

The lieutenants and captains are taken from the third and fourth year students only. The school is provided with the very best equipment. Alarms are given from fourteen boxes. The department is accustomed to second and third alarms and also to the "recall" or "all out" in use in large cities. Upon a first alarm one ladder truck and one hose company respond and the other apparatus follows when called by a second or third alarm. In the basement of one of the buildings is the fire drill room, which contains a ladder, truck, three hose carriages, an engine, an emergency wagon loaded with life lines and other articles needed for the drill.

The drill tower shown in our engraving is forty feet high and is arranged as a three story building, with stairways, window casings, etc. It is furnished with shelves on the outside from which jumps varying from eight to thirty feet may be made into the life net. Overhanging timbers are arranged at the top to support heavy iron rings to which ropes may be fastened for practice with the life belt. Near the tower are standards for horizontal life lines. One engraving shows the students practicing on these lines. This is most admirable exercise. Our other engravings show practice with the life net and the students preparing to draw a line of hose up to the roof of a building.

It is to be hoped that fire drills will be established in other schools, as it promotes alertness of body and mind, coolness and courage, and the benefits of discip-



FIG. 1.—DRILL—PRACTICE WITH THE LIFE NET.



THE FIRE DRILL TOWER.

line are increased. There is an element of dash about it which appeals to the ardor of youth and implants a sense of responsibility, while the constant chance of practically exploiting their acquisition gives it a realism which military tactics as an adjunct of general school training does not possess.

THE FEET OF CHINESE WOMEN.

The small foot of the Chinese woman, which the Celestials call by a name signifying "golden lily," has always excited the curiosity of Europeans.

I have no intention of passing in review all the motives that have been adduced in order to explain why the Chinese have for ages past mutilated the feet of women, since one is just as unlikely as the other. It is not until about the age of four or five years that they begin to produce this distortion. The result is gradually obtained by the use of tighter and tighter bandages that produce in the organ a double movement of antero-posterior flexion upon itself and of rotation of the last four toes and their metatarsal bone around the first metatarsal. The effect of this first movement is to break the foot into two parts—one of them anterior, comprising the toes and their metatar-

sal, and the other posterior and comprising the calcaneum. The scaphoid bone, which in this work plays the part of a hinge, is entirely put out of joint. It is always more or less displaced and raises the skin of the foot, which, at this level, sometimes ulcerates (Figs. 1 and 2).

The accompanying figures, reproduced from photographs, represent the foot of a young lady of twenty. Its length is  $6\frac{1}{2}$  inches, and its weight (with  $2\frac{1}{4}$  inches of the ankle) 14 ounces. Viewed by its external face, it represents a rectangular triangle of which the hypotenuse, formed by the bone of the foot, is slightly convex at the level of the scaphoid bone. At the union of the third posterior and of the two third anteriors, its lower edge shows a cavity one inch in depth, resulting from the forced flexion of the foot upon itself. The lower face, of generally triangular form, shows us the arrangement of the deformed and compressed toes, which rest upon the ground through their dorsal surface. The nails are thin and atrophied, with the exception of that of the second toe, which looks like a claw. The diagram in Fig. 3 gives better than any description an idea of the deformation of a Chinese woman's foot.

After the foot has attained a sufficient degree of atrophy, and at the cost of considerable pain, the young Chinese woman has not yet finished suffering. She has to keep her feet constantly bandaged in order to be able to walk, and even then a long walk is impossible. The atrophy of the foot brings about an atrophy of the leg, which is reduced to the state of a skeleton, the muscles disappearing and hardly anything remaining but the skin and bone.

This atrophy of the leg contributes in a great measure toward increasing the trouble of walking and balancing. The Chinese woman can walk only with a shoe made to fit the form of her foot. This is provided with a flat heel which alone serves as a point of support for the entire body. The point of the foot does not touch the ground, and the women walk somewhat like club-footed persons. They are not very steady upon their feet, and when they become aged have to use a cane. They walk with their arms slightly extended and performing the office of a balance pole; and with the pelvis thrown back and the breast slightly forward, they

seem to be endeavoring to preserve their center of gravity. When their heels are close together, the slightest push may upset them. A foot is so much the more appreciated in proportion as it is smaller. The one that I photographed belonged to a woman of the people and was relatively quite large. Among the rich Chinese ladies it does not exceed  $5\frac{1}{4}$  inches, and the woman is prouder of her foot than of her face.

