Investigation on traditional medicine in Myanmar and Vietnam

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Abstract

Myanmar and Vietnam are Southeast Asian countries possessing a long history of traditional medicine systems. In this investigation, we studied the practice of traditional medicine and the use of herbal drugs to treat common diseases by interviewing local traditional medicine practitioners in Shan State, Myanmar, and Lam Dong, Khanh Hoa and Phu Yen Provinces in Vietnam. The result showed that the local people possess abundant indigenous knowledge and experience with the use of plants as an herbal medicine. A large portion of the population have been using traditional medicine practices to meet their health care needs. The practice has shown its efficacy in certain areas, in prevention and against certain diseases, and in improvement of life quality. However, further research, clinical evaluations and trials are needed to rationalize the use of those herbal formulations. On the other hand, evaluation, standardization and regulation must be enhanced in these countries, in order to promote the wider development of traditional medicine.

Key words traditional medicine, Shan State, Myanmar, Vietnam.

Introduction

Traditional medicine occupies an important place in the health care systems of developing countries. The World Health Organization (WHO) estimates that more than 80% of health care needs in these countries are met through traditional health care practices, because traditional medicine is cheaper and more accessible than western medicine.¹⁾

Traditional medicine is the total knowledge, skills and practices based on theories, beliefs, and indigenous cultural experiences. Such knowledge may rely exclusively on past experience and observations handed down from generation to generation. However, the expansion of modern education which has made the younger generation underestimate its traditional value, may lead to a loss of this invaluable knowledge, if it is not protected, respected and preserved properly.

Myanmar and Vietnam are South East Asian countries possessing a long history of traditional medicine systems. Local communities have an intimate relation-

ship with nature and possess abundant indigenous knowledge on the use of plants as an herbal medicine. In our continuing research project on Myanmar and Vietnamese traditional medicine, we have studied the practice and the role of traditional medicine by interviewing the local traditional medicine practitioners in Shan State, Myanmar, and Lam Dong, Khanh Hoa and Phu Yen Provinces in Vietnam in a two-year project, supported by the Japanese Ministry of Education, Culture, Sport, Science and Technology (Monbukagakusho), Japan. Here, the practice of traditional medicine and the uses of medicinal plants for the treatment of common diseases in these two countries are reported.

Myanmar traditional medicine

Myanmar Traditional Medicine has a long history of development. Despite the widespread of western medicine, a part of the population has been using traditional medicine because of its low cost and availability. Shan is the biggest state and most famous in Myanmar for its traditional medicine system. It is located on the

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highlands, more than 1000 m above the sea level, where mainly Shan people habitate together with other minor ethnic groups, who possess invaluable experiences on traditional medicine practice, which have been accumulated through thousands of years. In our two-year research project on Myanmar traditional medicine, suported by the Japanese Monbukagakusho, we have investigated the traditional medicine system in Shan State, especially in Taunggyi, together with its satellite towns, i.e. Pindaya and Nyaung Shwe; Lashio and Kyauk Me by interviewing traditional medicine practitioners in those area.

Most of the traditional medicine practitioners we interviewed learnt the practice from their family, which has been passed from generation to generation. The license for the practice has been obtained after attending short courses in Traditional Medicine School in Mandalay. In general, they are visited by between two to several hundreds of patients per day, depending on the location of the respective pratitioner and/or the seasons. The number is usually increased during a bazaar or festival period. Among the patients, women seem to be predominant. Most of the patients complain of colds, hypertension, heart diseases with its complications such as paralysis, hepatitis, jaundice, diabetes, malaria, rheumatism and women's diseases. These diseases are believed to have a strong relation with diet habit and life style. Indeed, the oil-rich and salty meals of Myanmar people may be the cause of the cardiovascular diseases and hepatitis. The situation is even worsened with Inda people in the Inle Lake area, Nyaung Shwe, who live in houses made just above the water surface and move on boats. Humid and cold atmosphere in the area together with the lack of excercise lead to other complications such as rheumatism. Supprisingly, we were told that only a few cases of malaria were reported in the lake area, whereas the disease is more frequently in other dry areas such as Tuanggyi, Pindaya and Lashio.

