

AN ETHNOBOTANICAL STUDY OF THE KODAVAS AND OTHER
TRIBES OF KODAGU DISTRICT, KARNATAKA

INDIRA KALYANASUNDARAM

Centre for Advanced Study in Botany, University of Madras, Madras

A B S T R A C T

The Kodavas are the original inhabitants of Kodagu at present a district of Karnataka State – located in the Western Ghats. Although Kodavas cannot be classified as tribals under the present conditions, they form a minor ethnic group that has apparently been living amidst the forests of this region over the last few thousand years. Their knowledge of the local plants is extensive, and some of it is recorded here, with a listing of 240 species. These include some 105 medicinal plants, 65 food plants, about 60 timber-yielding plants ; some 40 species used in different ways in agriculture and animal husbandry; some 80 species having agricultural and domestic uses, including fibre and fuel plants, those used in cleaning and toiletry, etc; there is some overlapping of usages. Although many of the plants are well-known, some of the usages are not widely known. Some of the plants merit further investigation and development.

INTRODUCTION

This study was taken up as a corollary to a search for plants or plant products used in foodgrain preservation by the people of Kodagu district, Karnataka, undertaken during November 1988. It came to light during this search that these people did not have much use for plants in grain preservation, as the climate during harvest is such that precludes the need for special protective measures. On the other hand their knowledge of various other uses for plants in their surroundings, especially in medicine, was considerable. However, with the advent of hospitals, the usage of these plants has fallen, and the knowledge remains only with a few in the over-fifty age group. Further, with the continued clearing of woodlands for coffee cultivation, some of these plants are becoming very rare-almost extinct and hence there is a need to save them and to record the possible uses that all these plants may be put to. With these ideas in mind, an ethno-botanical study was planned.

LOCATION

Kodagu, or Coorg as it was called by the British, is now a small district of the state of Karnataka, but it was a separate state of the 'C' category before the reorganization of states in 1956. Located on the Western Ghats (long. 75.22' to 76.12'; lat. 11.56' to 12.50'), the region had been covered with dense forests, the valleys alone having been cleared for dwelling and rice cultivation, by the people of the land, the Kodavas, who practised settled rather than shifting cultivation from the beginning. The altitudes of the forest areas vary from about 700 to 1800 m above m.s.l. The Eastern and Northern regions of the district are of lower altitudes, and hence classified as lowlands, while the Western regions being at higher altitudes are classified as highlands. The Eastern side being the leeward side, rainfall (80 to 200 cm. p.a.) also is lower here than on the Western windward side (400-600). Accordingly the forests of the lowlands are mainly of the deciduous or semi-deciduous type, and the tropical evergreen

forests occur on the highlands (Arora, 1960). Rice had long been the staple food and the only crop cultivated by the people of this land, who had depended on the forests for the rest of their requirements including meat, being good hunters. There were certain rules for the utilization of forest produce, however, by an unwritten law of the Kodavas, one large forest area in every village, usually adjacent to the temple of the village deity, was reserved as God's forest, from which no man was permitted to take anything, and it was left undisturbed. With the advent of coffee cultivation, and sale of timber as a means of living, the forest cover has been greatly reduced in Kodagu.

ETHNOLOGY

The Kodavas are regarded as the original inhabitants of this place. Anthropologically however, both with regard to physiognomy, dress and social customs, they resemble some of the North Indian ethnic groups and are said to belong to an Aryan stock, although their origins and time of migration are obscure. They call themselves Kshatriyas, and indeed their social customs are a quaint blend of tribal and Vedic Kshatriyan characters. Their good looks and martial bearing have been commented upon by several British authors. The men are able warriors, and even now many of them hold high ranks in the Indian army. The level of literacy is quite high among both men and women, but the women generally prefer to stay at and look after the home, rather than pursue a career. The position of women is quite good, there is no dowry system, and the re-marriage of widows, as well as of women separated from their husbands, is common.

Although the Kodavas have now become a part of the mainstream of Hindu society and believe in the Gods of the Hindu pantheon, their religion in its original form has none of the trappings of present day Hinduism. In village temples one may find the worship of various local deities coupled with a kind of Shamanism, but this is definitely a Keralite influence. In their original state, the Kodavas emerge as tribals, being worshippers of the Ancestor Spirit and of Nature. Even their deep reverence for the river Cauvery, whom they regard as their mother,

comes from their nature-worshipping instinct. Their religious practices involve very little ritual, as a *Dharmic* or righteous way of life is apparently more important to them than the observance of rituals.

In the disciplined hierarchical system of Kodava Society, a few *Okkas*-which are a close-knit, exogamous joint family unit - within the radius of 5-10 kilometers from an *Ooru*, and a few *Oorus* together form a *Nadu*. There is a headman at every level. There is good co-operation among the units that form these associations, and a general interest in the well-being of its members.

The language of the Kodavas is a Dravidian dialect and although it superficially appears like a mixture of Tamil, Malayalam and Kannada, phonetically it has some distinctive features of its own. Since it lacks a script, the Kodavas have preserved their culture mainly through a distinctive oral tradition. They have special songs to be sung during weddings, during the harvest festival and at funerals. These are sung by a group of men, usually four in number, to the beat of drums carried by them. On this count it may be taken that the Kodavas were illiterate until some 250 or 300 years ago, when the reading and writing of Kannada was initiated following the conquest of Kodagu by some Lingayat chieftains who ruled Kodagu from the mid-seventeenth to the mid-nineteenth century, when it was annexed by the British.

OTHER TRIBES

There are several other communities inhabiting this land. These include the Ammakodavas who call themselves brahmins but are not recognised such by the Kodavas. The Kodavas have imported Brahmins from the West Coast-South Canara and Kerala to conduct the rites in their temples. There are several scheduled tribes such as Poleyas, Yerava, Kuruba etc. Of these, some groups of Poleyas are apparently indigenous, and they speak the Kodava language. The Yeravas are immigrants from Kerala and the Kurubas, from Mysore; and they speak dialects of Malayalam and Kannada respectively. The Yeravas and Kurubas are more negroid than are the Poleyas.

