Andaman and Nicobar Islands, a landmass of 572 islands, isles, rocks and reefs, located about 1200 km away from the mainland India is located between the latitude of 6-14° N and longitude of 92-14° E. This archipelago possesses rich biodiversity under a typical tropical environment. The total land area encompasses 8249 sq km. The islands are blessed with about 3100 mm rainfall distributed over 8 months starting from May-December owing to the influence of Southwest and Northeast monsoon. The total forest area of the islands is about 84.3% and in general the islands are lush green due to luxuriant vegetation. The vegetation pattern includes coastal littoral, mangroves, island deciduous and evergreen forests. There are 2500 angiospermic species of which 223 are endemic. The human population is increasing at an alarming rate and has already crossed islands carrying capacity. The traditional knowledge is fast diminishing owing to recent modernization and overall development of the islands. At this point it was felt essential to survey for collection and collation of folk knowledge in relation to medicinal plants used by the people residing here for generations.

Andaman and Nicobar Islands are also considered to be a hot spot of biodiversity of medicinal plants. Out of 2500 angiospermic species distributed across the island territory, the aboriginals, viz. Nicobarese, Shompen, Jarawas, Sentinels, Ongese and Great Andamanese use 52 species as medicaments. The Central Agricultural Research Institute, Botanical Survey of India and Society of A & N Ecology (SANE) have mounted efforts towards compilation, collection and collation of information about medicinal plants available in these islands. Several studies were conducted and medicinal plants of these islands were documented. The medicinal plants commonly used by the locals and tribes, those found in the mangrove areas, medicinal plants exclusively used by tribals, medicinal plant suited for homestead farming, etc. have been identified. The family consisting of largest number of endemic species is Rubiaceae with 41 species followed by Euphorbiaceae and Orchidaceae with 34 and 24 taxa, respectively. Ixora of Rubiaceae is the largest genus with 12 species endemic to the islands. Out of 301 taxa, 251 are species, 7 are subspecies and 43 are varieties. Further, 62 species, 2 subspecies and 9 varieties are found to be endemic to both Andaman and Nicobar Islands, 135 species, 5 subspecies and 2 varieties are endemic to Andaman only and 54 species and 12 varieties are endemic to Nicobars only.

Methodology
Recurrent survey was made in South, Middle, North and Little Andaman and Nicobar Islands to document available folk knowledge about the herbal formulations being used by tribals including aboriginals. The plants were identified in Botanical Survey of India, Port Blair and herbaria were kept in

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the laboratory. Information about the medicinal uses of those plants was collected from the tribal people inhabiting these islands. Some important species are described below with botanical description, their uses as gleaned from folk knowledge in cure of diverse ailments of the islanders.

Results

1. *Alstonia macrophylla* Wall. ex G. Don (Apocynaceae); Local name: Chatium, Chuharoi (Nicobari) (Fig. 1)

Salient features: A tall tree; leaves digitately compound, alternate, entire, attached at the nodal region of the stem, margin slightly curved, tetranately whorled; flowers in polychasial, corymbose cymes; sepals connate, lobes short, usually obtuse; petals 5, connate in a salver shaped corolla; tubes cylindrical; stamen adnate near apex of tube; anthers subacute; carpels 2, distinct; ovules numerous, seriate. Fruits slender follicles; seeds oblong or linear flattened; flowers in February; found in sea level at Katchal, North Nicobar, Car Nicobar and in North, Middle (Baratang) and South Andaman.

Uses: In curing gastric disorder, malarial fever, swelling, bone fracture. The leaves as well as stem bark are being used to treat various human ailments. The stem bark and leaf are said to possess emmenagogne, anti-choleric and vulnerary properties. It can be administered either as decoction, infusion or tincture. Decoctions of leaves and stem bark were widely used among the tribal population of Bay Islands to treat stomachache, skin diseases and urinary infections. The leaves greased with hot coconut oil are applied to sprains, bruises and dislocated joints as a poultice. Leaf decoction is also used to induce sleep and relief from tension.