The Chinese woman is very modest when it is a question of her feet. I have several times attended mandarins' wives who were afflicted with foot troubles, and who consented only with great hesitation, and in blushing, to allow themselves to be examined; and even then they so arranged themselves as to expose only the ailing part.

All Chinese women do not have deformed feet.

This mutilation is more frequent in the south than in the north, and in cities than in the rural districts. The Manchoo women are not authorized to bandage their feet; and on this subject there are very formal imperial orders.

Some of the missionary societies, and especially some of the female missionaries, have for some time past been waging a war against this so-called barbarous custom. They even addressed Tsoung li-James, beseeching that minister to transmit their request to the Emperor; but he answered them that the Son of Heaven gave his subjects the right to do as they pleased.

The Chinese regard a deformed foot as a thing of beauty. What would Queen Victoria say were she to receive a petition signed by numerous Celestials asking

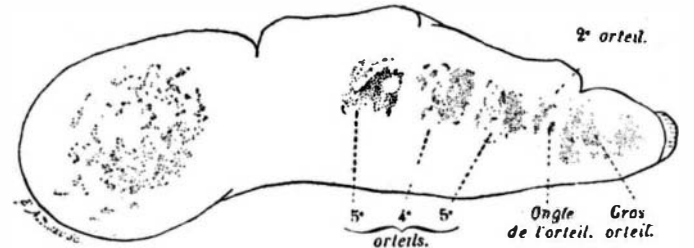


Fig. 3.—OS CALCIS AND DISTORTION OF THE TOES.

her to forbid the English damsels to wear corsets?—Dr. I. I. Matignon, in *La Nature*.

At the Pennsylvania State College, Center County, Pa., a column has been erected which is composed of 281 samples of building stones procured from 139 localities in the State. The base block is of conglomerate 6 by 6 by 2.5 feet; the base of column is 5 feet square; the height of column is 32.7 feet; and the weight 53.4 tons. This polyolith, constructed by the School of Mines, forms a comprehensive display of the natural resources of the State in structural materials, geologically arranged. It is a prospecting guide to the explorer for stone, and furnishes a comparative test of its durability by an equal exposure of all the quarry products to atmospheric influences.

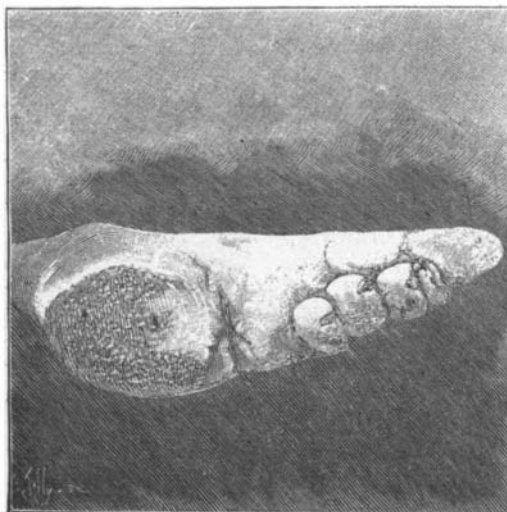


Fig. 1.—FOOT OF A CHINESE WOMAN—ARRANGEMENT OF THE TOES.

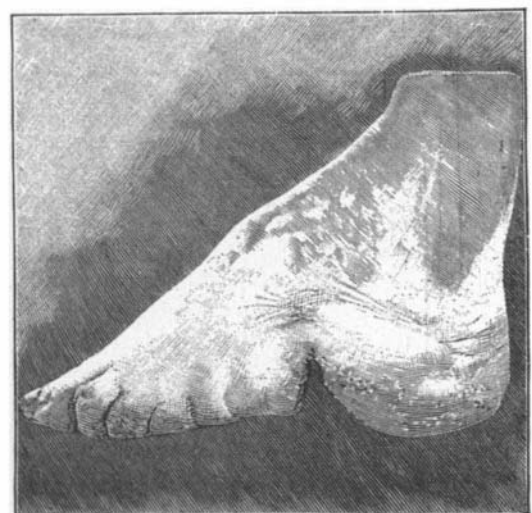


Fig. 2.—SIDE VIEW.