



## Taking a leaf from *Jantri* for traditional medicament- an ancient manuscript in *Tankri*

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The present paper highlights the importance vis-à-vis plight of a traditional script *Tankri* of Chamba, Himachal Pradesh. Through surveys in 70 villages that involved interviews with 550 residents, only one respondent was found to be versed in it. He uses an ancient manuscript named *Jantri*, scripted in *Tankri*, for prescribing medicines. Interactions and literature review revealed that *Tankri* was once a princely script of Chamba that now has no takers. *Tankri* originated from the Brahmic family of scripts and the *Jantri* holds information on uses of natural resources for curing human and animal related ailments. A total of 32 resources that include 24 of plant origin, 3 of animal origin, and 5 minerals were used for making formulations to cure a total of 13 diseases. Writing amulets in *Tankri* on tree bark using traditional ink was found to be a characteristic of the region. Unfortunately, the script is fast disappearing and so is the knowledge associated with it. Its disappearance would be a great loss to mankind. It is high time that conservation and decoding of such scripts is prioritized. Developing a database of knowledge holders and digitizing the information recorded in *Tankri* may be the starting point of this.

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Our ancestors possessed intricate knowledge on natural resources and established customs/traditions that showed obeisance to the same<sup>1,2</sup>. They recognized that a cultural identity to the same must be established and importance of its transmission through generations led to coming up of arts, sketches and scripts<sup>3</sup>. A number of diseases, drugs, methods of application have been recorded by scholarly physicians<sup>4,5</sup> in their own unique scripts and language<sup>6</sup> such as the *Vedas* that are written in Sanskrit<sup>7,8</sup>. Similarly, *Charak Samhita* and *Sushruta Samhita* are other examples that describe surgical training, instrumentation and its procedures<sup>9,10</sup> in ancient scripts. These scripts not only hold information on the uses of metals, minerals and their purification processes to treat illnesses<sup>11</sup> but also on the classification of healers such as the *Shalyavaidyas* (surgeons), *Bhisaks* (physicians), and *Bhisagatharvans* (magic doctors)<sup>12</sup>. Additionally, ancient healing methods, use of incantations, amulets, religious texts etc. are also common in these ancient texts<sup>13</sup>.

Wealth of this knowledge, which is available in regional and local scripts, is still used by herbalists to treat people especially in remote areas. Many of our

modern day drugs owe their existence to pursuing leads in these ancient texts<sup>14,15</sup>. Unfortunately, despite their importance, a very limited account of them is available. It is ironical that close to forty languages and scripts in India are threatened with extinction and only a handful of people are capable of reading and writing them<sup>16,17</sup>. Their withering off leads to loss of knowledge documented using them and also have implications for human well-being. Declining interest in the same is limiting our appreciation for traditional knowledge and its prospection<sup>18</sup>.

It is with this background that the present study aimed at 1) collecting and documenting information on the specialized ancient ethno-medical text in the Churah region of district Chamba, 2) enlisting resources mentioned in the text that are used by the herbal healers in the preparation of various formulations for curing diseases and 3) generating awareness on the plight of the script.

### Methodology

The study was conducted in Churah subdivision of district Chamba, Himachal Pradesh. Field surveys were carried out in 70 villages and interviews were conducted with more than 550 residents of the

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subdivision between 2016 to 2019 for documenting traditional knowledge and practices prevalent among the indigenous people of the region<sup>19</sup>. During surveys, it was revealed that herbalists in the past referred to an ancient text *Jantri* written in *Tankri* script to cure human and cattle related ailments in the region.

We therefore carried out intensive and focussed surveys to identify knowledge holders versed in *Tankri* who still use *Jantri* for curing. The informants were interviewed through semi-structured questionnaires. Details pertaining to the ancient manuscript, its content including the formulations (method of drug preparation including the ingredients used, part and quantity used) were documented. Nomenclature of the identified ingredients was confirmed by cross checking their descriptions in vernacular literature<sup>20</sup> and various databases<sup>21</sup> (Indian Medicinal Plants database). Later, the plant specimens were collected and brought to the CSIR-Institute of Himalayan Bioresource Technology herbarium for identification and record. As mandated, prior consent of the informants was taken for participation in the study.

