

MEDICINAL PLANT FOLKLORE AND THE AYURVEDIC SYSTEM OF MEDICINE IN THE INDO-TIBETAN OUTER HIMALAYAS

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ABSTRACT—The present study deals with the ethnomedicinal flora of the Ayurvedic system of medicine in one of the most remote corners of the Outer Himalayas at the border between India and Tibet. The Ayurvedic system of medicine is indigenous to the Indian subcontinent. This ancient art of healing has a history of 7,000 years, and more than 2,000 prescription drugs have been reported based on the herbal wealth of the Himalayas. There is no way of calculating how many new chemical structures, some possibly of great importance to human life and health, lurk yet undiscovered in this flora. The main objective of this endeavor was, therefore, to identify the medicinal flora and medicinal practices associated with the Ayurvedic system of medicine and to suggest their potential as a source of new drugs for modern medicine.

The Himalayas personify nature's medicinal bounty. This 3,000 km long arc is a rich repository of wild and cultivated medicinal herbs used in the "Amchi" (Tibetan), "Unani" (Greek), "Sidha" (South Indian), and "Ayurvedic" (Indian) systems of medicine. There are more than 15,000 known plant species in the Himalayan ranges. While some herbs are used in modern medicine, as many as 400 plants are used in indigenous drug preparations by local inhabitants. Due to concerns of the indigenous population regarding the detrimental side effects of the allopathic medicines, the use of Ayurvedic herbs has dramatically increased over the past 25 years. The natives utilize their knowledge of herbs found in the high mountains to cure their illnesses and those of their livestock. Preliminary ethnomedicinal investigations by a relatively few adventurous explorers (Hamsley and Pearson, 1902; Steward, 1916; Abrol and Chopra, 1962; Sharma, 1977, 1989, 1993-95, 1997; Buth and Navchoo, 1988; Suma, 1998) have provided a wealth of ethnomedicinal data on the native flora. The Ayurvedic system of medicine and its offshoots such as the Amchi and Sidha systems, all indigenous to the region, are based on the unity of microcosm and macrocosm and have a completely holistic outlook in eradicating disease from the body and mind. Furthermore, these ancient systems of medicine bring science, philosophy, religion, and nature together for a complete understanding of the complex tapestry of life. The Himalayan flora has been the main source of these systems of medicine. However, the pristine and remote Himalayas, which have hitherto remained undisturbed, are showing signs of decay and human onslaught. The present study has attempted to underscore the fact that a further understanding and documentation of this magnificent repository of medicinal wisdom must be a priority before it dissipates into oblivion.

MATERIALS AND METHODS

The study area lies near the Indo-Tibetan border in the northern Outer Himalayas at 32°10' to 33°55' N longitudes and 76°45' to 78°40' E latitudes at an elevation of 3,000 to 4,500 m. Eth-

nomedicinal investigations were conducted during the summers of 1997 and 1998. Ethnobotanical data on medicinal herbs used by the local inhabitants were gathered. Village folks, local medicine men, clergy, religious mendicants, and the inhabitants of the "gompas" or monasteries were consulted for their views on the medicinal lore associated with the locally used plants. Voucher specimens were prepared and deposited at the herbarium facilities at the University of Tennessee, Martin, Martin, Tennessee. Taxonomic identification of the plant material was confirmed by the local Ayurvedic and Amchi clinics known for their collections of medicinal herbs.

RESULTS

Medicinal plants used in the Ayurvedic preparations by the inhabitants of the study area in the Outer Indo-Tibetan Himalayas are listed alphabetically by family, species, local name (in quotation marks), and medicinal use.

Anacardiaceae

Rhus succedanea L. "kakra"—Powdered galls are taken with honey for the treatment of asthma and cough. The gall powder is given to children for diarrhea. A decoction of the galls is effective in treating gum disease.

Apiaceae

Angelica glauca Edgew. "chora"—Leaves and seeds are boiled in water. The filtrate is used as a laxative, especially for infants. Also, the filtrate mixed with yogurt makes an excellent remedy for dyspepsia.

