move closer until he can see clearly, and if he perceives clearly the top E within a distance of 4 m, his eyesight would be considered 0.08; at 3 m, 0.06; 2 m, 0.04; 1 m, 0.02.

Translated by Liu Tse-Han

partment store (Fig. 12). A visit to an optician's store (Fig. 13A) in Peking presented a picture of a busy place, but not so busy that long lines were necessary. This particular optician did not provide eye examinations but gave me the address of one who did. Here, 2 rooms were set aside for eye examinations. The equipment consisted of a trial lens set and frame, a visual acuity chart, and a vertometer of the projection type currently made in Japan. For

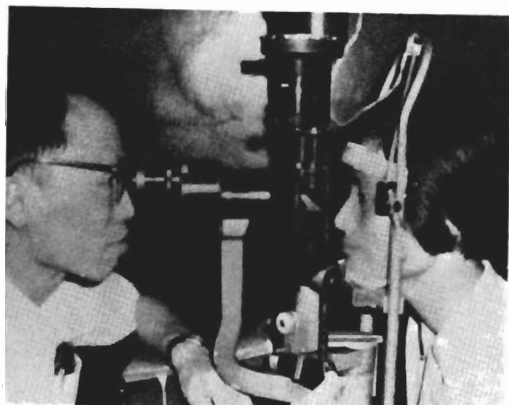


FIG. 11. Dr. Kwan Chun-hsis at the slit lamp examining the eyes of Shen Shu-hunt at the Eye Hospital in Canton.

adjusting plastic frames, the heat of an oil lamp was used (Fig. 13B) in place of our thermal sand or salt trays. Bifocals were made with large, circular, fused segments and appeared readily available, although a wait of 2 to 3 days was necessary. With frames, bifocals cost \$7.50 U. S.

CONCLUSIONS

Although China seems to have at least as good a system for providing eye examinations and spectacles as other countries at its level of economic development, in the future it will clearly need a larger system capable of taking care of more people in a more complete way. A country that can in a revolutionary and innovative way create the "barefoot doctor" could even more easily create an optometry where none has existed before. It will be interesting to see whether opticians will be upgraded through special training (as barefoot doctors have been) or whether a new course in optometry will be included as a health field in its own right in association with medical schools or universities. Such an advance, no doubt, may not seem compelling to the Chinese at their country's present stage of development. But as the country becomes more industrialized, better access to vision examinations and spectacles might well add to the visual efficiency and comfort of its people without the higher—and perhaps economically unjustifiable—cost of increasing the number of ophthalmologists for this purpose.