The treatment of the diseases are usually made by the use of officially standardized formulations, provided by the Myanmar Traditional Medicine Department. There are 57 such formulations used for common diseases, numbered from 1 to 57, and extended 24 formulations, numbered from 58 to 81, for some specific conditions. The contents of these formulations are well-known.²⁾ They are liquefied or powdered mixtures of

crude drugs, which may originate from plant, mineral or animal. Traditional medicine practitioners may collect individual crude drugs and prepare the necessary formulation by himself or he may buy ready made formulations from any traditional medicine drug store. Some of the practitioners reported that they usually modify the standardized formulation based on their own experience, depending on the specific condition of his patient. The modification includes not only an increase or decrease in the content of one or some ingredients of the formula, but also the addition of other crude drugs. But most of the practitioners reported that they possess their own formulations for some specific diseases which he inherited from his family. For hypertension, Mr. U Kan Htue, 73 years old, in Pindaya Township, uses aloe and clove, whereas other traditional medicine practitioners use Rauwolfia serpentina. Mr. U Thein Hlaing (48 yrs old, Lassio) reported that the plant Hydrocotyle asiatica (Umbelliferae) is used as an agent for hypotension. Sandal wood, Santalum album (Fig. 4-F) is reported to be used as tonics and for treatment of heart disease. Mr. U Kan Htue also reported the use of Andrographis paniculata (Fig. 4-A) for treatment of diabetes. Fruits of Terminalia chebula (Combretaceae) is also used for diabetes by Mr. U Thein Hlaing from Lashio. He also reported the use of Berberis asiatica (Fig. 4-C) and Eclipta alba (Fig. 4-D) as effective medicines for hepatitis, especially viral hepatitis. Andrographis paniculatta can be use for the treatment of malaria. Especially, Mr. Saw Htwe Moe Aung (36 yrs old, Lassio) reported a combination of Gloriosa superba (Fig. 4-E) and salt is an effective formulation for the treatment of acute gout attack.

Interestingly, it is revealed that the most commonly used medicinal plants are *Andrographis paniculatta* and *Tinospora* sp., they are both bitter plants and can be used for various diseases such as cough, kidney diseases, fever and malaria (Fig. 4-A, B). Zingiberaceous plants are also used extensively for treatment of digestive disorder. Some of the practitioners said that they collected the medicinal plants by themselves, whereas others have the plants collected. But they all make the formulations by themselves. Some practitioners produce their formulations in tablet form using machines.

In November 2001, with the guide of traditional medicine practitioners of Pao people, we found a wild ginseng plant growing in Taunggyi (Fig. 1-E). This plant

is used by the local people as a tonic crude drug. However, no scientific information regarded this *Panax* species was available at the time. Subsequently, the plant was unambiguously identified to be *P. zingiberensis*, based on chemical constituent analysis and gene sequence study.³⁾ This species, also known as ginger ginseng, is indigeneous to the South China region.⁴⁾ But at the present time, it is rarely available in China because of over exploitation and is put under protection in China. The finding of the new natural resource of this rare *Panax* species should be important in its conservation.

Another interesting medicinal plant in Shan State was *Sapium insigne* Benth Euphorbiaceae, "yar-ke" in Shan language, or "ta-see-fray-tan" in Pao (Fig. 1-F). It was used as an antidote of opium intoxication, i.e., it possesses an antinarcotic action. Oral administration of water decoction of the plant bark can cure withdrawal symptoms in drug addicted patients. Or the patients can smoke a cigarette made by its roasted leaves for the same purpose. The antinarcotic action of this interesting plant is under investigation in our laboratory. All the medicinal plants described above were collected during our visit and listed in Table I. Voucher samples of these medicinal plants are preserved in the Museum for Materia and Medica, Institute of Natural Medicine, Toyama Medical and Pharmaceutical University, Toyama, Japan.