Daucus carota L. "gajar"—Powdered seeds and a tea made from seeds are effective for inducing abortion. Also, the root is eaten raw to expel intestinal worms.

Ptychotis ajowan Benth. "ajwain"—Seeds are chewed or seed powder is mixed with rock salt and ginger and consumed with warm water for discomforts associated with indigestion, colic, and diarrhea. The seed oil is used for cholera.

Araceae

Acorus calamus L. “vacha”—The powder of the rhizome is mixed with honey and the paste is taken with goat’s milk for the treatment of epilepsy, cancer, and cardiovascular diseases.

Asteraceae

Achillea millefolium L. “gandana”—A tea made from leaves and flowers is taken with honey to strengthen the heart and also to treat stomach disorders.

Eclipta alba Hassk. “mochkand”—Leaf juice is mixed with cinnamon powder and the mixture is consumed as a general tonic and to treat liver disorders. The leaf juice-cinnamon mixture also is rubbed over the scalp for hair growth and for treating premature graying of hair. The leaf juice also is applied externally to treat eczema.

Jurinea dolomiaea Boiss. “dhoop”—The fumes of burning root are utilized for their antiseptic properties on wounds and for fumigation purposes. A decoction of the root made with honey is used for treating colic.

Saussurea lappa Clarke. “puskara”—Powdered root is taken with warm water as an expectorant and for asthma. A tea made from the root is used as a diuretic. Root powder mixed with ginger, honey, and clarified butter, is used as a tonic. A paste of root powder and yogurt is recommended for patients suffering from jaundice.

Taraxacum officinale L. “kanphool”—A tea made from the root is claimed to be useful in treating urinary disorders by increasing urinary flow rates. Also, it is used for treating hepatitis. The milky secretion from the plant is useful in removing warts.

Berberidaceae

Berberis vulgaris L. “kashmal”—Juice of the freshly picked berries is known for its diuretic properties and hence given for the treatment of hypertension. The juice also is used to treat jaundice and other liver disorders. A decoction made from the leaves and stems is consumed as a laxative.

Boraginaceae

Onosma echioides L. “rattan jot”—Leaves and flowers are finely chopped and mixed with honey. The paste is consumed with warm milk for rheumatic pains and as a heart tonic. Tender roots are vigorously rubbed over granite and the resulting slush is used as an antiseptic for wounds.

Bursaceae

Boswellia glabra Roxb. “gugal”—The oleo-gum-resin which exudes from the stem is boiled in water and the mixture is used for spongy gums. Smoke from the burning oleo-gum-resin is inhaled to treat bronchitis. A decoction made with the oleo-gum-resin, honey, and black pepper is consumed to reduce tissue inflammation and backaches.

Cannabinaceae

Cannabis sativa L. “bhang”—Raw and cooked leaves are consumed as a sedative. Dried, powdered leaves are mixed with honey and the mixture is given for the treatment of diarrhea.

A paste made from the leaves is applied over the skin for treating dermatitis and even cancerous growths.

Cruciferae

Brassica juncea Coss. “sarson”—Seeds are ground into a powder, made into a paste with goat’s milk, and consumed for treating hemorrhage and body aches.

Cucurbitaceae

Benincasa cerifera Savi. “petha”—Roasted seeds are eaten to expel intestinal worms. The fruit is given with warm cow’s milk to treat epilepsy and other nervous disorders. A decoction of the fruit and almonds is given to patients suffering from asthma and bronchitis.

Trichosanthes anguina L. “chachinga”—The leaves are chopped and mixed with honey. The paste is taken with regular tea to relieve angina. The root is boiled in water and the filtrate is consumed as a purgative. The seeds are ground into a fine powder and taken with water as a laxative.

Ericaceae

Rhododendron campanulatum Don. “surngar”—Twigs and wood are dried, powdered, and boiled in water. Upon cooling, the decoction is given to patients suffering from chronic fevers. Leaves are chopped and mixed with honey and the mixture is used to treat rheumatic pains and skin disorders.