CULTURAL INFLUENCES

The single strong influence over the culture of Kodavas is that of Kerala. It appears that, being a Kshatriya tribe given to war but cultivating land during peace time, their skills were limited to warfare and agriculture. Therefore they must have had to depend on outsiders for other requirements; this they seem to have obtained largely from Malabar, with which they had established some trade through a barter system. The traditional houses and temples of the Kodavas as seen now, are of Keralite architecture. Even their temple rituals follow those of Kerala. Therefore, it is difficult to say how much of their knowledge of plants is indigenous, and how much has been acquired through their association with Kerala, especially in the realm of folk medicine. All the same this knowledge is worth recording.

Further details of Kodagu and its people may be found in the excellent work of Muthanna (1953).

ETHNOBOTANY

METHODS

Initially by holding conversations with groups of people, the names of some individuals, knowledgeable on diverse uses of plants, were gathered. Subsequently these individuals were interviewed in their homes, and information was gathered by means of a questionnaire. The author's knowledge of the local language was of great help in this. Details of the plants and the details of usage were noted down by using specific codes. The botanical names were ascertained through familiarity with the plants and sometimes through the personnel of the Forest Department. Wherever possible, specimens of the plants were gathered especially when the botanical name was not known for herbarium preparation and subsequent identification.

Identification was based on Gamble (1953), Mathew (1981), and Saldanha (1984); and in some cases through the help of specialists. Help rendered by Prof.E.Govindarajulu, Emeritus Scientist, University of Madras; Prof.K.Rajasekaran, erstwhile Head of the Botany Department, Presidency College,

and his student Mr. P. Santhan in this regard is gratefully acknowledged. For updating the nomenclature, we have relied mainly on the BSI publication on Flora of Tamil Nadu (Nair & Henry; 1988; Henry *et al.* 1987, 1989).

Information already recorded on the plants listed was obtained from the publications of George Watt (1889), Kirtikar & Basu (1978) and CSIR (Anonymous, 1986b), apart from scattered papers on Ethnobotany.

RESULTS

The information thus gathered, was eventually classified by separating the plants into :-

I : Medicinal plants (Ethnomedicine).

II : Edible plants.

III : Miscellaneous uses, including.

III/1 : Timber trees.

III/2 : Plants used in agriculture and animal husbandry, such as :-

2a : Hedge or shade plants.

2b : Plants used in the care of animals.

2c : Those used as preservatives, repellants or poisons.

III/3 : Plants having household as well as agricultural uses, including those yielding.

3a : Fibres.

3b : Fuel.

3c : Articles of domestic use.

3d : Materials for cleaning and toiletry.

3e : Plants used in rituals, during worship or at festivals.

III/4 : Plants used by the lower tribals for different purposes.

The last-named list was far from complete, as some of these tribals are very secretive about their knowledge of plants.

Cultivated plants are not generally included

except in cases where they have some special usage, especially in medicine, usually as additives. The totality of useful plants collected so far, numbering 241, are listed in the Table in the alphabetical order of their botanical names, indicating their family, local name, time of flowering where known, the usage according to the Roman and Arabic numerals indicated in the previous paragraph.

Table : List of plants used by the natives of Kodagu District, Karnataka

(Note : Cultivated plants are included only if they have medicinal or some other special usage)

A Sl. No.	B Botanical name	C Family	D** Months of flowering/ fruiting	E Local name	F Nature of use
1.	<i>Acacia concinna</i> DC.	Mimosaceae (=Leguminosae)		Pulungode	I, III/2b, III/2c, III/3d
2.	<i>A. pennata</i> (L.) Willd.	Mimosaceae		Mooduseege	III/3d
3.	<i>Acorus calamus</i> L.	Araceae		Baemb	I
4.	<i>Acrocarpus fraxinifolius</i> Wight & Arn.	Caesalpiniaceae (=Leguminosae)		Balanji	III/2a
5.	<i>Actinodaphne salicina</i> Bedd.	Lauraceae		Panethali	III/3d
6.	<i>Adenanthera pavonina</i> L.	Papilionaceae (=Leguminosae)		Gurugunji	III/1
7.	<i>Adina cordifolia</i> (Roxb.) Hook. ex Brandis	Rubiaceae		Arasinathega	III/1
8.	* <i>Agave americana</i> L.	Amaryllidaceae	(A-S)	Boothale	III/2a, 3a
9.	* <i>Ageratum conyzoides</i> L.	Asteraceae (=Compositae)	(M-O)	Parangi kale	I
10.	<i>Allium cepa</i> L.	Liliaceae		Eerulli	I
11.	<i>A. sativum</i> L.	Liliaceae		Bollulli	I, III/2c
12.	<i>Aloe barbadensis</i> Mill. (=A. vera L.)	Liliaceae		Lolisara	I, III/2c
13.	<i>Allophyllus serrulatus</i> Radlk.	Sapindaceae		Laavate-pannu	II
14.	* <i>Anogeissus latifolia</i> (Roxb. ex DC.) Wall. ex Guill. & Perv.	Combretaceae	(O-N)	Naayi bollandi/ dindal	I, III/1, 3b

Table Contd. :