When the healing practice of most traditional medicine practitioners we interviewed has been run as a small business, that of Mr. U Bo Gyi, 52 years old (Fig. 2-A), who learnt traditional medicine from the age of 12 and had 18-years of experience working in traditional medicine clinics, is a real industry of traditional medicine, including manufacturing, marketing and selling traditional medicines on a large scale basis. At the present time, he possesses 7 traditional medicine shop-clinics in 7 different cities and a factory manufacturing traditional medicines used in his own clinics and supplied to drug stores in the country. He spends most of his time in Yangon and Taunggyi clinics, which are visited by approximately 100 and 300 patients/day, respectively, for diagnosis and treatment; and more than 200 others for obtaining the medicines. He has five assistants in Taunggyi and seven in Yangon to assist him in the business. The factory is located in his home town Taunggyi and it produces 24 kinds of traditional medicine formulations using nearly 300 kinds of crude drugs.

Five Tigers Traditional Medicine Drug, owned by Mr. U Sai Than Maung and Mrs. Daw Nang Ngwe Kyi, is another factory which produces traditional medicine, located in Kyauk Me (Fig. 2-C). This factory is different from the one of Mr. U Bo Gyi in that it only produces and markets tonic formulations through retail stores without diagnosis. It is surprising that the labels of the products are printed with Chinese characters, including the name of the medicine, relating to the famous Juzentaiho-to. It is noted that Kyauk Me as well as Lashio is a small town, located just 100 km from the Chinese border. Bustling trade between the two countries in the area, indicated by huge quantity of Chinese goods and signboards with Chinese characters, suggested the reason the Chinese characters appeared on the labels of products made by the Five Tigers.

Along with those in the private sector, governmental traditional medicine clinics and hospitals also exist in Shan State, where diagnosis and treatment are free of charge. But Mr. U Myint Aung, Township Traditional Medicine Clinics in Pindaya, told us that a small fee for administrative procedure exists in his clinics to cover the high cost of paper. In this small clinic, as well as in the Headquarters of Traditional Medicine of Nyaung Shwe and Lassio, hospitalization is not accepted. When it is necessary, the patients are transferred to hospitals such as Aye Thar Yar Hospital in Taunggyi, which has 26 people on the staff, including 6 traditional medicine doctors, equipped with only 16 beds. It is always overloaded with the number of the patients, which is usually more than 20.

In order to get permission for traditional medicine practicing, the practitioner needs a license to do so, which, in turn, requires completion of courses for traditional medicine knowledge. The Traditional Medicine School in Mandalay is one of the authorized institutions in Myanmar to provide such courses, which can be 1-, 3- or 5-year courses, depending on the educational background of the learners. There is a traditional medicine hospital attached to the school. Since December 2001 it has been promoted to University of Traditional Medicine, being the first university in the field of traditional medicine in South East Asia.

Table I Myanmar Medicinal Plants Collected at Pin-da-ya Township; Taung Gyi City; and Lashio City, Shan State, Their Families, Parts Used, Local Names, Therapeutic Applications and Voucher Specimen Number (TMPW No.)⁴

ž	Local name	Scientific name	Family	Part used	Therapeutic Applications	Place*	TMPW No.
_	Bon-ma-ya-zar	Rauwolfia serpentina Benth.	Apocynaceae	Rhizome	Hypertension	Pi	22178
7	2 Say-gar-gyi	Andrographis paniculata Nees.	Acanthaceae	Whole	Fever, Malaria	Pi	22179
3	Sin-don-ma-nwe	Tinospora cordifolia Miers	Minispermaceae	Steam	Diabetes, fever, tonic.	TG	22180
4	4 Yar-ke	Sapium insigne	Euphorbiaceae	Bark	Antinarcotics activity	TG	22181
5	5 Kyaik-hman	Eclipta alba Hassk	Compositae	Whole	Liver disease, menstrual disease. dysentery.	La	22182
9	6 See-mee-tauk	Gloriosa superba Linn.	Liliaceae	Rhizome	Acute gout	La	22183
7	Nant-thar-phyu	Santalum album Linn.	Santalaceae	Wood	Heart disease, tonic	Ľ	22184
∞	8 Phan-khar	Terminialia chebula	Combretaceae	Fruit	Tonic, diabetes	La	22185
6	9 Say-war-myit	Berberis aristata DC.	Berberidaceae	Roots	Liver disease	La	22186
2	10 Myin-khwa	Hydrocotyle asiatica Linn.	Umbelliferae	Whole	Kidney disease, hypotension, rheumatism.	La	22187