## Results

Despite our best of efforts, we could identify only Shri Hari Ram from the village Himgirikothi who can read and write *Tankri* in the area (Fig. 1). He is a traditional healer of high repute that is evident from the number of people visiting him and the distance they travel to reach him. He still uses *Jantri* scripted in *Tankri* to heal people.

### The text and the script

Locally referred to as *Jantri*, the book has 90 pages and an overall dimension of 24.5 cm (Length) × 13.5 cm (Width) × 3.5 cm (Height). It is told to be 300-400 years old and is bound in Goat leather (Fig. 2 & Fig. 3). Though, the writer of the same is not known,



Fig. 1 — Shri Hari Ram—the lone person whom we could identify versed in *Tankri*

it is believed to have been written by the Royal court in *Tankri* script. *Tankri* is known to have originated from the Brahmic family of scripts<sup>22</sup> and was historically used to write the Gaddki, Kashtwari and Chambyali languages<sup>23</sup>. During the pre-British times, *Tankri* was the script of the princely courts in the valley and was highly used in day-to-day business and communication<sup>24</sup>.

While one theory states that the script derives its name from *tanka* i.e., coin which was used for commercial interactions<sup>25</sup>, the other theory states its origin from the old landed class of Punjab<sup>26</sup>. The script is written from left to right using thirty-four consonant letters, ten vowel letters, and ten vowel diacritics<sup>27</sup>.

### Content and uses

*Jantri* carries information on the uses of resources that includes Arsenic trioxide, alum, bezoar, butter, cinnabar, copper alloy, cowries, cow urine, honey, shell and products of plant and animal origin (Fig. 4). As apprised by Shri Hari Ram, *Jantri* has formulations to cure fever (jwaar), paralysis (adhrang, angmaar, lakwa), jaundice, (haldro), leucorrhoea (hadkhar), snakebite (sarpdansh), arthritis (gathiya, bai), etc. in human beings. At the same time, cures for foot (gohkru) and mouth (lot) diseases of cattle are

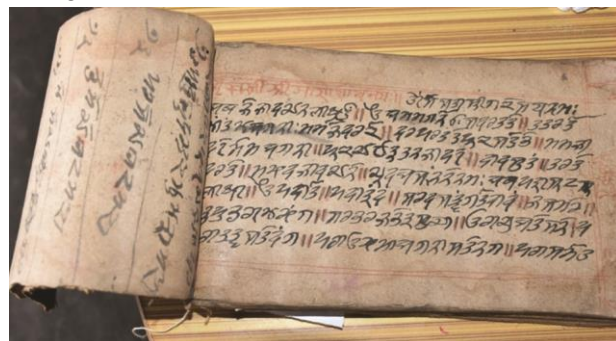


Fig. 2 — The *Tankri* script



Fig. 3 — *Jantri*—the book and its leather binding



Fig. 4 — Natural resources mentioned in the book that are used for treatment

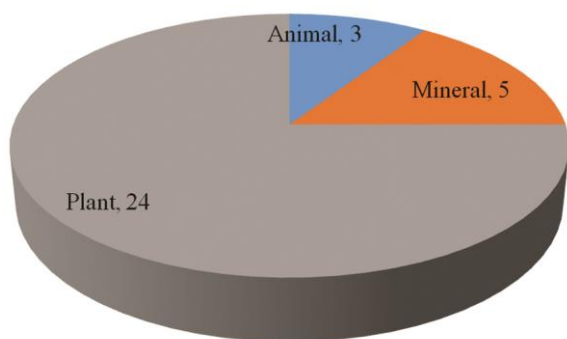


Fig. 5 — Classification of resources based on their origin

also documented in it. The text mentions three types of medications i.e., oral, topical, and use of mantras & amulets.

