

Kumihimo

The Zigzag Magic of Japanese



Foreword

Kumihimo, the art of braiding three or more threads into a cord, has been practiced in Japan since the prehistoric Jomon period. It is distinguished by its exceptional elasticity and strength, as well as the ability to braid complex and beautiful cords in many cross-sectional shapes and color patterns, depending on the braiding technique used. Having such features, *kumihimo* has played an important role in rites and religious ceremonies in Japan since ancient times. With the changing eras, moreover, its range of uses has expanded and new techniques and designs have been developed accordingly. With its exquisite sophistication, both in design and function, the world of *kumihimo* holds many surprises, even for those already familiar with Japanese braided cord.

This exhibition displays some 140 actual examples of braided cord from *kumihimo*'s long history in Japan, each with its own distinctive character. Many of the cords date from the Muromachi to Edo periods (1336-1868), a time of flourishing development for *kumihimo*. Others date from the Meiji period (1868-1912), when braided cord became widely available, to recent years, a time of broad, new applications.

The exhibition begins with the braided cord used by samurai society for linking components of armor and on sword mountings. This is followed by examples of decorative cord, used by the public for tying *obi* (kimono sash), *haori* (kimono-style coat), and other kimono accessories. Displayed next are *kumihimo*'s broad contemporary applications, such as its use as a composite material, with resin, in the socket of a prosthesis (artificial limb). Finally, we present work by Jusuke Fukami, the only *kumihimo* craftsman to be certified as a Living National Treasure, and the *kumihimo* of the Andes (Peru and Bolivia), which like Japan developed highly sophisticated braided cord. We hope you will enjoy the profound, complex beauty of *kumihimo* through our displays.

We wish to extend our deepest appreciation to Makiko Tada (Director, The Kumihimo Society) for her supervision and support, and everyone whose efforts have made this exhibition possible.

Utility and Beauty of *Kumihimo*

Makiko Tada, PhD (Director, The Kumihimo Society)

Cord-shaped textiles were created in all parts of the world in prehistoric times, in response to need. Considering the ease this skill brought to everyday tasks, it can be called a remarkable achievement of human knowledge.

Among the cord-shaped textiles, braid — the oblique interlacing of three or more strings was used in cultures the world over because of the convenience it offered. Prehistoric versions were nevertheless simple in structure like the three-stranded braid.

In Japan and the Andes region, braids evolved over many centuries into sophisticated braid cultures. Numerous, often complex, methods of braiding were devised, some so technically advanced, their structures are hard for us to understand, today.

Braiding or *kumihimo*, found a start in Japan with round, four-strand braid as the cord marking pattern on Jomon pottery, three-strand braid excavated from the Torihama shell mound in Fukui prefecture, and five-strand braids like those found at the Sannai-Maruyama site in Aomori prefecture, which are estimated to be 5,500 to 6,000 years old. Braids thereafter developed in distinctive Japanese forms while absorbing influences from China.

The most excellent was “double-side tortoise-shell patterns” (*ryomen-kikko-gumi*) braid, referred to as the “braid of mystery,” a good example of which is the solemn, dignified braids still preserved at shrines and temples. It is believed to have been created using the “*kute-uchi*” method exchanging threads with loops, practiced by four people sitting side by side. Then, the beautiful *odoshi* and *kurijime-no-o* braid that adorned armor, and the sage-o cord tied on sword scabbards and *tsuka-maki* cord used to improve the sword handle grip, not to mention the modern *obi-jime* and *haori-himo*—all are beautiful and practical types of braid.

Kumihimo still has plenty of room for innovation. At the International Conference on Braiding held in Iga last year, for example, over one thousand distinctive items of braids were displayed. Presented here, as well, are examples of non-straight braids and braid-reinforced composite materials used to reinforce lightweight, high-strength machine parts.

Applications of Braided Cord

Akio Ohtani (Associate Professor, Kyoto Institute of Technology)

Kumi-mono, a generic category to which *kumihimo* belongs, broadly refers to the techniques of combining, interlacing, or interlocking materials. *Kumihimo* most often refers to braided cord, and few people are aware that braiding is also used to strengthen fiber-reinforced plastic (FRP). FRP is a material combining plastic and high-strength fiber (such as carbon fiber, glass fiber, aramid fiber), and is characterized by its lightness, rigidity, and durability. For this reason, its applications are wide-ranging, it being used in sports equipment (tennis rackets, golf club shafts, skis, etc.), and automotive and aerospace applications, as well as prosthetic arms and legs. The advantageous features of braids are utilized in FRP in the form of braided carbon fiber and glass fiber. These features, which include the “continuity of the braid fibers,” the “ability to freely change the angle of the fibers,” and “various cross-sectional shapes that can be produced,” play an important role in FRP. Not only is their performance is extremely high, but because variously shaped braid structures can be produced, they deliver the required performance at a high level. Displayed here are several kinds of products taking advantage of these features. They include products employing the high strength of braids, products giving play to freedom of braid shape, and products exhibiting the beautiful patterns of the assemblies. Some of the products are currently in practical use, while others will be applied in the near future.