Gentianaceae

Gentiana kurroo Royle. “karu”—A decoction is made of the root with ginger root powder for use in treating high fevers. Tea made from the root and cinnamon bark is used as a tonic. A powder made from the root, dried lemon peel, and cardamom fruit (*Elettaria cardamomum*) is taken with a locally brewed beer called “chang” as a valuable tonic.

Guttiferae

Mesua terra L. “nagkesra”—A syrup of dried flower buds in honey and yogurt is given for dysentery. A mixture of dried, powdered flowers in clarified butter is applied to bleeding hemorrhoids. A decoction made from the bark is effective in treating stomach disorders.

Iridaceae

Crocus sativa L. “kesar”—The flowers are boiled in goat’s milk and the mixture is taken to regulate menstruation and relieve menstrual pains. Furthermore, the stigmas of the flowers are mixed with almonds and clarified butter and taken as an aphrodisiac.

Lauraceae

Cinnamomum iners Reinw. “tejpatra”—Chopped leaves, raisins, and black pepper are boiled in water. The filtrate is consumed to relieve cough and fever. A tea made with tender leaves is considered to be an excellent diuretic.

Liliaceae

Gloriosa superba L. “kali harard”—A rhizome powder is taken with water as a laxative and for relieving intestinal discom-

forts. It also is effective in expelling intestinal worms. Furthermore, the leaves are boiled in water and the filtrate is used to kill head lice.

Linaceae

Linum usitatissimum L. "alsi"—A warm poultice made from seeds is used externally to relieve rheumatic discomfort and to treat skin afflictions like eczema and boils. Tea made from the seeds is taken with honey to treat coughs and colds. After steeping the seeds in water overnight, the filtrate is consumed as a treatment for hypertension.

Loranthaceae

Viscum album L. "bhanga"—Ripe berries and leaves are soaked in water overnight. The filtrate is taken for high blood pressure and arrhythmia. A tea made from the leaves is effective in reducing high fevers. A decoction of berries made with honey is consumed with goat's milk as a tonic.

Malvaceae

Hibiscus tillaceus L. "pola"—Freshly cut root slices are rubbed over the affected area to relieve rheumatic discomfort. Root juice, applied externally on the forehead, is effective against high fevers. Root juice is effective against dandruff.

Myrtaceae

Eugenia jambolana Lam. "jaman"—The leaves are soaked in water overnight. This infusion is given to patients for treating diabetes. The bark is ground into a fine powder and mixed with mustard oil. The paste is an effective remedy for bleeding gums. Leaf juice is used to treat dysentery and the ripe fruit is consumed for increasing urinary flow.

Nyctaginaceae

Mirabilis jalapa L. "sandhayaraga"—A tea made from the root makes an effective purgative. A mixture of dried root powder and clarified butter is consumed with milk as a tonic.

Oxalidaceae

Oxalis corniculata L. "amlika"—Chopped leaves are mixed with honey and goat's milk and the mixture is consumed for the treatment of diarrhea and dysentery. Chopped leaves are taken with yogurt to treat jaundice. Chopped leaves are locally applied for removing warts.

Papaveraceae

Papaver somniferum L. "khus khus"—Seeds are taken with warm milk for insomnia. The unripe capsule is chopped and soaked in boiling water. The decoction is consumed with honey for relieving muscular pains. A paste of the root made in yogurt is applied on the skin to relieve high fever.

Papilionaceae

Pterocarpus marsupium Roxb. "pitasala"—A tea made from the freshly peeled bark is used for the treatment of mild cases of diabetes.

Pinaceae

Abies webbiana Lindl. "talispatra"—Juice from freshly picked leaves is given with honey for cough, asthma, and bronchitis. Powder made from dried leaves is taken with goat's milk to treat enlarged spleen. Leaf juice mixed with cow's or goat's milk is given to infants for cough and high fever.