*The plants were identified by Dr. Thein Swe (Department of Traditional Medicine, Ministry of Health, Yangon, Myanmar) except Sapium insigne, which was identified by Prof. Dr. Daw Aye Kyi (Department of Botany, Yangon University, Yangon, Myanmar).

* Pi: Pin-da-ya; TG: Taung Gyi; La: Lashio

Table II Vietnamese Medicinal Plants Collected at Da Lat City, Lam Dong Province, Nha Trang City, Khanh Hoa Province and Tuy Hoa Township, Phu Yen Province, Their Families, Parts Used, Local Names, Therapeutic Applications and Voucher Specimen Number (TMPW No.)

ž	Local name	Scientific name	Family	Part used	Therapeutic Applications	Place*	TMPW No.
I.C	I. Cold, fever						
-	Bắc đèn	Juncus effusus L.	Juncaceae	Stems	Fever, urinary tract infection, inflammation	DF	22081
7	Bạc hà	Mentha arvensis L.	Lamiaceae	Leaves	Fever, headache	NT	22082
3	Bạc hà	Mentha arvensis L.	Lamiaceae	Leaves	Fever, headache	ТН	22083
4	Bạc hà	Mentha arvensis L.	Lamiaceae	Leaves	Fever, headache	DF	22084
S	Bạch chi	Angelica dahurica	Umbeliferae	Roots	Fever, cold, rheumatism, inflammation	DL	22085
9	Cam thảo dây	Abrus precatorius L.	Fabaceae	Stems	Cough, fever.	TH	22086
7	Chi tử	Gardenia jasminoides Ellis	Rubiaceae	Fruits	Fever	NT	22087
∞	Chi tử	Gardenia jasminoides Ellis	Rubiaceae	Fruits	Fever	TH	22088
6	Cò gầu	Cyperus rotundus L.	Cyperaceae	Roots	Headache, fever	TH	22089
10	Cò tranh	Imperata cylindrica	Poaceae	Rhizomes	Fever, urinary tract infection, hypertention	DF	22090
Ξ	Cù ráy	Alocassia macrorrhiza Schott.	Araceae	Roots	Cold, fever, snake bite.	ТН	22091
12	Cúc hoa	Chrysanthemum sinense Sabine.	Asteraceae	Flowers	Headache, fever	NT	22092
13	Dàn xây	Abutilon indicum G. Don	Malvaceae	Whole plant	Fever, diuretic	NT	22093
14	Dàn xây	Abutilon indicum G. Don	Malvaceae	Whole plant	Fever, diuretic	TH	22094
15	Dâu (vô)	Morus alba L.	Moraceae	Bark	Rheumatism, asthma	DL	22095
16	Dâu (lá)	Morus alba L.	Moraceae	Leaves	Fever, cough, hypertension	DL	22096
17	Diệp hạ châu	Phyllanthus urinaria L.	Euphorbiaceae	Whole plant	Fever, liver	NT	22097
18	18 Du long thái	Jussiacea repens L.	Oenotheraceae	Whole plant	Fever	NT	22098