In total, 32 resources that include 24 of plant origin, 3 of animal origin, and 5 minerals (Fig. 5 & Fig. 6) are listed in the *Jantri* and are used for making formulations to cure a total of 13 diseases. The ash of *Aloe vera* which is prepared on a conch by slow overnight heating is used to cure leucorrhoea while cowries (*Cypaea moneta*) are used for combating stone related problems. The use of cinnabar to cure body pains in adults and copper alloy to treat stomach related ailments in children is well

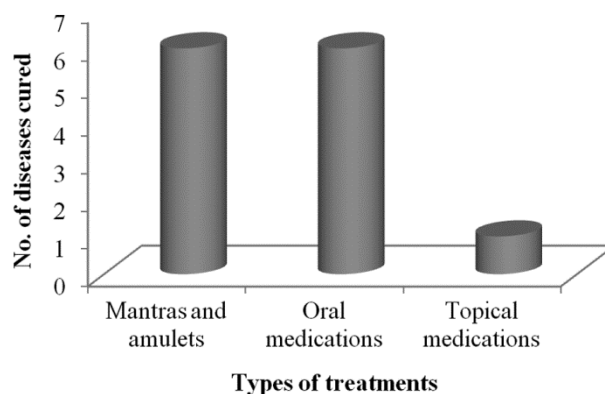


Fig. 6 — Number of diseases cured using three means of medicaments

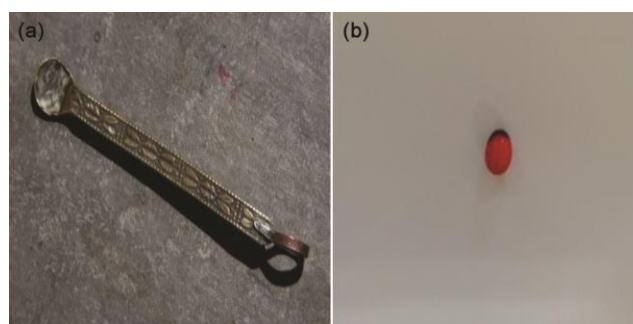


Fig. 7 — Traditional modes for ensuring dosage; A). Copper spoon and B). Seeds of *Abrus precatorius*

described in *Jantri*. The topical treatments described in the manuscript are mostly for snakebites. The roots of *Achyranthes aspera* and *Calotropis gigantea* are crushed, and mixed with copper sulphate and cow urine to be applied on the affected area. The other remedy uses Arsenic trioxide mixed in cow milk. Roots of *Tinospora cordifolia* mixed in cow urine are also applied as an antidote to snake venom (Table 1). The formulations containing minerals are prepared by a process called *shodhana* that is essentially done to purify the raw material. The process involves use of alum, cow milk, cow urine, plant juice, and lime juice etc. which disintegrates the raw material to usable metals and minerals by neutralizing its toxic effect.

With respect to dosage of medicines, the same is given using traditional weighing-*Ratti* (weight of a single seed of *Abrus precatorius* is considered as 1 *Ratti*). Copper spoons of different sizes are also used as means of establishing dosage (Fig. 7). The book also contains information on use of mantras and amulets locally called *Jantars* as medicaments. Bark of bhojpatra (*Betula utilis*) is used as the base material for writing talismans. These are written using indigenously prepared herbal ink that are red, black

