1. Introduction

Forest is referred to as an area occupied by different kinds of trees, shrubs, herbs and grasses and maintained for the production of wood products. Technically forest is an area set aside for the production of timber and other forest produce or maintained under woody vegetation for certain indirect benefits which it provides. Nature has endowed India with rich forests, which cover about 20% of the geography area of the country. Over 40,000 species of plants are found in these forests of which over 7,000 are endemic. India has about 3,000 species of trees. In their extent, distribution and potential the forest of Jammu and Kashmir constitute of the biggest industry and being so they are the mainstay of the economy of the state. Kashmir Himalaya range of India is pre-eminently a land of forests, which among other things are the mainstay of the economy. The valley is rich in forest wealth and 51% of its total geographic area is under forests. The forests of Kashmir valley are distinguishable into Deodar, Kail, Fir, Chir, and mixed broad leaved zones in the region.

The forests of Kashmir valley have been classified by Champion and Seth (1968) under groups 12, 13, 14 and 15 in the revised classification of Forest Types of India. The forest, thrive better between 2500-2900 m. Beyond 3000 m, the arboreal forests fade into high level fir forest up to 3200 m, the upper timber forest are less dense and poor in quality, which ultimately gives way to bush-land vegetation beyond 3200 m. The valley is located in the northern part of India in the Karakoram and western mountain ranges. It lies in between the Himalayan range in the north and of the Pir panjal range in the south comprehended between latitude 33° 55’ to 34° 50’ and longitude 74° 34’ to 75° 35”. The average elevation of the valley is 5,300 feet above sea level. (Figure)

2. Methodology

This study is a part of the research carried out on the Seed collection and Identification of forest trees of Kashmir (Jammu and Kashmir) by the senior author. It is chiefly based on the exploration – cum-collection of tree species from the study area and plant material has been deposited in the herbarium of Forest Research Institute, Dehradun. The
ethnobotanical information has been collected from the knowledgable/older people of the area. The species here have been arranged alphabetically giving correct name, important synonyms, family, vernacular/common/local names, English name, short description, phenology, distribution and ethnobotanical importance.

2. Survey Results

2.1 Enumeration:

**Abies pindrow** Royle (Pinaceae)
Vernacular/Common/Local name: Badul, drewar, tung.
English name: Western Himalayan Silver Fir.
Tall evergreen trees with a narrow cylindrical crown of horizontal branches or drooping branches; bark dark grey or greyish-brown become more or less furrowed with maturity. Leaves linear, flattened, spirally arranged, 2-4 cm long. Cones erect or cylindrical.
Fl.-April, cones ripen in Sep-Oct.
Distribution: Jhelum, Lolab Valley and Sindh Valley
Ethnobotanical importance: Wood used for packing cases, building construction and for furniture. Branches are used as fuel. Fresh leaves ground and mixed with equal quantity of honey is given to patients in doses of one teaspoonful twice a day for curing cough and cold. Bark is used as a tea substitute by nomads. Leaves are also used in asthma.

**Abies spectabilis** (D.Don) Spach. (Pinaceae)
**Pinus spectabilis** D.Don.
**Abies webbiana** Lindl.
Vernacular/Common/Local name: Badul, kaucb-badul.
English name: Himalayan Silver Fir.
Tall evergreen tree with dense cylindrical crown of pendulous branches; bark blackish and less deep fissured than *Abies pindrow*. Shoots hairy. Leaves 1-2 by .1 in., flat, narrow-linear. Cones always erect or cylindrical and are shorter and thicker then *Abies pindrow*.
Fl.-April cones ripen in Sep-Oct.
Distribution: Hills
Ethnobotanical importance: Wood used for packing cases and also used for ceilings and floor boards. The dried leaves are used to stop bleeding and to improve digestion. The powdered leaves along with juice of *Adhatoda zeylanica* and honey is used in asthma. The juice of fresh leaves is antiperiodic and is given to infants suffering from fever and chest affection. The gum mixed with oil of roses is rubbed to get relief from headache.