A	B	C	D**	E	F
15.	<i>Antidesma menasu</i> Miq. ex Tul.	Euphorbiaceae		Naayi kutti panu	II
16.	* <i>Apama siliquosa</i> Lamk.	Aristolochiaceae	(A-M)	Chakraani	I
17.	<i>Aporosa lindleyana</i> Baill.	Euphorbiaceae		Aechi pannu	II
18.	* <i>Ardisia humilis</i> Vahl	Myrsinaceae	(A-M)	Bodde pannu	II
19.	* <i>Arenga wightii</i> Griff.	Arecaceae (=Palmae)	(M-A)	Netti paayi	III/3a
20.	* <i>Artemisia nilagirica</i> (Clarke) Pamp.	Asteraceae	(N-D)	Gaali maddu	I
21.	<i>Artocarpus heterophyllus</i> Lam.	Moraceae	(A-M)	Chakke	I, II, III/1, 3b, 3c
22.	<i>A. hirsutus</i> Lam.	Moraceae	(A-M)	Aajini chakke	II, III/1, 4
23.	<i>A. lakocha</i> Roxb.	Moraceae	(A-M)	Pulichakke	II
24.	* <i>Asparagus racemosus</i> Willd.	Liliaceae	(A-M)	Takki	I
25.	* <i>Asystasia lauriana</i> Dalz.	Acanthaceae	(M-O)	Maithale	I
26.	<i>Azadirachta indica</i> A. Juss.	Meliaceae	(M-O)	Bevin mara	I, III/2c
27.	<i>Bambusa arundinacea</i> (Retz.) Willd.	Poaceae	—	Balya punda	I, II, III/1, III/3a, 3c
28.	<i>B. vulgaris</i> Schrad.	Poaceae	—	Manja punda	III/1
29.	<i>Bischofia javanica</i> Bl.	Euphorbiaceae	—	Neeli mara	III/2a
30.	* <i>Blumea bifoliata</i> (L.) DC.	Asteraceae	(M-D)	—	I
31.	<i>Boerhavia diffusa</i> L.	Nyctaginaceae	—	Kommer baer	I
32.	<i>Bombax ceiba</i> L.	Bombacaceae	—	Booruga	III/3a
33.	* <i>Breynia rhamnoides</i> Muell.- Arg.	Euphorbiaceae	(A-M)	Pallithoppu	I, III/2c
34.	<i>Butea monosperma</i> (Lam.) Taubert	Papilionaceae	—	Muthuga	I
35.	* <i>Caesalpinia crista</i> L.	Caesalpiniaceae	(D-J)	Chitti	I, III/3c
36.	<i>C. mimosoides</i> Lam.	Caesalpiniaceae	(D-J)	Kenjige	I

Table Contd. :

A	B	C	D**	E	F
37.	<i>Calamus</i> sp.	Arecaceae	(M-A)	Thoora	III/3a
38.	<i>C. pseudotenius</i> Becc.	Arecaceae	(M-A)	Kiruthoora	III/3a
39.	<i>C. rotang</i> L.	Arecaceae	(M-A)	Pathoora	III/3a
40.	<i>C. thwaitesii</i> Becc.	Arecaceae	(M-A)	Thanduthoora	III/3a
41.	* <i>C. travancoricus</i> Bedd.	Arecaceae	(M-A)	Pandithoora	III/3a
42.	<i>Calycopteris floribunda</i> Lam.	Combretaceae	(A-M)	Injiri balli	III/3a,4
43.	<i>Canarium strictum</i> Roxb.	Burseraceae	—	Banda	I
44.	* <i>Canthium dicoccum</i> Gaertn.	Rubiaceae	(M-A)	Amme pannu	II
45.	<i>Careya arborea</i> Roxb.	Lecythidaceae	—	Kabba	I, III/1, 2b
46.	<i>Carica papaya</i> L.	Caricaceae	—	Pappayi	I
47.	* <i>Carissa gangetica</i> Stapf.	Apocynaceae	—	Kirukarmanji	II
48.	* <i>C. inermis</i> Vahl.	Apocynaceae	(M-A)	Karmanji pannu	I, II
49.	<i>Caryota urens</i> L.	Arecaceae	—	Pane	II, III/1, 3a
50.	* <i>Cassia occidentalis</i> L.	Caesalpinaceae	(M-D)	Konthe	I
51.	* <i>C. tora</i> L.	Caesalpinaceae	(S-O)	Thaathe	I, II
52.	<i>Cayratia carnosa</i> (Wall.) Gangnep.	Vitaceae	—	Balli puli	II
53.	<i>Ceiba pentandra</i> (L.) Gaertn.	Malvaceae		Boltha booruga	I, III/3a
54.	* <i>Centella asiatica</i> (L.) Urb.	Apiaceae (=Umbelliferae)	(M-O)	Baenore thoppu/ Elikemi	I
55.	<i>Centrantherum anthelminticum</i> Kuntze	Asteraceae	(N-D)	Karijeerige	I, III/2b
56.	<i>Chionanthus malaelengi</i> (Dennst.) P.S. Green	Oleaceae	(N-D)	Thadle	III/3b
57.	<i>Chrysophyllum roxburghii</i> G. Don	Sapotaceae		Paale	I, II
58.	<i>Chukrasia tabularis</i> A. Juss.	Meliaceae		Karadi	III/1

Table Contd. :