Table 1 — Herbal and mineral based uses mentioned in the *Jantri*

S. No.	Name (Family)	Common name	Origin	Purpose	Mode of preparation/ parts used
<i>Resources used in oral medications</i>					
1	<i>Aloe vera</i> (L.) Burm. f. (Xanthorrhoeaceae)	Grithkumari	Plant	To cure leucorrhoea	The entire process involves preparation of an ash that is obtained by overnight slow heating using cow dung cakes. The pulp of Grithkumari ( <i>Aloe vera</i> ) is placed inside a conch which is covered with an earthen lid. To airtight the lid, khariyamitti (gypsum) is layered at its periphery. The conch is then placed inside the fire and left overnight. In the morning a white ash is obtained which is taken empty stomach (2 Ratti) with cow milk. Consumption of sour items is prohibited during the course of treatment.
2	Conch	Shankh	Animal		
3	Cinnabar (Mercury sulphide)	Singarf	Mineral	All type of body pains	The singarf (Mercury sulphide) is mixed with alum powder and burnt on low flame for its purification (Shodhna) as it is extremely poisonous. The purity of the same is validated by mixing lemon juice to the same. One Ratti of the purified content is mixed with small quantity of butter and taken empty stomach.
4	<i>Cypraea moneta</i> (Cypraeidae)	Kawdi/ Cowries	Animal	Stone related problems	About 2-3 cowries are added to lime water and kept overnight. By morning the cowries completely dissolve in water forming a milky liquid. One tea spoon of the same is taken empty stomach during morning and evening.
5	<i>Tribulus terrestris</i> L. (Zygophyllaceae)	Gokhru	Plant	Kidney stone	The leaves of the plant are boiled in water for about half an hour in low flame. This is then cooled and the decoction is taken orally to treat kidney stone.
6	<i>Centella asiatica</i> (L.) Urb. (Apiaceae)	Brahmi	Plant	Stomach related problems	Leaves of <i>Centella asiatica</i> are grinded with sik in <i>kharal</i> (mortar and pestle). A small quantity (1 Ratti) of this is mixed with small quantity of butter and given orally to small children.
7	Alloy of copper	Sik	Mineral		
8	<i>Mentha spicata</i> L. (Lamiaceae)	Pudina	Plant	Curing dysentery	Leaves of Mentha, seeds of Ajwain and Camphor are mixed in equal proportions (1 Tola each) and crushed. The powder is dissolved in 1 litre of water and left overnight (called Amardhar). In the morning misri (rock candy) is dissolved in 250 ml of this liquid that is taken orally empty stomach until relief.
9	<i>Trachyspermum ammi</i> (L.) Sprague (Apiaceae)	Ajwain	Plant		
10	<i>Cinnamomum camphora</i> (L.) J. Presl (Lauraceae)	Camphor	Plant		
11	<i>Pistachia integrimma</i> J. L. Stewart ex Brandis (Anacardiaceae)	Kakkarsinghi	Plant	Used to cure cough	The fruit of the plant is burnt completely to obtain an ash. To the ash are added one tola each of banslochan (bamboo silica) and red alum. To the complete mixture a small quantity of honey/ butter is mixed (for better taste) before taking it internally.
12	Bamboo silica (Poaceae)	Banslochan	Plant		
13	Red alum (Aluminium Potassium sulphate)	Fitkari	Mineral		

(Contd.)