2. *Amomum fenzlii* Kurz. (Zingiberaceae); Local name: Jungli adhrak (Fig. 8)

Salient features: Erect perennial herb, up to 6-7 m, sparingly form rhizome, basal spathe 10-20 cm long, pseudostem elongated and leafy; leaves oblong-lanceolate, spathe pink with white frilly margin; flowers in dense spikes, direct from rootstock, imbricate bracts; ovules 3 celled, superposed; fruits indehiscent or bursting irregularly, sometimes beaked or winged or echinate; seeds globose or truncate, found in moist forests of Great Nicobar on shaded and partially open rocky clay loam.

Uses: Masticatory, useful in malarial fever, and gastrointestinal disorders. Also bee repellent due to its tranquilizing property. Roots and flowers juice are used in fever and stomach disorder.

3. *Costus speciosus* (Cone.) J. E. Smith, (Costaceae); Local name: Keokanda (Fig. 7)

Salient features: A succulent perennial herb, up to 2.7 m high with erect stems; leaves petiolated, simple, elliptic, spirally / alternately arranged, dark green; flowers dense spikes, many; tubular calyx, corolla funnel shaped, lips obovate, fruits capsule, globose trigonus, red in colour; seeds black with white fleshy aril flowering in July to October and fruits in August-September, widely distributed in A&N Islands.

Uses: To cure stomach disorders and headache. The rhizomes cooked and are eaten accredited with purgative and tonic properties. The roots are used as a tonic and eaten with sugar as anthelmintic. The crushed stem sap is given to treat diarrhoea and eye trouble. Leaf infusion or decoction is utilized as a sudorific or in a bath for patients with high fever. Fresh rhizome juice is considered purgative and is used in snakebites, headache and earache by the tribal people.

4. *Dioscorea vexans* Prain & Burk (Dioscoreaceae); Local name: Getti (Fig. 4)

Salient features: A twining climber with yellowish green stem having a circumference of 1.2-1.5 cm; leaves coriaceous, ovate, alternate oppositely paired; flowers yellowish, male flowers packed on spikes, arranged on special leafless branches, female flowers greenish yellow, solitary or paired, decurved; fruits 3-cornered/ triangular, laterally flattened, almost winged; capsules green, contains 6 brown walled round seeds; flowering and fruiting observed in October to March, found on the edges of forests in South Andaman.

Uses: The tubers are known to have antifertility activity. These are used for arthritis, asthma, eczema, chronic cough, diarrhoea and diabetes and regulate metabolism.

5. *Hernandia ovigera* Linn. (Hernandiaceae); Local name: Jack in the box plant (Fig. 6)

Salient features: A moderate tree densely covered with minute red hairs; leaves alternate, ovate, acuminate and entire; flowers dioecious, male flowers clustered, sessile; female flowers sessile in short spikes; fruits round, distributed in littoral forest, common along seashores of the islands, growing mostly at water edge.
Uses: In relieving headache and in treating tumour, epilepsy, fits. It is reported to be anti-inflammatory. The leaves are made into paste and applied on the forehead to get relieve from headache. The seeds cause dizziness. The root is chewed as an instant remedy against eating poisonous crabs and fish. The barks, seeds and young leaves are used as purgative. The leaves are crushed into a fine paste, which is subsequently applied on cuts and wounds. The juice of the bark and leaves possess depilatory properties.

6. *Kaempferia siphonantha* King ex. Baker; (Zingiberaceae); Local name: Cekur
Salient features: A stemless annual, up to 20 cm in height, with slender root fibres; leaves 3-4 oblique; solitary flower at the end of long slender spikes, white flowers. Found in Little Andaman and some places of south Andaman.
Uses: Decoction of the tuber is used to cure fever and stomach pain.