Pinus gerardiana Wall. "neoza"—Seeds are eaten for rheumatism. Also, a paste made from powdered seeds and honey is taken with goat's milk to increase semen production.

Poaceae

Bambusa bambos Retz. "bans"—A decoction of leaves and tender shoots is taken with honey to treat diarrhea and stomach disorders. The same decoction is taken with warm water for expelling intestinal worms.

Polygonaceae

Rheum emodi Wall. "revand-chini"—A powder made from dried rhizomes is given with water to children suffering from constipation. Also, a tea made from the rhizome and ginger root is used for its anti-inflammatory properties. Freshly cut rhizome is rubbed over the affected skin area to relieve itching.

Ranunculaceae

Aconitum belfourii Wall. "atis"—The tuberous root is dried, powdered, and consumed with goat's milk as an aphrodisiac. Furthermore, it is prized as a tonic. The root powder mixed with honey is given for cough. A mixture of the root powder and ginger is used for high fever and diarrhea.

Aconitum ferox Wall. "visha"—A root tincture made with ethanol is taken internally for cancer and snakebite. Also, a tea made from the root is used as a cardiac stimulant.

Delphinium brunonianum Royle. "kasturi"—Leaf oil is applied over affected areas of the body to get rid of ticks.

Nigella sativa L. "kalaunji"—The seeds are soaked in vinegar overnight and then ground. The mixture is ingested to treat intestinal worms or applied topically for skin problems such as leucoderma and acne.

Saxifragaceae

Saxifraga ligulata Wall. "pashanbheda"—Dried rhizome powder is boiled in water and the decoction is used to expel kidney stones and in treating prostate gland enlargement.

Scrophulariaceae

Rauwolfia serpentina L. "sarpagandha"—A tea made from the root is consumed to treat high blood pressure, insomnia, and insanity. It is considered to be a prized sedative to relieve stress, anxiety, and irritability.

Verbascum thapsus L. "valrphul"—Smoke from burning leaves is effective in treating asthma. A powder made from seeds is taken with goat's milk as an aphrodisiac. A tea made from leaves is effective against whooping cough.

Solanaceae

Datura stramonium L. "dhatura"—Smoke from the burning seeds and leaves is inhaled for treating asthma. Furthermore, the capsule containing the seeds is soaked in water overnight

and baked over flames from cow dung cakes. The capsule and seed powder is used to treat malaria.

Solanum xanthocarpum Schard. “kant kari”—A poultice made from the leaves and bark is used to treat rheumatic pains and swellings. A decoction of the root with honey is efficacious for promoting conception in women.

DISCUSSION

The Himalayas have provided numerous plants used in the Ayurvedic system of medicine. This remote, pristine, and high-altitude ecosystem has hitherto remained undisturbed. However, this repository of medicinal wealth and wisdom is showing signs of decay due to both natural and anthropogenic causes. What the region needs is a concerted effort by the people, government, and scientific community to bring about a quantitative and qualitative change in the management and preservation of the medicinal wealth and the strategic ecology of this unique and fragile ecosystem. The Himalayas are regarded as the natural pharmacopeia with a healing touch. In the Indian subcontinent and neighboring countries some 70 percent of the human population is being treated in accordance with the traditional medical system, Ayurveda, although modern medicine is freely available throughout the region. In recent years, however, the efficacy of Ayurvedic therapies is being subjected to scientific scrutiny for their role in modern medicine. The symbol of Ayurveda is the lotus flower, the eight petals of which represent the eight disciplines of the Ayurvedic system of medicine.

The present study does not pretend to be a thorough exposition of the entire complex of Ayurvedic medicine, but since an understanding of the medicinal plants is a major part of the disciplines, a modest amount of relevant matter is reported. The results reported herein supplement the findings discussed in earlier studies (Sharma, 1989, 1993–95, 1997) conducted in the same general area. With growing internationalization of the world and the present interest in alternative medicine, Ayurvedic ther-

apies may play a vital role in the amelioration of human health in the future.

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