A	B	C	D**	E	F
59.	<i>Cinnamomum macrocarpum</i> Hook.f.	Lauraceae	(M-A)	Naru mara	II, III/2b
60.	<i>Citrus indica</i> L.	Rutaceae		Kaadu chorenge	I, III/2c
61.	<i>C. reticulata</i> Blanco. var. <i>kodakithuli</i>	Rutaceae		Kodangithuli	II
62.	<i>Clitoria ternatea</i> L.	Papilionaceae		Sanka pushpa	I
63.	<i>Coccinia cordifolia</i> Cogn.	Cucurbitaceae		Koyakke	I
64.	<i>Cocos nucifera</i> L.	Arecaceae		Thengu	I, III/3a, 3c
65.	<i>Coleus amboinicus</i> Lour. (? <i>Anisochilus</i> <i>carnosus</i> Wall.)	Lamiaceae (=Labiatae)		Dodpathre	I
66.	* <i>Corchorus depressus</i> (L.) Cochr.	Tiliaceae	(S-D)	Nanjina beeja	I, III/2b
67.	<i>Cordia macleodii</i> Hook f. & Thoms.	Boraginaceae		Haadaga	III/1
68.	<i>Cuminum cyminum</i> L.	Apiaceae		Jeerige	I
79.	<i>Curcuma domestica</i> Valeton.	Zingiberaceae		Manja	I
70.	<i>Cyclea arnottii</i> Miers C. Chr.	Menispermaceae	(M-D)	Paadaali/ Poonhe thoppu	I, II
71.	<i>Dalbergia latifolia</i> Roxb.	Papilionaceae		Booti	III/1
72.	<i>D. paniculata</i> Roxb.	Papilionaceae		Naayi booti	III/1
73.	<i>Datura metel</i> L.	Solanaceae	(M-D)	Kartha ummatha	I
74.	<i>Dendrocalamus brandisii</i> Kurz	Poaceae		Burma punda	III/1
75.	<i>D. strictus</i> (Roxb.) Nees	Poaceae		Cheriyā punda	III/1, 3a
76.	* <i>Dillenia pentagyna</i> Roxb.	Dilleniaceae	(M-A)	Ebrahim punne	III/1
77.	<i>Dioscorea bulbifera</i> L.	Dioscoreaceae	(A-S)	Naare kalanji	III/4
78.	<i>D. esculenta</i> Burkill. (= <i>D. edulis</i>)	Dioscoreaceae	(A-S)	Puthari kalanji	II, III/3e

Table Contd. :

A	B	C	D**	E	F
79.	<i>D. coscorea spicata</i> Roth	Dioscoreaceae	(A-S)	Akki kalanji	III/4
80.	<i>Diospyros buxifolia</i> (Blume) Hienn.	Ebenaceae		Chunde mara	III/1
81.	<i>D. melanoxylon</i> Roxb.	Ebenaceae		Kari mara	III/1
82.	<i>D. nilagirica</i> Bedd.	Ebenaceae		Kartha choote	I, III/1
83.	<i>Dipterocarpus indicus</i> Bedd.	Dipterocarpaceae		Kalpaine	III/1
84.	* <i>Drymaria cordata</i> (L.) Roemer ex Schultes	Caryophyllaceae	(M-O)	Pana thoppu	I, II
85.	<i>Duranta repens</i> L.	Verbenaceae		—	III/2a
86.	<i>Dysoxylum binectrifolium</i> Hook. f.	Meliaceae		Chondagil	III/1
87.	* <i>Eclipta prostrata</i> (L.) L.	Asteraceae	(M-O)	Kaiyandi karpa	I
88.	<i>Elaeagnus latifolia</i> L.	Elaeagnaceae	(S-O)	Tholyar pannu	II
89.	<i>Elaeocarpus glandulosus</i> Wall. ex Merrill.	Elaeocarpaceae		Koome pannu	II
90.	<i>E. munroii</i> (Wright) Mart.	Elaeocarpaceae	(A-M)	Idanji pannu	II
91.	<i>E. tuberculatus</i> Roxb.	Elaeocarpaceae	(M-A)	Kunge	II, III/1, 2a
92.	<i>Elaeodendron paniculatum</i> Wight & Arn.	Celastraceae		Povvoli	I, III/3b, 3c
93.	<i>Emblica officinalis</i> Gaertrn.	Euphorbiaceae	(O-N)	Nellige	I, II
94.	* <i>Emilia sonchifolia</i> DC.	Asteraceae	(M-O)		I
95.	* <i>Entada phaseoloides</i> Merrill.	Leguminosae		Chilky	III/3a, 3c
96.	* <i>Ervatamia heyneana</i> T. Cooke	Apocynaceae	(S-O)	Kokke kaayi	I
97.	<i>Erythrina variegata</i> L. (=E.indica)	Papilionaceae		Muruku	I, III/2a

Table Contd. :

A	B	C	D**	E	F
98.	<i>E. suberosa</i> Roxb.	Papilionaceae	—	Mullu muruku	III/2a
99.	* <i>Euphorbia hirta</i> L.	Euphorbiaceae	(M-D)	Kaakekaalu	I, III/2b
100.	* <i>E. rothiana</i> Spr.	Euphorbiaceae	(M-D)	Kirukaanda	I
101.	* <i>Evodea lunu-akenda</i> Merr.	Rutaceae	(A-M)	Chattuva mara	III/1
102.	* <i>Fagraea obovata</i> Wall.	Loganiaceae	(A-M)	Modakkai	I
103.	<i>Ficus benghalensis</i> L.	Moraceae		Aalu mara	III/3e
104.	<i>F. glomerata</i> Roxb.	Moraceae		Athi	I, II, III/2b
105.	* <i>F. hispida</i> L.f.	Moraceae		Paaruva mara	I, III/2b, 3d
106.	<i>F. lucescens</i> Blume	Moraceae	(S-O)	Thele Bairi	III/2b
107.	<i>F. nervosa</i> Roth	Moraceae		Kadapaara	III/1
108.	<i>F. religiosa</i> L.	Moraceae		Aalu mara	III/3e
109.	<i>Flacourtia indica</i> (N. Burman) Merrill	Flacourtiaceae	(J-A)	Kakkade	II, III/1
110.	<i>F. montana</i> Graham	Flacourtiaceae	(J-A)	Malekakkade	II
111.	<i>Fragaria nilgerrensis</i> Schlecht	Rosaceae		Jumma pannu	II
112.	* <i>Garcinia gummi-gutta</i> (L.) Robson	Clusiaceae (=Guttiferae)	(M-A)	Panapuli	I, II
113.	<i>G. indica</i> (Thouars.) Choisy	Clusiaceae	(M-A)	Punar puli	II
114.	<i>G. xanthochymus</i> Hook.ex Anders	Clusiaceae	(M-A)	Binakke pannu/ Nelamange	II
115.	* <i>Glochidion ellipticum</i> Wight	Euphorbiaceae	(M-A)	Neercheepe/ Neerkukku	III/3b
116.	* <i>Gloriosa superba</i> L.	Liliaceae	(A-S)	Thokpoo	I, III/3e
117.	* <i>Glycosmis pentaphylla</i> (Retz.) DC.	Rutaceae		Okkichalpe	I
118.	<i>G. mauritiana</i> (Lam.) Tanaka	Rutaceae	(D-J)	Kurumana pannu	I, II, III/3e
119.	* <i>Gmelina arborea</i> Roxb.	Verbenaceae		Kumbli	III/1, 2b, 4