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Kinn nggin Designation Caparifolacee Flowers Flowers Fever, rheamatism Kinn ggin Schizonepea erunifolia Bria, Lamiacee Whole plant Fever, chandache, cough Lat tre Schizonepea erunifolia Bria, Lamiacee Whole plant Fever, dimeric Man kinh tit Virex ripfolia L. Verbranceae Fruits Fever, dimeric Man kinh tit Virex ripfolia L. Verbranceae Fruits Fever, dimeric Man kinh tit Virex ripfolia L. Verbranceae Fruits Fever, dimeric May kinh tit Virex ripfolia L. Verbranceae Roots Tomics, fever May kinh tit Virex ripfolia L. Verbranceae Roots Tomics, fever May kinh tit Virex ripfolia L. Verbranceae Roots Tomics, fever May kinh tit Area ripfolia L. Verbranceae Roots Tomics, fever May kinh tit Area polia para Area para Area para Area para May kinh tit Area polia para Area para Area para	26	Ké đầu ngựa	Xanthium strumarium L.	Asteraceae	Whole plant	Fever, rheumatism	DL	22106
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Lât tre Rambusos sp. Graminease Fruits Antibiotic, fever, inflammation Mân kinh tr Vitex trifoile L. Verbenaceae Fruits Fever, diructic Mân kinh tr Vitex trifoile L. Verbenaceae Fruits Fever, diructic Mân kinh tr Vitex trifoile L. Verbenaceae Fruits Fever, diructic Mân kinh tr Vitex trifoile L. Verbenaceae Roots Fever, diructic Mân high phát Magnolia hypofeaca Roots Tonits, fever Mental Nam high phát Magnolia hypofeaca Roots Astencia Rever, mental Nam hold brong Aretina lappa L. Astenceae Fruits Fever, mental Ngub blang Aretina lappa L. Astenceae Rhole plant Fever, mental Ngub blang Certall a cainica Northelliceae Rhole plant Fever, mental Nam nam Certall a cainica Northelliceae Roots Rever, mental Sa sim Certall a cainica Northelliceae Roots Rever, inflammation, elsorcheae	29	Kinh giới nam	Schizonepeta cristata Willd.	Lamiaceae	Whole plant	Fever, headache, cough	TH	22109
Man kinh tit Vites trifola L. Verbenaceae Fruits Fever, diunetic Man kinh tit Vites trifola L. Verbenaceae Fruits Fever, diunetic Man kinh tit Vites trifola L. Astenaceae Fruits Fever, diunetic Map kinh tit Vites trifola L. Astenaceae Roots Toniss. Green Nam hole hurng Postortenno partiforus Benth. Lamiaceae Roots Digestive disorder, fever, malaria Ngan bid Meganolia hypoleuca Artenim lappa L. Astenaceae Artifola Cold, fever Ngan bid Artenim lappa L. Astenaceae Antibolic, fever, Menstual disorder Ngan bid Artenim lappa L. Astenaceae Revia part Antibolic, fever, malaria Ngan bid Artenim lappa L. Astenaceae Robbe plant Fever, inpertension Ngan min Artenim lappa L. Postpolitiseeae Rhole plant Fever, inpertension Sas m Lamiaceae Scrophuliziaeeae Rhole plant Fever, inpertension Sain dây Pererlia cosianica Urbellifenee Rhole plant	30	Lá tre	Bambusa sp.	Gramineae	Leaves	Antibiotic, fever, inflammation	DF	22110