**Acer caesium** Wall ex. Brandis. (Aceraceae)
Vernacular/Common/Local name: Trikan, tilpatra, kanal.
English name: Maple.
Large deciduous tree; bark pale grey sometimes dark with slivery patches. Leaves serrate pale-beneath. Flowers yellowish green, appearing with the young leaves.
Fl. March-April; Fr. Oct.-Nov.
Distribution: Gulmarg, Gurais, Phelgam, Pir Panjal
Ethnobotanical importance: Wood is used for carving and for bowls, plates and ladles. Branches used by women as love medicine. Wood extracted is applied on wounds and also used to cure skin disease.

**Acer pentaponicum** Stewart. (Aceraceae)
Vernacular/Common/Local name: Trikan, kanal.
Deciduous tree; bark grey. Leaves broader then long, sometimes 3-5 lobed, with truncate base, and 3 prominent pennivend nervs. Fruit short corymbs, wing erect or divergent, and semi ovate.
Fl. April-May; Fr. Aug-Sep.
Distribution: Lower Jehilum.
Ethnobotanical importance: Wood used for ploughs and branches used as fuel. Bark used for cold and cough.

*Aesculus indica* Hook.f. (Hipocastanaceae)

**Pavia indica** Wall.
Vernacular/Common/Local name: Handun.
English name: Indian horse-chestnut.
Deciduous tree; with scaly buds; the old bark peeling off upwards in long thick bands. Leaves opposite, digitate, exstipulate, deciduous. Flowers white-yellowish streaked. Fruit depressed dark brown.
Fl. April-May; Fr. Aug.-Sept.
Distribution: Througout Kashmir forests.
Ethnobotanical importance: Wood is used for house boats, buildings, construction of huts, water troughs and supports article. The seed oil is used in rheumatism and also applied to wound. The bark is made into paste for the application on painful dislocated joints. The root is used as a cure for leucorrhea; fruits are used as colic for application of fistules in dysentery and pneumonia.

*Ailanthus altissima* (Mill) Swingle. (Simaroubaceae)

**Toricadendron altissimum** Mill.
*Ailanthus glandulosa** Desf.
Vernacular/ Common/ Local name: Alamthar, almtees.
English name: Tree of haven.
Deciduous tree; bark bitter, grey. Primitive leaves with out stipules and sample hairs. Flowers yellowish, white. Fruit capsule, one seeded.
Fl. April-May; Fr. Sep-Oct
Distribution: Through out valley (self regenerating).
Ethnobotanical importance: Wood used for fuel. Decocction of bark is useful in diarrhoea and dysentery. Fruits used in eye troubles and as an. Leaves used for skin disease like scabies.

*Alnus nitida* Endl. (Betulaceae)

Vernacular/ Common/ Local name: Champ-Kul, kanza/ Sarul.
English name: Alder.
Large tree; branch-lets pubescent; bark dark brown, deeply furrowed. Leaves elliptic or elliptic-ovate, acuminate, entire or obscurely crenate, glabrous. Fruit spikes.
Fl. Sep-Oct; Fr. Ripen in winter but remains long on the tree.
Distribution: Jhelum valley, Keran; Lolab valley.
Ethnobotanical importance: Wood used for house construction, boxes and carpentry. Bark is used to treat diphtheria; also for rheumatism.
Fraxinus excelsior

Vernacular/Common/Local name: Rhing

English name: Hawthorn.

Small tree; bark dark grey or peeling off in long flakes. Leaves broader then long, pinnately irregular. Flowers white. Fruit red, ovoid.

Fl. April-May; Fr. Aug-Sept.

Distribution: Jehlum, Lolab and Sindh valley; Gulmarg; Pahelgam, Pirpanjal Range.

Ethnobotanical importance: Wood used for axe-handles, walking sticks and as box-wood. Fruit extracted is used in heart disease, such as blood pressure.

Juglans regia

Vernacular/Common/Local name: Doon, Akhrot.

English name: Walnut.

Large deciduous tree; bark grey, vertically fissured. Leaves large elliptic to oblong-lanceolate. Flowers small green. Drupe ovoid, 5 cm long, green.

Fl. April-May; Fr. Sept.-Oct.

Distribution: - Found in whole of the valley

Ethnobotanical importance: Wood is used in agricultural implements, furniture, musical instruments. The bark is used for cleaning teeth and is thought of having medicinal value. Exocarp is vermifugal and paste in warm water is used for frostbite. The leaves are to stop bleeding and are toxic.