Table Contd. :

A	B	C	D**	E	F
120.	<i>Gnetum scandens</i> Roxb.	Gnetaceae		Bothuballi/ Kaibuliballi	III/3e
121.	<i>Gomphrena globosa</i> L.	Amaranthaceae	(N-D)	Kondepoo	III/3e
122.	* <i>Grewia tiliaefolia</i> Vahl	Tiliaceae	(M-A)	Thadichi	II, III/1
123.	<i>Helicteres isora</i> L.	Sterculiaceae		Cowri	III/3a
124.	<i>Hemidesmus indicus</i> (L.) R. Br.	Periplocaceae		Nannari	I
125.	* <i>Heracleum decandolleianum</i> Gamble	Apiaceae	(M-D)	Gaali beeja	I, III/3d
126.	<i>Hibiscus rosa-sinensis</i> L.	Malvaceae		Daasavaala	I, III/3d
127.	<i>Hopea parviflora</i> Bedd.	Dipterocarpaceae		Irupu mara	III/1
128.	* <i>Hoya ovalifolia</i> Wight & Arn.	Asclepiadaceae	(M-A)	Slate kaayi	I, III/3c
129.	* <i>Hydrocotyle javanica</i> Thunb.	Apiaceae	(M-D)	Bale kattuballi	III/2c
130.	* <i>Jatropha curcas</i> L.	Euphorbiaceae	(M-J)	Kaachi	I, III/2a, 4
131.	* <i>Justicia gendarussa</i> L.	Acanthaceae		Baadangolli	I
132.	<i>J. wynaadensis</i> Heyne	Acanthaceae	(D-J)	Madduthoppu	I
133.	<i>Kalanchoe pinnata</i> (Lam.) Persoon	Crassulaceae		Pottoote	I
134.	<i>Kingiodendron pinnatum</i> (Roxb. ex DC.) Harms.	Caesalpiniaceae		Chonda paine	III/1
135.	<i>Kqchia indica</i> Wight	Chenopodiaceae		Kaadunaagadaali	III/4
136.	* <i>Kydia calycina</i> Roxb.	Malvaceae	(O-N)	Bende mara	III/3a
137.	<i>Lagenaria siceraria</i> (Mol) Standl. (= <i>L. vulgaris</i>)	Cucurbitaceae		Thore	III/3c
138.	<i>Lagerstroemia reginae</i> Roxb.	Lythraceae		Pole nandi/ Neerventeak	III/1

Table Contd. :

A	B	C	D**	E	F
139.	* <i>Lagerstroemia lanceolata</i> Wall.		Lythraceae	(M-A)Bollandi	III/1, 3b
140.	<i>Lannea coromandelica</i> (Houtt.) Merr.	Anacardiaceae		Udi mara	III/3b
141.	<i>Lantana camara</i> L.	Verbenaceae		Chithrangi/ Gulabi	I
142.	* <i>Leucas aspera</i> (Willd.) Link	Lamiaceae		Thumbe	I, III/3d
143.	* <i>Ligustrum traven- coricum</i> Gamble	Oleaceae	(N-D)	Cheepe mara	III/3a
144.	<i>Lobelia nicotianifolia</i> Roth ex. Roem. & Schult.	Lobeliaceae	(M-O)	Kaanda	I, III/2c
145.	<i>Lophopetalum wightianum</i> Arn.	Celastraceae		Bolpaale	III/1
146.	<i>Machillus macaran- tha</i> Nees	Lauraceae		Kulur maavu	III/1, 2b
147.	<i>Mangifera indica</i> L.	Anacardiaceae	(A-M)	Maange	II, III/1, 3b, 3e
148.	<i>Margaritaria indica</i> (Dalz.) Airy Shaw	Euphorbiaceae		Uppuli pannu	II
149.	<i>Melia dubia</i> Cav.	Meliaceae		Hebbevu	III/2a
150.	? * <i>Melothria indica</i> Lour.	Cucurbitaceae	(O-N)	Peerakke	I, III/2b
151.	<i>Memecylon angustifo- lium</i> Wr.	Melastomaceae		Mathukaavu mara	III/1
152.	<i>M. umbellatum</i> Burn.	Melastomaceae		Udthale	III/1
153.	<i>Mesua ferrea</i> L.	Clusiaceae		Aathe mara	I, III/1
154.	* <i>Michelia champaca</i> L.	Magnoliaceae	(A-M)	Chappe/Sampige	I, III/1
155.	* <i>Mimosa pudica</i> L.	Leguminosae	(M-O)	Thodumbaadi	I
156.	<i>Mimusops elengi</i> L.	Sapotaceae		Elandepannu	II, III/3d
157.	<i>Mirabilis jalapa</i> L.	Nyctaginaceae		Vaipath mallige	I
158.	* <i>Mitragyna parvi- folia</i> (Roxb.) Korth.	Rubiaceae	(A-M)	Kadagalu	III/1
159.	<i>Momordica charan- tia</i> L.	Cucurbitaceae		Kaipakke	I
160.	<i>Murraya koenigii</i> Spr.	Rutaceae		Kodanaari Thoppu	I, II, III/2c

Table Contd. :