Mạn kinh từ Vitez trifolia L. Verbenaceae Fruits Fever, duretic Mạn kinh từ Vitez trifolia L. Verbenaceae Fruits Fever, duretic Mộc hương Sansaure alpago Clauke Asteraceae Roots Digestive disorder, fever, malaria Nam hộa phát Magolia hypoteaca Roots Digestive disorder, fever, malaria Nam hộa hương Pogosteanon parviflora Benth. Lamiaceae Aerial part Cold, fever Ngài chu Andersoan acquiarum Benth. Asteraceae Revisit Aerial part Cold, fever Ngàu hàn Andersoan acquiarum Benth. Asteraceae Rhois Fever, hypertension Quin ching Crentella autaire Umbellificaceae Rhois plant Fever, hypertension Sain Gentella autaire Nelumbonaceae Rever, inflammation, leucorhea Sever, inflammation, leucorhea Sain Agy Peruria chorson Benth. Fabocae Roots Fever, inflammation Sain Agy Peruria chorson Benth. Phabocae Roots Fever, inflammation Sain	31	Mạn kinh tử	Vitex trifolia L.	Verbenaceae	Fruits	Fever, diuretic	DIT ,	22111
Man kinh tit Vitex rifolia L. Verbenaceae Fouists Fever, dituetic Moch humg Sanssurea lappa Clarke Asteraceae Roots Tonics, fever Nam high phat Magnolia hypoleuca Magnolia hypoleuca Roots Digistive disorder, fever, malaria Nam high phat Arenina part Arenina part Cold, fever, malaria Acrial part Ngit chu Arenima lopol Asteraceae Renins Fever, Menstual disorder Ngit bhat Arenima lappa L. Asteraceae Ruitis Fever, theumstism, disorder Nhan than Arenima lappa L. Scrophalariaceae Whole plant Fever, inflammation, elecorthea Quân chung Cornella asiatica Umbelliferae Whole plant Fever, inflammation, leucorthea Sas abm Caraclia asiatica Umbelliferae Roots Fever, inflammation, leucorthea Sas abm Caraclia asiatica Umbelliferae Roots Fever, inflammation, leucorthea Sas abm Fever, chung Conghi fever Fever, inflammation, leucorthea Sas abm Lamiaceae Statacaeae </td <td>32</td> <td>Mạn kinh từ</td> <td>Vitex trifolia L.</td> <td>Verbenaceae</td> <td>Fruits</td> <td>Fever, diuretic</td> <td>IN</td> <td>22112</td>	32	Mạn kinh từ	Vitex trifolia L.	Verbenaceae	Fruits	Fever, diuretic	IN	22112
Mộc hương Sansstrea lappa Clarke Asteraceae Roots Tonics, fever Nam hậu phát Magnolia chapoleuca Magnoliaceae Roots Digestive disorder, fever, malaria Nam hộu hương Progistemon parvillorus Benth. Lamiaceae Acrial part Cold, fever Ngài chu Aretinisa vulgaris L. Asteraceae Fever, theumatism, digestive disorder Ngài chu Aretinium lappa L. Asteraceae Ruizomes Fever, theumatism, digestive disorder Nhầu trần Ardenosma captiatum Benth. Scrophulaiaceae Rhiots Fever, theumatism, digestive disorder Nhàn trần Centella astatica Umbelliferae Whole plant Fever, hypertension Sa sâm Centella astatica Umbelliferae Roots Fever, inflammation, tevorrhea Sa sâm Learaia thomsoni Benth. Fabaceae Roots Fever, inflammation, tever corrhea Sen (hật) Prefumbo nucifera Nelumbonaceae Sects Digestive disoace, corrier Sen (hật) Perderaia thomsoni Benth. Fabaceae Roots Fever, inflammation Sen (hật)	33	Mạn kinh tử	Vitex trifolia L.	Verbenaceae	Fruits	Fever, diuretic	TH	22113
Nam hậu phát Aagnolia hypoleuca Anganolia caeae Roots Digestive disorder, fever, malaria Nam hậu phát Pogas hương Pogas emono parriflorus Benth. Lamiaceae Actial part Clol, fever Ngut báng Artenissa vulgaris L. Asteraceae Pruis Fever, Mensual disorder Ngut báng Arteiun lappa L. Scrophulariaceae Rhizones Fever, rheumaism, digostive disorder Nhân trần Ardenosma capitatum Benth. Scrophulariaceae Rhizones Fever, rheumaism, disorder Quán chíng Cyrtomium forntuei Umbelliferae Nhôle plant Fever, hypertension Rau mâ Centella axiatica Umbelliferae Roots Fever, inflammation, leucorrhea Sa sâm Launae pinnarifida Cass. Asteraceae Roots Fever, inflammation San dậy Puertaria thomsoni Benth. Fabaceae Roots Fever, inflammation Sen (lân lâm) Nelumbo nucifera Nelumbonaceae Falamens in Fever, inflammation Sen (lât) Agenturia thomsoni Benth. Nelumbonaceae Stems Fever, inflammation	34	Mộc hương	Sanssurea lappa Clarke	Asteraceae	Roots	Tonics, fever	L	22114
