

A MASAMUNE BLADE

AMONG the recent acquisitions of the Museum is a sword which there is good reason to believe was forged by the famous Masamune, commonly considered the greatest of Japanese swordsmiths. It will be the endeavor of this article to give a brief description of this splendid blade, prefaced by a few notes upon the history of the sword in Japan and the part which it has played in the life of that country.

The earliest known Japanese swords are of bronze; but steel had already been adopted before the beginning of history. Contrary to the common belief, these earliest swords seem to have been single-edged; the double-edged type, known as the *tsurugi* or *ken*, was probably of Chinese origin; both varieties were straight. Instead of being thrust through the girdle, as in later times, they were worn suspended by rings and cords, somewhat after the fashion prevalent in the Occident. These primitive swords had heavy ball pommels, and were intended to be used with both hands; their scabbards were of wood, covered with a thin sheet of copper, sometimes gilt, and the guards were of the same metal.

About the close of the seventh century of our era the old straight swords of both the single- and the double-edged types gave place to the curved single-edged blade, known as the *katana*, which has become the typical Japanese sword. Unlike the older type, the *katana* was not worn suspended, but thrust through the girdle, edge upward and hilt slightly to the right, making it necessary to turn it before drawing. Usually the scabbard was of a certain fine-grained wood, heavily lacquered; sometimes, however, especially in the case of the great ceremonial swords, both sheath and hilt were of ivory, wonderfully carved; and occasionally the entire scabbard was covered with shark skin inlaid with mother-of-pearl. The grip was regularly of shark skin, bound crosswise with a stout silken cord in which were interwoven metal ornaments which served partly to give a better grip and partly to conceal the plain bamboo pin thrust through the hilt and tang. For full dress the scabbard was of black lacquer and the hilt was bound with a blue silk cord, while the ornaments were of the alloy known as *shakudo*, a mixture

of copper and gold. Gayly colored scabbards, such as crimson, were not held in high repute, being affected principally by swash-bucklers and bullies. On journeys swords were carried in a special case of leather bearing the owner's crest.

Swords were classified according to their length. The longest, known as *tachi*, were seven or eight feet long, including the enormously long hilt of two feet or more; they were formerly worn by generals as a sign of rank, but were probably rarely put to actual use, although in the hands of a powerful man they could have done dreadful execution. Legend declares that Kato Kiyomasa, one of the two generals who led the Japanese armies of invasion into Korea in the sixteenth century, carried a sword fifteen feet long, with which he dismembered numbers of the enemy at every blow. The ordinary *katana* was of more modest dimensions, being rarely over two and a half feet in length of blade.

The short sword, or *wakizashi*, worn along with the *katana* by members of the *samurai* or military class, was usually about a foot and a half in length; as a rule its scabbard and fittings matched those of the longer blade. It was carried, in theory at least, to show the owner's instant readiness to sacrifice his own life if necessary. The privilege of carrying these two swords—the *katana* and the *wakizashi*—was jealously restricted to the *samurai* class, and was looked upon much as the right to bear arms used to be regarded in medieval Europe.

There were also many special forms of sword, most of them smaller than the *katana* and some smaller even than the *wakizashi*; most of these were for particular purposes, or were worn by men of certain professions other than that of arms.

The Japanese seem never to have developed regular shock tactics with their cavalry, and consequently the backbone of their fighting forces was the heavy infantryman armed with the double-handed sword. A charge of Japanese swordsmen, pushed resolutely home, must have been an exceedingly ugly thing to face in the days before the introduction of repeating rifles and machine guns. The Spaniards found it so when they invaded Siam from the Philippines, three hundred years ago, and were cut to pieces, in the most literal meaning of the term, by a force of Japanese mercenaries; and yet at that time the Spanish infantry were the terror of Europe.