A	B	C	D**	E	F
161.	<i>Musa paradisiaca</i> L.	Musaceae		Baale	I, III/2b, 3a, c & e
162.	* <i>Mussaenda hirsutissima</i> Hutch.	Rubiaceae	(A-D)	Bollarithal/ Avva karthithe, Mova bolthithe, Movada mova, pondaevi	I, III/3d
163.	<i>Nephelium stipulaceum</i> Bedd.	Sapindaceae		Male kumathi	II, III/1
164.	* <i>Ocimum sanctum</i> L.	Lamiaceae	(M-D)	Thulsi	I, III/3e
165.	* <i>Oldenlandia herba-cea</i> L.	Rubiaceae	(M-O)	Mookkoradu gida	I
166.	<i>Oroxylum indicum</i> (L.) Benth. ex Kurz	Bignoniaceae		Konankombu	III/4
167.	* <i>Oxalis latifolia</i> H.B. & K.	Oxalidaceae	(M-D)	Puli thoppu	I
168.	<i>Oxytenanthera bourdilloni</i> Gamble	Poaceae		Kalluvaate	II, III/3a, 3c
169.	<i>O. ritcheyi</i> (Munro) Blatter & McCann.	Poaceae		Hande punda	III/1
170.	<i>Palaguium ellipticum</i> (Dalz.) Baill.	Sapotaceae		Pali mara	III/1
171.	<i>Pandanus odoratissimus</i> L.	Pandanaceae		Munde	III/3a
172.	<i>Phoenix acaulis</i> Roxb.	Arecaceae		Cheepe pannu	II, III/3a
173.	<i>P. humilis</i> Royle	Arecaceae		Cheepe	II, III/3a
174.	* <i>P. sylvestris</i> Roxb.	Arecaceae	(S-O)	Cheepe	III/3a
175.	<i>Phyllanthus fraternus</i> Webster	Euphorbiaceae		Nela nelli	I
176.	<i>Physalis peruviana</i> L.	Solanaceae		Gummate	II
177.	<i>P. minima</i> L.	Solanaceae		Cheriya gummate	I
178.	<i>Piper betel</i> L.	Piperaceae		Kodiyaale	I, III/3d, e
179.	<i>P. nigrum</i> L.	Piperaceae	(S-O)	Nalla malu	I, II III/4
180.	<i>Pithecellobium monadelphum</i> (Roxb.) Koster.	Mimosaceae	(M-A)	Thithukaati mara	III/3d
181.	* <i>Plumbago zeylanica</i> L.	Plumbaginaceae	(M-D)	Chithra mullina gida	I

Table Contd. :

A	B	C	D**	E	F
182.	<i>Plumeria acuminata</i> Ait.	Apocynaceae		Devakalli	I, III/3e
183.	* <i>Pogostemon paniculatus</i> (Willd.) Benth.	Lamiaceae	(A-M)	Ramma tulsi	I
184.	* <i>Polygonum chinense</i> L.	Polygonaceae	(M-O)	Thorale	I, II, III/2b
185.	* <i>P. glabrum</i> Willd.	Polygonaceae		Kirukaanda	I
186.	* <i>Pongamia pinnata</i> (L.) Pierree	Papilionaceae	(M-O)	Pole kunge	I, III/2c
187.	<i>Psidium guajava</i> L.	Myrtaceae		Kaayi	I, II
188.	<i>Pterocarpus marsupium</i> (Roxb.)	Papilionaceae		Baenge	III/1, 3b
189.	<i>Punica granatum</i> L.	Punicaceae		Daalambi	I
190.	* <i>Randia dumentorum</i> Lam.	Rubiaceae	(S-O)	Kaare	I, III/1, 4
191.	* <i>Rauvolfia serpentina</i> (L.) Benth, ex Kurz	Apocynaceae	(A-O)	Amalpuri/ Garuda paathaala	I
192.	* <i>Rhaphidophora laciniata</i> (Burm. f.) Merr. (= <i>R. pertussa</i> Roxb.) Schott.	Araceae	(S-O)	Odibaale	I
193.	<i>Ricinus communis</i> L.	Euphorbiaceae		Aanakke	III/3e
194.	<i>Rourea prainiana</i>	Connaraceae		Puli pannu	II
195.	* <i>Rubia cordifolia</i> L.	Rubiaceae	(M-D)	Araballil/ Kaadiya thoppu	I, III/3d
196.	* <i>Rubus ellipticus</i> Sm.	Rosaceae	(A-M)	Vaale pannu	II
197.	* <i>R. fulvus</i> Focke	Rosaceae		Vaale pannu	II
198.	* <i>Ruta graveolens</i> L.	Rutaceae	(M-D)	Narvisa	I
199.	<i>Salix tetrasperma</i> Roxb.	Salicaceae		Pole bairi	III/1
200.	* <i>Santalum album</i> L.	Santalaceae	(M-M)	Chaandu	III/3d, e
201.	* <i>Sapindus emarginatus</i> Vahl	Sapindaceae	(N-D)	Antuvalakai	III/3d
202.	* <i>S. laurifolius</i> Vahl	Sapindaceae		Antuvalakai	III/3d
203.	* <i>Schefflera wallichiana</i> (Wight & Arn.) Harms	Araliaceae	(A-M)	Ponga bothu	III/2b, 2e

Table Contd. :