Table 1 — Herbal and mineral based uses mentioned in the *Jantri*

S. No.	Name (Family)	Common name	Origin	Purpose	Mode of preparation/ parts used
<i>Resources used in topical medications</i>					
14	<i>Calotropis gigantea</i> (L.) Dryand. (Apocynaceae)	Aak	Plant	Snake bite	Roots of <i>Calotropis gigantea</i> and <i>Achyranthes aspera</i> are mixed in equal quantity. To this, 1/2 tola of neela thotha (copper sulphate) is added. The same, after making a paste with cow's urine, is applied on the snake bite affected area.
15	<i>Achyranthes aspera</i> L. (Amaranthaceae)	Puthkanda	Plant		
16	Copper sulphate	Neela thotha	Mineral		
17	Arsenic trioxide	Varkihartal	Mineral	Snake bite	The powder of the mineral is mixed in cow milk and applied on snake bite affected area.
18	<i>Tinospora cordifolia</i> (Willd.) Miers (Menispermaceae)	Saanp ki butti	Plant	Snake bite	Root of the plant is crushed and mixed with cow urine and applied on snake bite affected area.
<i>Resources used for writing mantras and amulets to cure human and animal diseases</i>					
19	<i>Betula utilis</i> D.Don (Betulaceae)	Bhojpatra	Plant	The surface is used for writing mantras and making amulets	Bark
20	<i>Jasminum humile</i> L. (Oleaceae)	Peelichameli	Plant	Used for making kalam (pen) for writing	Stem
21	<i>Punica granatum</i> L. (Lythraceae)	Anaar	Plant	Used for making kalam (pen) for writing	Stem
22	<i>Santalum album</i> L. (Santalaceae)	Chandan	Plant	Used in making ink of yellow and brown colours	Wood
23	Bezoar	GoroChan	Animal	Used for making inks of orange & dark brown colours for writing amulets	The stone is present in the gall bladder of cattle which has wax like texture and unique aroma.
24	<i>Crocus sativa</i> L. (Iridaceae)	Kesar	Plant	Used for making ink of orange colour	Stamens
25	<i>Curcuma longa</i> L. (Zingiberaceae)	haldi	Plant	Used in making ink of red colour for writing amulets	To the turmeric an appropriate quantity of alum/lime juice is added until the colour changes to red.
26	<i>Citrus limon</i> (L.) Osbeck (Rutaceae)	Nimbu	Plant		
27	<i>Cinnamomum camphora</i> (L.) J. Presl (Lauraceae)	Kapur	Plant	Added to herbal inks. Exhibits antibacterial, antiseptic properties and also acts as coolant and sedative	Wood
28	<i>Convolvulus prostratus</i> Forssk. (Convolvulaceae)	Vishnukranthi	Plant	Added to herbal ink. Known to have calmative and sedative properties	Root
29	<i>Trillium govanianum</i> Wall. ex D. Don (Melanthiaceae)	Nagchatri	Plant	Added to herbal ink. Known to have anti-parasitic, antifungal and antibacterial properties	Root
30	<i>Valeriana jatamansi</i> Jones (Caprifoliaceae)	Shamak	Plant	Added to herbal ink. Exhibits sedative and tranquilizer properties	Root

(Contd.)

Table 1 — Herbal and mineral based uses mentioned in the *Jantri*

S. No.	Name (Family)	Common name	Origin	Purpose	Mode of preparation/ parts used
31	<i>Hedychium spicatum</i> Sm. (Zingiberaceae)	Kapoor kachli	Plant	Added to herbal ink. Known to have antibacterial and antifungal properties	Rhizome
32	<i>Abrus precatorius</i> L. (Fabaceae)	Ratti	Plant	Weight of the seed is used for measuring dosage of medicine	Seed

and blue in colour. The inks are made from eight prime ingredients, called *Ashtgandha* i.e. Gorochan (stone in the gall bladder of cattle which has wax like texture and unique aroma), Kapur (*Cinnamomum camphora*), Haldi (*Curcuma longa*), Kesar (*Crocus sativa*), Kapoor kachri (*Hedychium spicatum*), Itra, Muske amber, and Kumkum/sindoor (turmeric in slaked lime). To increase the healing potency, ingredients like chandan (*Santalum album*), nagchhatri (*Trillium govaniatum*), shamak (*Valeriana jatamansi*) and vishnukranthi (*Convolvulus pluricaulis*) are also added during ink preparation depending upon the ailment. In order to write amulets and talismans, twigs of peelichameli (*Jasminum humile*) and anaar (*Punica granatum*) are used as kalam (pen). Vegetarian food, cleanliness, and faith on almighty are prerequisites for using the book. Consumption of alcohol is strictly prohibited during book consultation.

