

nagas, since the letters bend downwards like the tail of a snake, and that Lentsa is the script of the gods, since the letters of Lentsa bend upwards.

These scripts are quite complex and occupies bigger spaces while printing and are not suitable for printing in small sizes. Therefore, these scripts are not used in everyday writing or for any reading texts, except for inscribing mantras and prayers on the walls, temple columns, prayer wheels, stones, slates, doorways, and trees, and also as a decorative script to engrave seals, and to inscribe book titles on the covers of traditional *pecha*. *Khando Dayig* (treasure scripts) is another ornamental script that can be only seen on terma (concealed religious texts), and it is found inscribed naturally on stones.

5.1.4.2. Ink

Gold is considered as the best material to prepare ink, followed by silver and stone. Important and precious religious texts are written with ink made from gold and silver dust. In the early days, when there was no pen or pencil, the writer would carry a *nagkong* (inkpot mostly made of brass or copper) filled with ink along with a *nyugu* (a pen made from a special bamboo called *si*). While inks and pen were made locally, inkpots had to be imported from either Tibet or India.



5.1.4.3. Pen

The best calligrapher would make use of a traditional hand-made pen from bamboo called *si-nyug* or of a bird's quill called *dro-nyug* or metal pen called *chag-nyug*. Their nibs must be flat and smooth with a pair of tongues. Special bamboo from *Toeb Chadana* was most commonly used to make the *si nyug*. There is a belief that a pen is an abode of *Rigsum Gonpo*, meaning that the nip of a pen represents *Manjushri* (Buddha of wisdom), the main trunk represents the power of *Vajrapani*, and the base of the pen represents *Avalokitesvara*, the Buddha of compassion.

Experts fear that with the ever increasing use of computers, the art of calligraphy may be heading for oblivion in the coming years. The preservation of the art today is due mainly to the practice that had continued in our monasteries, which are increasingly making use of computers and computer graphics.

5.1.5. The Art of Papermaking

Daezo or shogzo or the art of papermaking originates from an age-old tradition whose history can be traced back to the eighth century during the first advent of Buddhism in Bhutan. It is said that Bumthang used to export daesho papers to the Tibetan King Thrisong Deutsen as a religious offering. Known for its durability, daesho papers were used in writing Buddhist cannons and commentaries at Samye monastery.

Daesho sheets were also bartered with goods from Tibet in the past. In the olden days, daesho was mainly used for writing religious scriptures, legal acts, and letters and for maintaining tax records. *Teryig* or treasure scripts were written on daesho parchment.

In Bhutan, two species of daphne plants are used for making traditional paper; *Edgeworthia gardneri*, called *dae kar* (white daphne) and *Daphne spp.*, known as *dae*



nag (black daphne) in Dzongkha. Sometimes, these papers were known as *dug shog* (poisonous paper). The bark of daphne contains a kind of insect-repellent toxin and is known to last for hundreds of years. In the past, paper was made to meet domestic needs except for supplying some to Tibet, but today daesho is sold in the market and even exported. A person who makes daesho is known as *daezop*.

5.1.5.1. Process of Papermaking

The art of papermaking is confined to the northern, central and eastern part of the country where the high



altitude daphne plants are found in abundance in the dense mountainous regions.

Daphne is a small individual plant with fragrant white flowers that grows mainly in altitudes ranging from 1300 to 3500 meters above sea level, while *Edgeworthia gardneri* grows in thick groves at about 500 to 3000 meters. The plants can regenerate and be ready for use again in about three to eight years.

Daeshing is harvested in the summer; the bark is stripped off the plants and then soaked in water so that the outer layer and the residue of dirt are washed away. It is then dried in the sun. Once dried, the soft inner tissues are separated from the outer layer of the bark and left to dry again.

This tissue is then cleaned, cut into small pieces and boiled in water for many hours. Wood ash is added to speed the cooking process which also helps to breakdown the fibre into softer pliable pulp. The cooked pulp is soaked in water to remove any hard and foreign body left, before pounding it thoroughly using heavy wooden mallets to make it softer and homogeneous. Natural dyes, roots, pine leaves, and different types of flower petals are added to the pulp while it is being pounded. The beaten pulp is then put in a tub of water and stirred until it spreads uniformly.