Juniperus communis

Vernacular/Local name: Betar, pethri, pama, chui.

English name: Common juniper, red cedar.

Small tree; stem procumbent. Leaves in whorls of 3, linear sharply pointed. Flowers axillary, yellow. Fruit oblong, sub-glabose, blue black berry.

Fl. May-June; Fr. Aug-Oct, of Second year

Distribution: Lolab Valley, Dachigam, Jehlum and Sindh Valley.

Ethnobotanical importance: Wood used as fuel. Wood and young twigs burnt as incense. Plant is used in piles, diarrhoea, dysentery, rheumatoid arthritis. Infusion of berries is diuretic. Berries, wood and oil reported to be used in remedies for cancer, indurations, polyps, swellings, tumor's and warts. Plant is reported to improve digestive

Juniperus recurva

Vernacular/Local name: Haulber, chui, pama.

English name: Weeping blue juniper.

Small evergreen tree. Leaves awl shaped, overlapping in whorls of three, curved, linear, sharply, pointed, flat and bluish green above and curved beneath. Flowers monoeocious or dioecious. Fruit blue black berry.

Fl. June-July; Fr. Aug-Oct. of the second year

Distribution: Lolab Valley, Dachigam, Keran

Ethnobotanical importance: Wood used as fuel. The smoke from the green wood is known as powerful emetic, producing long vomiting.

Lonicera quinquelocularus

Vernacular/Common/Local name: Tul.

English name: White mulberry.

Large deciduous tree; bark pale brown or whitish. Leaves ovate or broadly lanceolate. Flowers white. Berries 3 in. long, ovoid red.

Fl. April-May; Fr. Nov-Dec.

Distribution: Gulmarg, Pahelgam.

Ethnobotanical importance: Seeds given to horse for severe abdominal pain.

Morus alba

Vernacular/Local name: Tul.

English name: White mulberry.

Large deciduous tree; bark dark brown. Leaves broadly ovate, long pointed. Flowers greenish. Fruit purple.

Fl. April; Fr. May-June

Distribution: Lolab valley, Kralpora forests, also cultivated in valley.

Ethnobotanical importance: Wood is used for sport goods, building construction, agricultural implements, and furniture. Leaves are used as fodder for cattle; mainly used for rearing silk worms. The ripe fruits are eaten and are considered to increase blood contents. The bark is considered purgative and anthelmintic.
**Parrotiopsis jacquemontiana** (Dcne), Rehder. **Hamamillaceae**

*Parrotia jacquemontiana* Dcne.

Vernacular/Local name: Pohu, sha, pishor.

Deciduous small tree; bark silvery grey. Young shoots, petioles and stipules stellary hairy. Leaves crenate, serrate, suborbicular.

Flowers greenish.

Distribution: Jehilum Valley, Lider valley, Gulmarg, Kralpora forests.

Ethnobotanical importance: Wood is used for construction, sport goods and boxes. An ointment prepared from leaf bud balsam is used for curing cold. Resin obtained from buds is used as salve and to promote hair growth.

**Pistacia integerrima** Stewart. **(Anacardiaceae)**

*Pistacia khinjuk* Stock.

Vernacular/Local name: Kakra, kakri, kangar.

Medium sized deciduous tree; bark dark grey or blackish, rough with shallow cracks. Leaves pari or impari-pinnate. Flowers reddish.

Distribution: Jehilum, Lolab valley, Sindh valley.

Ethnobotanical importance: Galls found on the plant are useful in dysentery, asthma and respiratory troubles.

**Platanus orientalis** Linn. **(Platanaceae)**

*Platanus ciliata* Wall. **(Salicaceae)**

Vernacular/Local name: Boin, chinar, buna.

English name: Orientale plane.

Large deciduous tree; with spreading branches; bark slightly white in old stem. Leaves palmately lobed and nervured. Flowers greenish brown in globose pendulous heads.

Fl. and Fr. March-April; Fr. Sept.-Oct.

Distribution: Dachigam, Lolab valley, also other parts of the valley.

Ethnobotanical importance: Wood is used for building construction, sports goods, and boxes. Leaves used as fodder for cattle. Decoction of bark acts as stimulant and purified of the blood.