A	B	C	D:**	E	F
204.	* <i>Schleichera. oleosa</i> (Lour.) Oken	Sapindaceae		Chaakotte	II, III/1
205.	<i>Schumannianthus virgatus</i> Rolfe	Marantaceae		Koovale	II, III/3a
206.	* <i>Scleropyrum Wallichianum</i> Arn.	Santalaceae	(S-O)	Baakotte	III/2b
207.	* <i>Scutia myrtina</i> Kurz.	Rhmnaceae		Kokkarchi mullu	II, III/2a
208.	<i>Securinea leucopyrus</i> (Willd.) Muell.- Arg.	Euphorbiaceae		Morpannu	II
209.	* <i>Semecarpus anacardium</i> L.	Anacardiaceae	(J-A)	Kaadu geru	I
210.	* <i>Sida acuta</i> Burm.	Malvaceae	(M-O)	Kota thaali	III/3a, d
211.	* <i>S. spinosa</i> L.	Malvaceae	(M-O)	Kurundoti	I, III/3d
212.	* <i>Smilax zeylanica</i> L.	Liliaceae	(N-D)	Mundrath balli	III/3e
213.	* <i>Solanum indicum</i> L.	Solanceae	(M-O)	Katchunde	I
214.	<i>S. nigrum</i> L.	Solanaceae	(M-O)	Kaakethoppu	II, III/3d, 4
215.	* <i>S. verbascifolium</i> L.	Solanaceae	(S-O)	Boodi chunde/ Baale peere	I, III/2c
216.	* <i>Sphaeranthus indicus</i> L.	Asteraceae	(D-J)	Kaadu konde- poo	III/2c
217.	<i>Spondias pinnata</i> (L.f.) Kurz	Anacardiaceae		Ambate	II
218.	<i>Sterculia foetida</i> L. (Retz.)	Sterculiaceae		Jaddunnari mara	I
219.	<i>Symplocos laurina</i> (Retz.) Wall. ex Rehd & E.H. Wills	Symplocaceae		Kuin mara	III/1
220.	<i>Syzygium cumini</i> (L.) Skeels	Myrtaceae		Naera	I, II, III/1, 3b
221.	<i>S. gardneri</i> Duth.	Myrtaceae		Bollurupu	II
222.	* <i>S. heyneanum</i> Wall. ex Gamble	Myrtaceae		Kurte naera pannu	II
223.	<i>S. jambos</i> (L.) Alston	Myrtaceae		Jamnaari pannu	II
224.	<i>Tagetes erecta</i> L.	Compositae		Chendu poo	I, III/3e
225.	* <i>Tamarindus indica</i> L.	Caesalpiniaceae		Pulunje	II, III/3d

Table Contd. :

A	B	C	D**	E	F
226.	* <i>Tectona grandis</i> L.	Verbenaceae	(A-M)	Thega	III/1
227.	<i>Terminalia arjuna</i> (Roxb.) Wight & Arn.	Combretaceae		Pole mathi	III/1
228.	<i>T. bellerica</i> (Gaertn.) Roxb.	Combretaceae	(M-A)	Thaandi	III/4
229.	* <i>T. paniculata</i> Roth	Combretaceae	(A-M)	Mathi	III/1
230.	* <i>Toddalia asiatica</i> (L.) Lam.	Rutaceae	(M-A)	Mookolichar pannu	II
231.	<i>Toona ciliata</i> M. J. Roem.	Meliaceae		Noga mara	III/1
232.	<i>Trema orientalis</i> (L.) Blume	Ulmaceae		Badikeri	III/3a, b
233.	<i>Trewia nudiflora</i> L.	Euphorbiaceae		Per mara	III/1
234.	* <i>Trigonella foenum- graecum</i> L.	Papilionaceae		Menthe	I
235.	<i>Vateria indica</i> L.	Dipterocarpaceae		Bolla paine	I, III/1
236.	* <i>Vitex altissima</i> L.	Verbenaceae	(A-M)	Navilaadi	III/1, 4
237.	* <i>V. negundo</i> L.	Verbenaceae	(M-D)	Nokki	I, II/2b, c
238.	* <i>Wendlandia thyrsoidea</i> (Schultes) Steud.	Rubiaceae	(A-M)	Mallangi/ Banesarali	III/1
239.	<i>Xylia xylocarpa</i> (Roxb.) Taub.	Mimosaceae		Jambe mara	III/1
240.	* <i>Zizyphus oenoplia</i> Mill.	Rhamnaceae	(N-D)	Kotte pannu	II
241.	<i>Z. rugosa</i> Lam.	Rhamnaceae		Bellath pannu	II

* Voucher specimen deposited in Herbarium of Madras University, Botany Department.

** M: indicates May, except when it precedes A or M when it indicates March. A: generally indicates April, except when it precedes S, when it indicates August.

NOTES AND DISCUSSIONS

The list of useful plants provided here cannot be regarded as complete, as the information has been gathered only from some parts of Kodagu. Moreover, not all the information could be included here, as several of the plants are yet to be botanically identified. The local name in Kodava language alone is known, but as this is not one of the recognised languages of the country, these names cannot be found in any manual.

It should be mentioned, however, that barring a few medicinal plants and some wild berries, most of the plants listed here have been mentioned in George Watt's *Economic Products of India* (1889) and/or the CSIR manual on useful Plants of India (Anonymous, 1986b). Most of the medicinal plants have been mentioned in Kirtikar and Basu's *Indian Medicinal Plants* (1978), or are listed in the booklet on medicinal plants brought out recently by the Forest Department of Karnataka (Anonymous, 1986a). The important thing, however, is that the usages indicated—especially for the medicinal plants—by these authors are usually different from those gathered. And there are some unusual plants which are not mentioned in any of these manuals. However, the survey of medicinal plants and their usages in Kodava folk medicine is still being continued, and the details will be presented in a subsequent paper.

If there is a single plant that may be named with which the lives of the rural Kodavas are so closely intertwined that they cannot do without it, one can unhesitatingly name the bamboo, of which *Bambusa arundinacea* is perhaps the most common, followed by *B. vulgaris*, supplemented to some extent by different species of cane and species of *Oxytenanthera*. Until the Keralite influence brought the usage of other timber into house building, houses in Kodagu used to be built entirely with this material, which formed the walls (with mud plastering), beams and rafters, and thatched with paddy straw. Ladders, gates, gate-posts, fence-posts and various other posts, rain-shields, baskets, containers, ladles and various other articles of household usage were made of this material. It also provided food, the tender shoots being regarded as

a special delicacy when they sprout in the monsoon. In fact, considering the fast growth rate of bamboo, it seems worthwhile to develop it in this area, and find special usages for it using modern technology, in areas such as low-cost housing.

