

- An aerial part of *a-jab* (Bot. *Aster diplostephioides*) is used to join and heal fractured skull. It also helps to reduce fever, swelling, inflammation and pain especially in the upper part of the body.



Local healers also examine and feel the nerves and the broken parts of the bone, and start massaging it. Then turn the affected part to clockwise and then anti-clockwise direction until one hears a cracking sounds. Those ardent believers of local healers (*menpa*) talk about the performance of miraculous healing. Si-ka-ri la-ha-ro – a vine found in thick forest is also used for fractured joints or broken bones.

Traditional Treatment for Animals

While the above plants and methods are used to treat

human ailments, the following methods are applied to treating animals:

- The materials required for treating sick pig were miktang (fire), axe and rope. The rope is tied to the axe where fire is tied to the end of the axe. Then it is tied to the pig sty (*gordong*). This used to be practiced in eastern Bhutan and this is believed to cure sick pig.
- Buckwheat porridge is used to cure a sick cow.
- In olden days, people used to boil the stem of a climber called dakor (in Tshangla) and extract its juice which, if cooled and fed to the cow, helps to cure the dysentery of a cow.



4.4. INDIGENOUS METEOROLOGY

How did our forefathers perceive or predict the weather condition during their times?

Traditional Bhutanese knowledge of weather is related to the interrelationships between humans and spiritual powers. Knowledge about the weather was something founded on shared local experiences. Elderly people claim that weather prediction during their times was based upon a particular system of knowledge and set of beliefs about the nature.

In the olden days there was a common belief that the phenomenal world was inhabited by a host of spiritual beings and deities and must be acknowledged in relation to the areas of human activity. Various human actions were believed to affect the local weather. For instance, it is believed that destroying the forest would

pollute the environment and thus harm the *neydag* and *zhidag* (local guardian deities). It is said that the pollution created by the burning of solid waste could provoke the fury of *lha* in the sky. Thus, there are some weather-making or weather controlling rituals (weather rituals) which existed in the traditions for the purposes of inviting rain during the times of drought, prevention of frost and hail.

Bhutanese conceived all aspects of weather like rain, snow, sunshine, cloud, and hail by looking at the sky, signs, noise from animals and insects, and personal experiences. It comes in the form of the following beliefs:

- When cloud moves in the easterly direction, rain is expected and if it moves with greater speed, then the strong wind is expected.

- If there are stars in the sky, it is predicted to have a clear sky the next day, if not, then it is believed to have rain the next day.
- If reddish color cloud appears in the morning, there would be rain or snow fall that day.
- If the streaks of clouds appear in orange colour in the south, sun is expected the next day.
- If one experiences a body or joint pain, then he would say that the weather will be gloomy and might rain any time.
- If one feels thirsty or very dry without any reason, it is likely that the following day will be a sunny day.
- When nose bleeds, it is believed to rain.
- If cows are seen dancing, then it is known to rain the next day and it snows when calf moos.
- If the frogs croak any time of the day, it brings rain or believes that it is going to rain.
- When *chiligpa* (*kben* bird) chirps while raining heavily, it signifies sunshine and vice versa.
- Crackling of bamboo indicates dry weather.
- They also judge the weather by the direction of the smoke from anywhere. If the smoke goes up the mountain side, fine weather is expected and if it moves down towards the lower elevations, bad weather is predicted.

4.5. INDIGENOUS ARITHMETIC

The indigenous system of numerical reading begins with *chig* (one) and goes on as the Roman numerical counting.

Long before when there were no numbers to represent or had modern means of calculation, Bhutanese used fingers, pebbles and stones, sticks, rosary beads to represent numbers. The counting goes till *khey chig* (twenty) and on every count of twenty they use one stone. And the counting goes on:

khey chig (20x1)	- khe chig (20)
khey khechig (20x20)	- nyi shu chig (400)
khey nyi shu chig (20x400)	- kheychen chig (8,000)
khey khechen chig (20x8000)	- yangchen chig (160,000)
Pched	- a half
Pched dang nyi	- one and a half
Ched dang sum	- two and a half
sum cha chig	- one third
zhi cha chig	- one fourth
nga cha chig	- one fifth and so on

4.6. ASTROLOGICAL KNOWLEDGE

Bhutanese follow lunar calendar to keep track of time and the events in their day to day activities. Moon cycle goes through its phases from New Moon, quarter moon, Full Moon, and back to new moon in a period that lasts one month (30 days). Some lunar days depending on the shape of the moon especially the full moon day is considered to be auspicious to perform meritorious activities.

Astrology

Astrology or *Kartsi Rigpa* (*skar rtsi rigpa*) plays an important part in the life of the Bhutanese, who believe that supernatural powers, both good and evil, as well as the stars and planets, exert a profound influence on human life. The Bhutanese turn to astrology not only to understand these influences, but also to avoid potentially unfavourable times and heighten the effects of favorable periods.

Thus, the Bhutanese will consult astrologers on the birth of a child (*ke tsi*), a marriage in the family (*bag tsi*), prior to the construction of a house, to ascertain the auspicious hours for a funeral (*shin tsi*), and for numerous other purposes like promotion, start of a new journey, etc. Horoscopes also cast at the beginning of each year to have a forecast of the year's ill-fortunes and to determine appropriate remedies (*lomoi-tsi*). The 12 year signs, the Eight Trigrams, the Nine Numeric Squares, the Nine Planets and the 28 constellations are all interpreted according to their elemental properties of Wood, Fire, Earth, Iron and Water, and their effects on a person is thereby calculated according to their influences.

Since astrology is closely linked to astronomy, both occupy a position of honour in traditional Bhutanese scholarship. While Bhutanese astrology is derived from the Indian system (*kar tsi*), its astronomy is of Chinese origin (*nag tsi*).