Since the sword played so large a part in the lives of the people, a most elaborate etiquette gradually grew up about it, and the

slightest infraction of these customary observances was apt to lead to bloody duels and brawls. It was an insult to lay hands upon another's weapon, unless by special invitation to inspect it; and then the blade must never be breathed upon, or touched with the naked hand, but always handled with a silken napkin carried for the purpose. In inspecting a sword, the edge must never be turned toward anyone, nor must the sword be drawn entirely out of the scabbard, unless by urgent invitation of the owner. To clash one's own scabbard against that of another in passing on the street was a deadly insult, while the act of turning the sword in the girdle, as if preparing to unsheathe it, constituted a challenge of the most direct kind. Upon visits the sword must either be left at the door with one's servants, or else be removed from the girdle (sheathed of course) and laid upon the mats at one's right hand, a position where it would be difficult to draw quickly; this was at once a mark of confidence in one's host and a guarantee of one's own peaceful intentions.

Nothing is known of the origin of the swordsmith's craft in Japan, and it undoubtedly lies far back of the beginning of even the legendary period. The great period of the craft was the fourteenth century of our era, when a school arose headed by the famous Masamune and his scarcely inferior contemporary Muramasa. These two men were more than mere artisans. They brought to the production of tempered steel genuine genius—a genius as high as any that has ever appeared in any walk of life. There is little wonder that their fellow countrymen have credited them with more than human skill, or that their swords have ever since excited the most enthusiastic admiration, not unmingled with superstitious awe. This feeling has perhaps been heightened by the fact that the forging of a sword in the old days was always a semi-religious rite. The forge itself was almost a shrine, while the smith prepared himself for his task by severe fasting and self-purification. (This semi-religious character of the smith is not uncommon in other lands than Japan; it seems to date back to a time when metal was newly come into use, and was still looked upon as something mysterious and uncanny.) Mythical beings were believed to assist great smiths at their forging; among these were Inari, the Fox God, and Riu Jin, the Old Man of the Sea. Rumors have come down to us that the smiths sometimes used human blood in the tempering of their blades, and there may have been some basis for this

suspicion, since in old times it was a widespread idea that the success of any important enterprise could only be assured by the sacrifice of a human victim.

It is to the great Masamune that the sword recently acquired by the Museum is ascribed. The plain wooden scabbard and hilt with which it is equipped only emphasize the beauty of the blade. It is a most gracefully shaped weapon, of the typical *katana* form of the best period, and evinces every mark of the most consummate workmanship. The grooves, or flutings, along the sides of the blade, technically known as "fullering," are particularly striking, and in themselves evince the hand of a master in the working of metal.

The blade measures just thirty inches from the point to the *habaki* or ferule below the hilt; its greatest width is one and one-quarter inches; and its maximum thickness five-sixteenths of an inch. The cross section is hexagonal (leaving out of consideration, of course, the semi-circular grooves); that is to say, the back of the blade, instead of being flat as in many cases, is an obtuse angle formed by the junction of two planes. Strictly speaking, of course, to use the word "plane" here and in what follows is incorrect, inasmuch as their junction forms a curved line; but the curve is so slight, relatively, that it may be ignored. For about three-eighths of an inch of the distance from the back to the edge, at the point of greatest width (and proportionately throughout the rest of the blade), the sides are parallel in cross section, while through the remainder of the distance they converge in straight lines which thus form an exceedingly acute angle at the edge. There is a well-defined line marking the commencement of the point proper, which comprises two and one-eighth inches of the total length; this line is due to the fact that the surfaces bounding the principal portion of the point are not quite in the same plane as those of the remainder of the cutting edge of the blade, but form very obtuse angles with them.

The curve of the blade itself is slight, amounting to but thirteen-sixteenths of an inch (measured along the back); but it seems much more, on account of the way in which the blade slopes back from the hilt—rather abruptly, to Occidental eyes; but the Japanese seem to have found it effective enough. As usual, tang and hilt are united by what seems the rather simple and primitive device of a bamboo pin passing through both. In the duels which were so common in former times it was customary to moisten this pin, in

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order to cause it to swell and thus prevent its falling out at an awkward moment.