**Populus nigra** Linn. **(Salicaceae)**

*Populus ciliata* Wall. **(Salicaceae)**

Vernacular/Local name: Panjeeb/Parim phras.

English name: Himalayan poplar.

Large deciduous tree; bark brown, vertically deep-fissured, smooth on young trees. Leaves alternate broadly acute, cordate. Capsule ovoid, 0.8-1 cm, long. Seeds very minute.

Fl. and Fr. March-May

Distribution: Jehilum, Lolab valley, Sindh valley.

Ethnobotanical importance: Wood is used for building construction, sports goods, and boxes. Leaves used as fodder for cattle. Decoction of bark acts as stimulant and purified of the blood.

**Picea smithiana** (Wall) Boiss. **(Pinaceae)**

*Picea morinda* Link.

Large evergreen tree with drooping branches; bark reddish-white. Flowers in bundles of 3, bright green. Cones solitary or 2-5 together. Scales woody with pointed or recurved tips. Leaves needle like single, spirally arranged around the branches.

Fl. April; Fr. Sept-Oct next year.

Ethnobotanical importance: Wood is resinous and heavy. It is used in buildings, huts, for making of boxes and also used as firewood. Oleoresin is applied on cracked heals. The yellow dye made from decoction of its bark is used to dye wool. The leaves when ground with soil (peeli mitti) form a paste, which is applied to treat internal injuries of cattle.

**Prunus armeniaca** Linn. **(Rosaceae)**

*Prunus cerasus* Wall. **(Rosaceae)**

Vernacular/Local name: Tser, khubani, zardaula.

English name: Apricot.
Small deciduous tree; leaves broad-ovate; flowers pinkish or white; fruit smooth yellow about 1 in long; stone smooth.

**Prunus cerasus Linn.** *(Rosaceae)*

Vernacular/Common/Local name: Aulch

English name: Sour cherry.

Deciduous tree. Leaves 2-3, ovate, elliptic, abruptly acuminate, crenate, serrate. Flowers white, on long slender peduncles. Fruit drupe, globose, smooth shining.

**Prunus cerasifera Ehrh.** *(Rosaceae)*

Vernacular/Local name: Gurdol, ash-aulch.

English name: Myroblan plum.

Small deciduous tree; bark dark grey. Leaves purple, more or less rounded. Flower pink-white. Fruit red or yellow coloured.

**Prunus communis Linn.** *(Rosaceae)*

Vernacular/Local name: Aar

English name: Common plum

Deciduous tree. Leaves 3-4 in. long, ovate-lanceolate, serrate. Flowers white or pink, on long cylindrical peduncles. Drupe smooth, globose or oblong.

**Pyrus communis Linn.** *(Rosaceae)*

Vernacular/Local name: Tang, farash tang.

English name: Common plum.

Deciduous tree; bark dark grey. Leaves variable in size, oblong or ovate, acute, entire or slightly crenulate. Flowers white. Pome pyriform or sub-globose.

**Prunus cana Wall ex Royle** *(Rosaceae)*

Vernacular/Common/Local name: Wotil, zomb, zombchule.

Ethnobotanical importance: Seeds are used in respiration, digestion and some of well being.

**Prunus cornuta (Wall ex Royle) Steud.** *(Rosaceae)*

**Prunus Padus Buch-Ham.** *(Rosaceae)*

Cerasus cornuta Wall ex Royle

Vernacular/Common/Local name: Wotil, zomb, zombchule.

English name: Bird cherry.

Deciduous tree; bark rough brown or blackish. Leaves oblong, lanceolate or ovate, acuminate. Flowers white in racemes. Fruit blackish red.

**Quercus dilata Lindl.** *(Fagaceae)*

Quercus flobribunda Rehder.

Vernacular/Common/Local name: Oak, tahal.

English name: Gun oak, Moru oak.

Large shade-enduring tree, almost evergreen; bark dark grey or black peel off in longitudinal scales. Leaves oblong-lanceolate, acuminate, entire, coriaceous. Acorn solitary.