7. *Mallotus phillipensis* (Lam.) Muell.-Arg.; (Euphorbiaceae); Local name: Monkey face tree (Fig. 3)
Salient features: A small tree with dark-coloured bark; leaves 11-23 cm long, ovate-lanceolate, acuminate, 3-nerved at the base, dark green; petioles up to 8 cm long, slender and thickened at the apex; flowers small, spikes; fruits covered with a red powder, found in the inland forest of Chidiyatapu, Baratang, Jarawa creek in Middle Andaman, Havelock, Long Island and Little Andaman.
Uses: The crude powder from the exterior of the fruits is found to be anthelmintic. It destroys threadworm, hookworm and roundworm. The powdery coat of the fruit mixed with water and is taken for one week to get relieve from colic pain and to expel bile. Leaves and roots are useful in the treatment of skin diseases. The decoction of the bark is used for abdominal pain. Paste prepared from ground seeds is applied to wounds and cuts.

8. *Phyllanthus andamanicus* Balakr. & Nair; (Euphorbiaceae); local name: Dadaura (Fig. 2)
Salient features: A small shrubby tree (2-3m tall); leaves alternate, distichous, stipules narrow; flowers small, monecious, axillary on old nodes; males usually many fascicled, subsessile, rarely few or solitary; female in the same, longer pedicelled, solitary or few and perianth free very shortly connate, imbricate and more or less distinctly 2-seriate; anthers oblong or didymous, reniform, cells parallel or diverging dehiscence extrorsely, vertical or transverse; carpels connate, 3-celled, rarely 4-more-celled ovary; ovules two, or connate, usually bifid; dilated fruits & 4-8 celled berry or a drupe with a 3-4 celled bony endocarp; seeds trigonous; cotyledons flat or flexuous, found in Inland hill forests, rocky litterite soil in North Andaman.
Uses: Antidiuretic properties are well recognized among the tribal people inhabiting Andaman and Nicobar Islands. Leaves are used for the diuretic problem. The decoction of leaves is generally used to cure this ailment.

9. *Semecarpus kurzii* Engler; (Anacardeaceae); local name: Bara Bhilawa (Fig. 5)
Salient features: A tree with light grey smooth bark, having black acrid juice; leaves, alternate, glabrous, oblong lanceolate, shortly acuminate; flowers small, polygamous or dioecious; fruits drupe, oblong or subglobose, oblique; pericarp resinous acrid; seeds pendulous, fleshy with convex cotyledons, found throughout forest in the Islands.
Uses: Leaf juice is applied on the infected area for treating wounds (anthelmintic). The leaf paste is applied in the forehead for the treatment of malarial fever. Resin is used for curing allergic infections on the skin. Eruptions and blisters develop on the skin upon touching the tree.

Discussion
Of 156 plants reported to have medicinal property, 58 are found to be multipurpose ones, used for more than one ailment. The most promising medicinal plants having multipurpose function are *Calotropis gigantea*, *Cyanodon dactylon*, *Centella asiatica*, *Jatropha gossypifolia*, *Tamarindus indica*, etc. Maximum plants are available for gastrointestinal problems, skin infection, fever, chest and joint pain. The method of usage generally varied raw extract to decoction. For skin disease, generally the plant part juice is applied. Fractured bones and sprain are treated by making a paste of the plant part either as such or mixed with egg or pig fat and then applied and bandaged tightly. In some cases, combinations of plant parts are used. About 45 species are found to be potential medicinal plants, which are being used by the aboriginals and by the people of diverse ethnic groups (Fig. 9). Use of many plants in healthcare system of aboriginals/tribals is exciting and need to be protected and documented. Documented information may help enable in carrying
out detailed pharmacological studies for isolation, purification and characterization of bioactive compounds and in discovery of new drugs for large-scale utilization. Preliminary screening of bioactive compounds from a few medicinal plants of these islands prospects a great potential in drug development. Extensive research work in this endeavor is expected to benefit if sustainable efforts are mounted in systematic way.

References
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