Before discussing some of the more important of the distinguishing features which appear in the texture of the blade, as opposed to its mere form, it may be worth while to state briefly the aims and the technique of the Japanese smith. His ambition was to secure a blade combining an extremely hard edge, capable of being ground to an almost incredible keenness, and a body of a tougher and more elastic quality, in order to avoid the brittleness that would result were the entire blade tempered to the same degree as the edge. The success with which this aim was realized is indicated by the fact that such a thing as a Japanese sword blade snapping is almost unknown.

In order to secure an absolutely homogeneous fibrous structure, the bar of metal, itself composed of a number of plates welded together, was repeatedly doubled upon itself and hammered out again. In the best swords this process was continued until the finished blade consisted of more than four million layers or laminations of steel. Each time that the blade was heated during its forging it was covered with a thin coating of refractory loam, in order to prevent the oxidizing of the carbon and the consequent turning of the steel into soft iron. Owing to the repeated doubling to which it had been subjected, the finished sword of good quality always showed a fine graining (or "skin," according to the Japanese) consisting of numerous minute lines; there are several types of this, each distinguished by name. On the sword under discussion this grain appears very clearly and beautifully, particularly in certain lights, in the form of multitudes of meandering lines, which seem to stream along the blade in roughly parallel patterns, coiling and uncoiling and wandering from side to side in most intricate fashion. Their presence not merely enhances the appearance of the blade, but is one of the best tests of its superlative excellence.

After the bar of steel had been worked into shape (after months or even years of hammering in the case of the best blades of the great smiths), it had to be tempered in such a way as to secure the hard edge and elastic body mentioned above. This was most ingeniously accomplished by a single operation. First, the blade was covered with the loam composition already spoken of, and a narrow and irregular strip of this was removed, leaving bare what was to be the cutting edge. The sword was then once more heated,

with the utmost care, and, at the exact moment when the trained eye of the smith told him that the right degree of heat had been attained, was plunged into the tempering tank, in a certain manner, varying partly according to the shape of the blade and partly according to the practice of the individual smith. The degree of heat, the temperature of the water, and the manner of immersion all contributed to the final result.

The hardened edge thus obtained is divided from the tough and elastic body by a wavy and irregular margin. The two portions of the blade are easily distinguishable by their strong contrast in color, the former having a white and misty appearance like that of a mirror breathed upon, while the latter is bright and shining. It is to be noted, however, that the designs formed by the graining alluded to above appear equally clearly in both areas, and indeed wander from one into the other with perfect indifference.

That the entire blade should be well knit and homogeneous in structure was no less important than that the edge and body should receive each a distinct temper. That this is the case in the blade which forms the subject of this paper is shown by the way in which the two tempers blend into each other; there is no hard line between the misty cutting edge and the mirror-like body, and even when viewed through a strong lens the two are seen to melt into each other in perfect unison.

The aspect of the blade alters greatly according to the angle at which the light is allowed to strike it. Here and there, when held in a certain way, may be seen groups of tiny shining spots known to the Japanese connoisseur as *niye* and most aptly compared to clusters of stars; these are so small as to be almost invisible save when viewed through a lens. The *niye* occur in most blades of high class, but are especially common on those of Masamune.

In addition to the above are the *nioi* or "vapor spots" which appear along the misty, wavering border line between edge and body, and help to give its characteristic indefinite aspect.

Many other peculiarities occur in this blade, but most of them are even less easily to be made out than those already mentioned, and they are of a sort interesting only to the connoisseur as aids in deciding upon the authorship of any given blade.

There is probably no one in America—there are but few indeed even in Japan—who could say with finality that the blade above

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described was actually a fabrication of the great Masamune. Even, however, though it be not—and the balance of evidence strongly declares that it is—it is at least an example of the Japanese swordsmith's art at its very best, and even to the untrained eye it discloses many of those qualities which enabled the sword to play the important part that it did in the life of Old Japan.

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