There are two ways of making the pulp into sheets of paper

5.1.5.2. Resho

The process of obtaining finished daesho sheets, commonly used in Bhutan, produces a thin and whitish paper locally known as *resho* or 'cotton paper'. To obtain *resho*, the pulp is poured and spread uniformly onto a cotton cloth screen while floating in water. The sheet of paper is taken off, after the screen and the pulp are dried for half a day in the sun or near a fire. Once dry, the fibre becomes a thin sheet of translucent paper that is peeled off and is ready for use, and the mould is then reused.



5.1.5.3. Tsarsho

The second process of obtaining the finished daesho sheets is only used in Bhutan. This method produces a thick, strong and slightly brown paper locally known as *tsarsho* 'bamboo paper'. To obtain *tsarsho*, a bamboo screen is lowered into the tub of pulp, and is lifted out. The fine pulp is then spread evenly over the surface of the screen while it is out of the water. The fine pulp turns into paper sheet on the bamboo screen when it is subsequently turned over. The sheet then falls off, and is placed upon a growing pile of freshly made paper. The



bamboo screen mesh, which is pressed, and left to drain water, leaves a bamboo imprint on the sheet. A heavy stone is placed on the pile for almost a day, to drain out the water. The sheets are then peeled off, and stuck on to mud walls of a hut, one by one. When the sheets are dry, they fall off the mud walls.

5.1.6. Bronze Casting

Lugzo is the art of casting statues, *sertog* (pinnacles on the roofs), and other ornaments to decorate the buildings of temples and monasteries. Bronze casting dates back to the 17th century. It is said that Zhabdrung Ngawang Namgyal invited Newari artisans from as far as Nepal to cast statues and many other religious items like bells, bowls for water offering, trumpets, cymbals, vase and so on. That is why there is a sense when historians say that Bhutan may have learnt the art of bronze casting from the visiting artisans. Availability of these items at cheaper rate has almost cast away the art, if it was not for the timely establishment of the Special Commission for Cultural Affairs (now Department of Culture) in 1985.

Bhutanese artisans employ two methods to cast bronze. The methods are:

5.1.6.1. Wax Casting Technique

In wax casting technique, the required object is prefabricated with wax which is then covered with good quality clay from inside and outside. It is then dried several times in the sun. The object is then heated in the fire so that the wax melts away leaving a thin space between the hardened clay. Finally, melted copper, silver or gold is poured onto the figure until the cavity is filled up. It is then left to cool. Once cooled, the clay is broken and removed from both sides which produce the required shape of the object. This method is time consuming and needs greater effort as it takes one master copy for every new product.

5.1.6.2. Sand Casting Technique

In this technique, a master copy of an object or a statue to be cast is made either out of clay, wood or any other materials. Clean sand is thoroughly sieved, allowing only fine particles to settle. The fine and powdery sand is thoroughly kneaded with the liquid extracted from sugarcane. The soft dough is applied to the master copy to form a duplicate copy/negative of the object. In case of a statue, different parts of the body are taken out and cast separately. On this shape of the object the melted materials (molten) is poured from outside. This method

is used more frequently in Bhutan as one master copy will work for many products.

The casting process generally includes the following stages:

1. Drawing – This involves drawing the object/master copy to be cast.
2. Casting – Casting involves pouring the molten materials onto the master-copy of the object, which is applied either with sand or wax.
3. Sculpting – Once the molten materials are poured on the master copy, it needs to be sculpted to right shapes.
4. Welding – In sand casting method, especially the statues, different body parts are cast separately. Once they are complete, the parts are joined together by welding.
5. Carving – Casting also involves carving of different shapes and patterns on the objects.
6. Polishing – Once everything is done, the object is then polished.

5.1.6.3. Statues

Different statues of Buddha and Buddhist deities and saints are cast in the manner described above. The statues are gilded with gold.