#### Current status of *Tankri*

*Tankri* now appears to be in dire state. As detailed earlier, we could only identify a single individual who can read and write the script. To our utter surprise, even in his own family, no one else knows *Tankri*. They are least interested in carrying forward this traditional knowledge. Thus, only a handful of people appear to be versed in it<sup>28</sup>. Ironically, once a script of royals and masses, it is now struggling for existence.

#### Discussion

Information on traditional medicines, which forms an important component of health and wellbeing<sup>29</sup>, is often documented in scripts and languages that are seldom understood by many. On one hand these scripts are dying and on the other hand their knowledge holders are also fast disappearing. This is a grim situation. The case of *Tankri* in Himalaya is one such example. Our results highlight the wealth of information recorded using this script in a single manuscript-the *Jantri*. However, the fate of the script and the knowledge associated with it hangs by a thread. Despite our repeated efforts of searching for

people versed in *Tankri*, we could only identify one. Thus, on a larger context, only few countable people may be surviving who can possibly decipher *Jantri*. As evident, the book documents cure for human and animal ailments using natural resources, and also through amulets and mantras. This highlights that spiritual beliefs and medicine go hand in hand in several cultures as has also been documented in previous studies and best explained by the Brokpas of Ladakh in Tibet; Tai-Khamyang tribe, Mising tribe, and Sonowal Kacharis of Assam<sup>30-33</sup>. Interestingly, this is not only confined to primitive societies but also practiced by inhabitants of developed nations<sup>34-39</sup>.

The use of various minerals to cure diseases like Jwaar (fever), Pandu (Anemia), Arsha (piles), Sotha (inflammatory disorders) etc. in the present area do find mention in the ancient global texts<sup>40,41</sup>. Use of copper sulphate and sodium chloride have been reported to treat wounds, scabies, and intestinal parasites<sup>42,43</sup>. Their purification known as *shodhna* is an important practice<sup>44,45</sup>.

As observed during the present study where *conch* and *cowries* formed important ingredients of medicines, use of shells has been highlighted in Siddha literature for curing fever, jaundice, indigestion and bronchial asthma<sup>40</sup>.

The ancient Indian texts like Rigveda, Samaveda, Yajurveda, and Atharvaveda also highlight rituals for human health<sup>41-42</sup>. These involve appeasement of God through prayers and offerings, recitation of mantras, and wearing amulets and gems<sup>41</sup>. Likewise, the *Jantri* captures writing amulets and wearing them. The amulets are generally worn to counter 'evil' forces. Elsewhere also, studies have reported their importance such as in Jordan<sup>43</sup>, Malaysia<sup>44</sup> and Ethiopia<sup>39,45</sup>.

The present study not only highlights the knowledge and resources used for curing ailments but also the cultural significance of healing based on mantras, amulets etc.

Traditional scripts and literature, therefore, have an important role to play. Tribal medical practitioners

who relied on these scripts have made invaluable contributions to the *materia medica* of traditional medicine. Recognizing the fact that these traditional scripts, literature, and people versed in them are fast declining; special drives should be planned to identify knowledge holders for a comprehensive database. In this regard proposal to encode *Tankri* is be a noteworthy step. The importance of our rich cultural legacy needs to be popularized. Awareness creation therefore becomes necessary. Planning special events or drives may be one such way.

### Conclusions

The present study concludes that traditional literature in its own unique script holds wealth of information that is time tested and of high local relevance. Their disappearance would be a great loss to mankind. Leads that have implications for mankind. needs due attention. It is high time our traditional wisdom and heritage that we are so proud of is preserved. The fact that we could identify only one person with practicing knowledge of *Tankri* points to its grim state. This essentially calls for efforts towards prioritizing preservation and rejuvenation of ancient scripts.

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### Conflict of Interest

The authors declare that they have no conflict of interest.

### Author Contributions

DR and AB carried out field surveys, collected and compiled information. BL provided inputs towards drafting. SKU conceptualized the work and prepared the manuscript. All authors have read and approved the final manuscript.

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