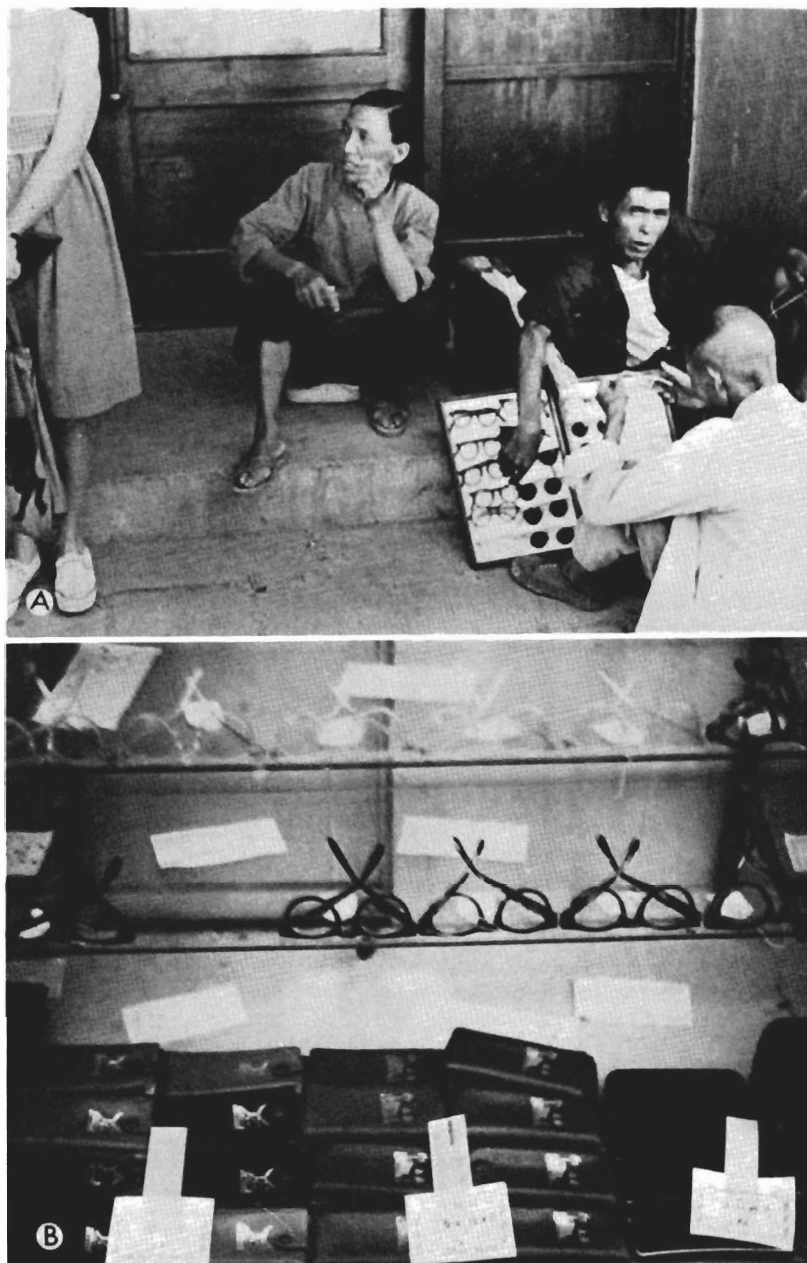


FIG. 12. A, Spectacles being sold on the street in Kweilin. They were not just presbyopic, convex lenses; some had asymmetric cylinder axes and powers. As shown in B, spectacles are more commonly found in department stores.

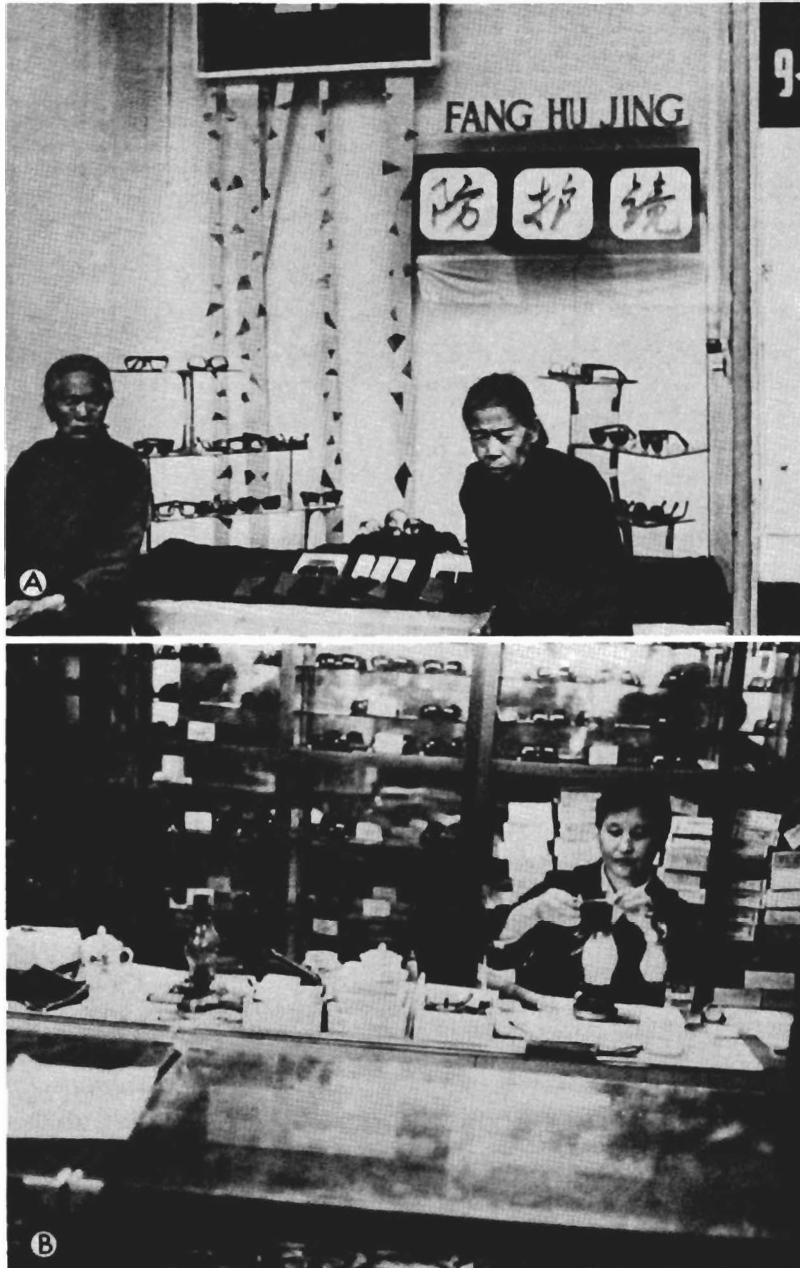


FIG. 13. A, Optician's store in Peking, open from 9:00 a.m. to 7:30 p.m. Stores generally were open long hours and even on Sundays and holidays. B, Frame adjustments being made over an oil lamp.

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