**Quercus flobribunda Rehder.** *(Fagaceae)*

Quercus rober Linn. *(Fagaceae)*

Vernacular/Common/Local name: Tahal

Tree with a massive trunk and thick, wide-spreadding much divided twisted branches; bark grey, deeply furrowed. Leaves numerous, alternate, spreading, shortly stalked.

**Quercus variolosa** *(Fagaceae)*

Vernacular/Common/Local name: Moni tang.

Moderate deciduous tree; bark rough, dark brown and white-floccose young twigs. Leaves simple, lobulate and serrate; white tomentose beneath. Flowers pinkish white. Fruit globose orange yellow, spackled with dots.

**Pyrus lanata D. Don.** *(Rosaceae)*

Pyrus aria Ehrth.

Vernacular/Common/Local name: Gurdol, ash-aulch.

Ethnobotanical importance: woods used for axe handles, and as fuel. The oil from the kernels is good substitute for oil of bitter almond. Smaller branches crushed and soaked in water, taken internally to stop abortion.

**Quercus rober Linn.** *(Fagaceae)*

Vernacular/Common/Local name: Tahal

Tree with a massive trunk and thick, wide-spreadding much divided twisted branches; bark grey, deeply furrowed. Leaves numerous, alternate, spreading, shortly stalked.
Thorny deciduous tree; bark thick brown, longitudinally furrowed. Leaves imparpinnate; leaflets 7-23. Flowers white.

*Juniperus* (Pinaceae)

English name: Brown oak of Himalaya

Large evergreen tree; bark dark grey to blackish, rough, with shallow cracks, exfoliating in irregular woody scales. Leaves elliptic-oblong, entire or spinous toothed. Acorn solitary.

Fl. May-June; Fr. Aug.-Sept.

Distribution: Sindh Valley, Pirpanjal range, Khillenmerg

Ethnobotanical importance: The dried leaves and fruits are crushed for applying in wounds to hasten the process of healing.

*Rhododendron campanulatum* D.Don. (Ericaceae)

Vernacular/Common/local name: Panda nast, gagger, vurmi, nichnai.

Moderate-sized evergreen tree; bark grey. Leaves elliptic-oblong, rounded at both ends. Flowers large and showy; whitish-pink purple or lilac. Capsules cylindrical.

Fl. May-June; Fr. Oct.-Nov.

Distribution: - Sindh Valley, Pirpanjal range, Khillenmerg

Ethnobotanical importance: Wood provides excellent fuel, but the smoke is acrid and irritant. Tea prepared from leaves is used as cough expectorant. Leaves also burnt along with the smoke to cure coughs.

*Rhus punjabensis* Stewart, ex Brandis (Anacardiaceae)

Medium sized tree; bark dark brown or blackish, rough, exfoliating in rounded scales. Leaves pinnate. Flowers greenish yellow, fruit drupe.

Fl. March-April; Fr. Sept.-Oct.

Distribution: - Kamal forests, Kamraj, Kishangana valley.

Ethnobotanical importance: Wood used for construction. The dried leaves and fruits are used as fodder for cattle. The infusion of leaves is used in digestive disorders.

*Salix alba* Linn. (Salicaceae)

Vernacular/Local name: Kashir vir.

English name: White willow.

Small deciduous tree; bark grey or yellow furrowed; young shoots and buds white and sticky. Leaves numerous, alternate, stipules small, lanceolate, erect. Flower greenish.

Fl. and fr. Apr-May

Distribution: Srinagar, Kamraj

Ethnobotanical importance: Wood used for building construction and cricket bates. Used in case of diarrhoea and dysentery. Bark is used for intermittent vomiting; branches are used to clean teeth.

*Salix babylonica* Linn. (Salicaceae)

Vernacular/Local name: Bot-Vir.

English name: Weeping willow.

Small to moderate sized tree. Leaves linear-lanceolate. Flowers in short, terminal catkins; capsule narrow conic, glabrous.

Fl. and fr. March-Apr.

Distribution: - Lolab valley

Ethnobotanical importance: Leaves and bark tonic, astringent used in intermittent fevers.

*Salix discalataus* Aud. (Salicaceae)

*Salix disperma* Roxb.

Vernacular/Local name: Guir, Jangli bain

Small tree, youngest shoots and under side of leaves glossy with grey silky pubescence. Leaves lanceolate or ovate-lanceolate, smooth, not rugose. Flowers appear before leaves. Catkins densely sticky.

