Bridges of Western China.
By James Hutson.

Perhaps one of the most interesting features of Western China is its bridges. On the Min River, flowing past the city of Kwanhsien, bridges can be counted in hundreds, of all shapes and sizes, and of many different modes of construction.

1.—The Sliding Rope.

This is a single bamboo rope fastened to stone or wooden pillars on the banks of the river. This rope, which requires both hands to span it, is stretched across the river generally from a high bank on one side to a lower bank on the other, but sometimes it is stretched across in level parts. When a person desires to cross the river he has to slide across on this rope, somewhat after this fashion. He produces a rope and a wooden cylinder from the basket on his back. This wooden cylinder is just two pieces of hard timber hollowed out slightly larger than the thickness of the rope. Half is placed on the upper and half on the lower side of the distended rope, the two parts thus fitting closely together are bound tightly with one end of the rope, the other end of which is passed under the

Note.—The illustrations used in this article were supplied to the author by Mr. A. Grainger.
buttocks and up under the other arm, and lashed tightly to the cylinder. The person now sits down on the rope, clasps both arms over the cylinder, and with one hand holding a bamboo tube which contains cold water, and the other the end of the rope, he lifts his feet with a spring from the ground which sends him shooting down the rope. The water from the tube is poured on the rope as he goes to make sliding easy. On the way, the man with a basket on his back is hanging over a raging torrent which flows perhaps 200 feet below him. If the rope is a steep one he will thus nearly reach the other landing stage, but if the rope should be in the least a level one, he will be left half way across the river and will have to pull himself hand over hand to the landing stage. As the weight of the rope makes it hang down considerably in the middle, timber and other weighty goods are sent across in the same way by using two or more cylinders. A worker on the other side pulling the material to the landing stage by means of a rope.

II.—THE BAMBOO ROPE SUSPENSION BRIDGE.

This kind of bridge is to be found in several places west of Kwanhsien, but as the largest is three li from the west gate of Kwanhsien city, we will take it as an example. This bridge, which is about 900 feet long, 25 feet high, and 10 feet wide, with seven spans, is made of eighteen strong bamboo ropes thicker than two hands can conveniently span. These ropes are supported at either end in the centre by strong masonry, while five sets of wooden piles are driven in the river at equal distances between these two points. The ropes at the ends are fastened to strong upright capstans which are twisted round, thus tightening up the bridge. The bottom of the bridge is made up of six ropes covered with loose boards. The sides are made up
of six ropes on either side. These ropes are supported and kept in place by boards with holes cut in them through which each rope is passed. The ropes are changed twice yearly—the old ones on the bottom are changed to the sides, and new ones take their place, while the old side ones are discarded. The bridge is tightened up; the boards which have been stolen or fallen into the river are replaced; and the repairs are finished. In crossing it swings backwards and forwards and has a tendency to make one dizzy, and if the boards are thinly placed it is rather tedious walking and very difficult to take pack animals across it.

In 1902 this bridge was completely destroyed owing to a raft having been swept from its moorings in high flood, and driven against the piles in the river, carrying them away. The bridge falling into the water, the flood tide swept it away, leaving only the masonry behind. As it is the main thoroughfare for the west of the river it was rebuilt in 1903 by the gentry and people using it most, at considerable public cost. There are public lands attached to it which pay for its half-yearly repairs and the caretaker, but any extra expense of building a new one has to be met by public subscription.

III.—THE IRON BAR SUSPENSION BRIDGE.

Iron bar bridges are found in several places in this district. The one at the market of Wentongchang, being the largest, we will select that one as a specimen. This bridge is about two hundred yards long, twenty feet high, and twelve feet wide. The iron bars, which are about three inches in circumference and about twenty feet long, are coupled together in equal lengths, laid across stone piers, and fastened to heavy masonry at both
ends. There are eleven parallel bars placed about one foot apart; one bar on either side, kept in position by iron supports, does duty as a handrail. The bridge surface is covered with boards and is almost level in appearance and steady when you walk on it. It is estimated that there are 100,000 catties of iron and it cost over Tls. 10,000 to build. In high flood the water flows over the bridge but it remains fast. It was carried away some thirty years ago owing to the wooden piles on which it was supported giving way, but now all the supports are built of hewn stone. The bridge is endowed with about 150 acres of land, which goes toward keeping it in repair.

IV.—STONE BRIDGES.

Stone bridges of all kinds are very common all over the Chentu plain. These are of all sizes and shapes, varying from the single stone slab and the flat-roofed stone parapet bridge to the long bridge with several high arches.

Eight li west of the city of Tongkingcheo there is a bridge known as the "West River Bridge," which bears on its portals this inscription—"West Szechuan's Greatest Bridge." This bridge is 220 yards long, eleven yards wide, eighty feet high, and has eleven fine red stone arches. Its top is concrete; its parapets are of stone. The whole structure is of the most substantial nature and shows what the Chinese are capable of if they had the money and a good government to lead them. It was built some sixty years ago, but soon after, the river changed its course leaving it dry and thus useless for the greater
part of the year. Under its arches are some sacred fishes which are kept there for the protection of the piers.

V.—FOOT BRIDGES.

These bridges are of a most varied kind. Some are of rough stone, single plank, single tree with a bamboo handrail, or sometimes two or three bamboos or palm trunks are thrown across the stream. Sometimes large and crooked trees are sawn in half and laid side by side, leaving immense holes which any person could drop through, necessitating the greatest care when travelling over them.

VI.—ROOFED BRIDGES.

Near the east gate of Kwanhsien there is a bridge called the "Great Peaceful Bridge." It was rebuilt in 1898 by subscription at a cost of about Tls. 3,000. It is built in three spans of about twenty yards each, the whole length of the bridge being under sixty yards and about twenty feet high.

While the river is dry for the cleaning operation, great deep pits are dug in the bed of the river, and heavy timber piles put in, eight or ten in a row, making the necessary piers; then whole trees, fifty or sixty feet long, are brought from the country on rollers, with perhaps 200 men pulling them. These are thrown across the spans, making
the necessary girders. After these are all in position they are hewn into a rough level, then boards are nailed across them closing up all the holes, and again on the top of this, where the traffic is heavy, slabs are laid and strongly clamped down with iron clamps, a roof of about fifteen to twenty feet high is then put over the whole, with recesses which are rented out at 200 cash each per month. As there are fourteen of these the income must be something like 30,000 cash. This goes towards the bridge fund. Close to the wall of Kwanhsien there are four such bridges, which are crowded in summer evenings because of their coolness, and which give harbour to many beggars.