Another feature of interest with regard to food plants is the amazing variety of edible fruits that can be gathered from the woods. Over fifty of them are listed in the Table (Serial Nos. 13, 15, 17, 18, 21, 22, 44, 47, 48, 62, 89, 90, 91, 92, 105, 110, 112, 115, 119, 123, 148, 149, 157, 173-74, 177, 185, 188, 195, 197-98, 205, 208, 209, 221, 223, 224, 231, 240, 241).

Some of these have a good potential for developing into horticultural varieties. Others can be developed so as to provide some occupation and means of income to the tribals, who can sell the fruits in local markets during the respective seasons.

India with its innumerable tribes and other ethnic groups, offers ample scope for ethnobotanical studies. However, studies of this nature are relatively few. Most of them pertain to some tribes in North-eastern India, a few are from the Himalayan regions and Madhya Pradesh, occasional ones from the Andaman-Nicobar Islands and rarely from other regions (Jain & Borthakur, 1980; Rao, 1981; Rao & Jamir 1982; Bhargava, 1983). Most of these studies emphasize on the medicinal usage of plants and are undertaken with the same objective as in the present study i.e., to make a record of these plants before this knowledge is lost through the advent of modernization. Appeals towards this kind of recording are continuously being made (Schultes, 1986).

It is interesting to note that some of the plants listed here, especially those used by tribals, are used for similar purposes in tribes in other distant parts of the country. *Ageratum conyzoides* is used for wound healing by the tribals in Gujarat (Bedi, 1978) and Nagaland (Rao & Jamir, 1982). *Careya arborea*, *Centrantherum anthelminticum* and *Oroxylum indicum* are also used by the Gujarat tribals, but for somewhat different purposes. The usage of *Drymaria cordata* by tribals in Meghalaya is reported, but the purposes are different from those listed here (Rao, 1981).

The present study also brings out the importance of preserving some of the cultural traditions of small ethnic groups in relation to their environment in the cause of Environmental Protection on a wider perspective of Time and Space. However, these studies would lose their significance unless the knowledge gained here can be utilized. It is up to the Institutions engaged in research on local systems of medicine, to take up for further study some of the plants listed by ethnobotanical researchers. Since some of the organizations supporting this type of study are also directly connected with Institutions engaged in the kind of research mentioned, it is hoped that they would co-ordinate the studies in such a way that the time-tested traditional methods may be combined with modern technology, to assist Medical Science its eternal fight against Disease.

ACKNOWLEDGEMENTS

I wish to place on record my gratitude to the Council of Scientific and Industrial Research, New Delhi, for the award of a research project 38/(623)/86-EMR-II under which this investigation was carried out; to the many people of Kodagu and the forest officials who have provided me with information and help; to the specialists already mentioned, who have helped me with identification of plants; and to my research assistant P. Loganathan for unstinted help.

REFERENCES

- ANONYMOUS. Hand book of medicinal plants. Karnataka Forest Department, Bangalore. 1986a.
- The useful plants of India. Publications & Information Directorate, CSIR, New Delhi, 1986b.
- ARORA, R.K. The Botany of Coorg Forests. I. General. *Proc. Nat. Acad. Sci.* 30B: 289-305. 1960.
- BEDI, S.J. Ethnobotany of the Ratan Mahal Hills, Gujarat, India. *Economic Botany* 32: 278-284. 1978.
- BHARGAVA, N. Ethnobotanical studies of the tribes of Andaman and Nicobar Islands, India. I. Onge. *Economic Botany* 37: 110-119. 1983.
- GAMBLE, J.S. Flora of the Presidency of Madras, Vol. I to Vol. III. Botanical Survey of India, Calcutta. 1935 (Reprint 1951).
- HENRY, A.N., V. CHITRA AND N. P. BALAKRISHNAN. Flora of Tamil Nadu, India. Series I : Analysis. Vol. 3. Botanical Survey of India, Coimbatore. 1989.
- , G. R. KUMARI AND V. CHITRA. Flora of Tamil Nadu, India. Series I : Analysis. Vol. 2. Botanical Survey of India, Coimbatore. 1987.
- JAIN, S. K. AND S. K. BORTHAKUR. Ethnobotany of the Mikirs in India. *Economic Botany* 34 : 264-272. 1980.
- KIRTIKAR, K. R. AND B.D. BASU. Indian Medicinal Plants. Vols. I to IV. Second Edition revised by E. Blatter, J.F. Caius and K. S. Mhashar. Bishen Singh Mahendra Pal Singh. Dehra Dun. 1935 (Reprint 1975).
- MATHEW, K.M. The flora of the Tamil Nadu Carnatic. St. Joseph's College, Trichy, 1981-1984.
- MUTHANNA, I. M. A tiny model state of South India. Published by the author, Pollibetta, Coorg. 1953.
- NAIR, N. C. AND A. N. HENRY. Flora of Tamil Nadu, India. Series I : Analysis. Vol. I. Botanical Survey of India. Coimbatore. 1983.
- RAO, R. R. Ethnobotany of Meghalaya : Medicinal plants used by Khasi and Garo tribes. *Economic Botany* 35 : 4-9. 1981.
- RAO, R. R. AND N. S. JAMIR. Ethnobotanical studies in Nagaland. I. Medicinal plants. *Ibid.* 36 : 176-181. 1982.
- SALDANHA, C. J. Flora of Karnataka I. Oxford & IBH Publishing Co., New Delhi. 1982.
- SCHULTES, R.E. The reason for ethnobotanical conservation. *Bull. Bot. Surv. India* 28: 203-204. 1986.
- WATT, G. The economic products of India. Vols. I to VI. Periodical Expert, Delhi. 1889 (Reprint 1972).