Fl. and fr. Apr-May

Distribution: - Srinagar, Kamraj, Sindh valley.

Ethnobotanical importance: Wood used for construction. Leaves are used as fodder for cattle.

*Staphylea emodi* Wall ex Brandis. (Hipocastanaceae)

Vernacular/Local name: Chal-chitter, Chitr, kurkni.

English name: Snake stick.

Deciduous small tree; bark fairly smooth, pale grey. Leaves elliptic-oblong, rounded at both ends. Flowers before leaves.

Fl. April-May; Fr. June-Aug.

Distribution: Dachigam forests

Ethnobotanical importance: Wood used in agriculture implements, tool handles and sports goods. Branches are used to clear teeth. Leaves are used ad fodder for cattle. The infusion of leaves is used in digestive disorders.

*Taxus wallichiana* Zucc. (Taxaceae)

*Taxus bacata* Linn.

Vernacular/Local name: Poshtul, birmi.

Evergreen tree with horizontal branches; bark thin smooth, reddish-grey. Leaves flattened, linear, distichous, dark green and shining above, pale or rusty below. Male flowers in solitary, axillary, subglobe catkins. Fruit drupe, bright red seeds in pods.

Fl. April-May; Fr. Sep-Oct

Distribution: Dachigam, Lolab, (almost in all parts of valley).

Ethnobotanical importance: Wood used in agriculture implements, tool handles and sports goods. Branches are used to clear teeth. Leaves are used ad fodder for cattle. The infusion of leaves is used in digestive disorders.

*Robinia pseudoacacia* Linn. (Papilionaceae)

Vernacular/Common/Local name: Kikur

English name: Black locust.

Thorny deciduous tree; bark thick brown, longitudinally furrowed. Leaves imparpinnate; leaflets 7-23. Flower white.
when ripen.
Fl. Mar-Apr; Fr. Sept.-Nov.
Distribution: Jehlum, Lolab valley; Gurais
Ethnobotanical importance: Wood is used for cabinet work and other fancy articles, such as handles of knives. It is also used for making ploughs. The tincture prepared from the young shoots is used to control headache, giddiness, diarrhoea and biliousness.

**Ulmus wallichiana** Planch.  
(Ulmaeaceae)
Vernacular/Local name: Brari, breri, amroi.
English name: Elm.
Large deciduous tree; bark dark brown, rough with rather deep and regular vertical fissures. Leaves elliptic or obovate, acuminate. Flowers red-brown, ripe samara 1-1.5 cm in diameter.
Fl. March-April; Fr. May-June.
Distribution: Lolab valley, Gulmarg, Aachigam, Kamraj
Ethnobotanical importance: Wood is used to make agricultural implements. Young shoots of the plant were used to make strong ropes; and ashes of burnt twigs formed a dye and also fire wood. Bark is used to cure toothache.

**Ulmus villosa** Brandis.  
(Ulmaeaceae)
*Ulmus laevigata* Royle.
Vernacular/Local name: Bren.
English name: Elm.
Deciduous tree with drooping branches; bark corky brown thick. Leaves ovate-oblong, lanceolate. Flowers chocolate brown Samara (unripe) densely villous.
Fl. Feb-March; Fr. June-July
Distribution: Lolab valley, Sindh valley, Gulmarg, Kamraj
Ethnobotanical importance: Wood is used to make agricultural implements. Young shoots of the plant were used to make strong ropes; and ashes of burnt twigs formed a dye and also fire wood. Bark is used to cure toothache.

**Zizyphus mauritiana** Lamk.  
(Rhamnaceae)
*Zizyphus jujuba* Gard.
Vernacular/local name: Brai
Small sub-deciduous tree; bark blackish to grey or brown, rough, regular and deeply furrowed. Leaves, oblong or ovate. Flowers greenish.
Fl. May-June; Fr. Nov-Feb.
Distribution: Dachigam, Lolab valley, Gulmarg, Pahlgam.
Ethnobotanical importance: Wood used for axe and hoe handles. Fruits are eaten. The seeds are nutritious from fruits with water and other plants-sharbat is given to women after delivery. Decoction of stem bark is used to check diarrhoea.

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