Nam hoắc hương Pogostemon parviflorus Benth. Lamiaceae Actial part Cold, fever Ngât chu Asteraceae Asteraceae Arial part Antibiotic, fever, Menstual disorder Ngub bahg Artemista vulgaris L. Asteraceae Fruits Fever, Indiamatism, digestive disorder Nhât trần Andenosma capitatum Benth. Scrophulariaceae Whole plant Fever, Indiamatism, digestive disorder Quản chúng Cartella asiatica Unbelliferae Robis Fever, Inflammation, leucorrhea Sa sâm Laumace pinarifida Casas. Asteraceae Robis Fever, Inflammation, leucorrhea Sa sâm Laumace pinarifida Casas. Asteraceae Robis Fever, Inflammation, leucorrhea Sa sâm Laumace pinarifida Casas. Asteraceae Robis Fever, Inflammation, leucorrhea Sa sâm Nelumbo nucijera Nelumbonaceae Seeds Digestive diseases, tonics Sen (liên tâm) Nelumbo nucijera Nelumbonaceae Sems Fever, hypertension Thậch hộc Dendrobium spontoric Orchidaceae Sems Fever, hypertension	35	Nam hậu phát	Magnolia hypoleuca	Magnoliaceae	Roots	Digestive disorder, fever, malaria	TH	22173
Ngắt cứu Artemista vulgaris L. Asteraceae Acrital pạrt Antibiotic, fever, Menstual disorder Ngun bằng Aretium lappa L. Asteraceae Fruits Fever, rheumatism, digestive disorder Nhất trần Andenosma capitatum Benth. Scrophulariaceae Whole plant Fever, hypertension Quải chủng Cyronium lortunei Polypodiaceae Rhizones Fever, hypertension Sa sâm Launae pinartifida Cass. Asteraceae Roots Cough, fever Sân đậy Puerari thomsoni Benth. Fabaceae Roots Fever, hypertension Sen (liên tâm) Nelumbo nucifera Nelumbonaceae Secds Digestive diseases, tonics San (liên tâm) Nelumbo nucifera Nelumbonaceae Secds Digestive diseases, tonics Sen (liên tâm) Nelumbo nucifera Nelumbonaceae Secds Digestive diseases, tonics San (liên tâm) Nelumbo nucifera Nelumbonaceae Secds Digestive diseases, tonics Sen (liên tâm) Androbium sp. Orchidaceae Sems Fever Thậc thộc Dendrobium sp.	36	Nam hoắc hương	Pogostemon parviflorus Benth.	Lamiaceae	Aerial part	Cold, fever	TH	22116
Ngun bằng Aretium lappa L. Asteraceae Fruits Fever, rheumatism, digestive disorder Nhân trần Andenosma capitatum Benth. Scrophulariaceae Rhizomes Fever, rheumatism, digestive disorder Quản chủng Cytromium fortunei Polypodiaceae Rhizomes Fever, inflammation, leucorrhea Sa sâm Launae pimartifida Cass. Asteraceae Roots Cough, fever Sa dâm Launae pimartifida Cass. Asteraceae Roots Cough, fever San dây Pueraria thomsoni Benth. Fabaceae Roots Pever, inflammation, leucorrhea Sen (liên tâm) Nélumbo nucifera Nélumbo nucifera Nélumbonaceae Secds Digestive diseases, tonics Sen (liên tâm) Nélumbo nucifera Nélumbo nucifera Nélumbonaceae Secds Digestive diseases, tonics Sen (liện tâm) Nélumbo nucifera Nélumbonaceae Secds Digestive diseases, tonics Sen (liện tâm) Nélumbo nucifera Nélumbonaceae Seras Fever, hypertension Thách hộc Dendrobium sp. Orchidaceae Seras Fever, pacetr, chia <td>37</td> <td>Ngãi cứu</td> <td>Artemisia vulgaris L.</td> <td>Asteraceae</td> <td>Aerial part</td> <td>Antibiotic, fever, Menstual disorder</td> <td>TH</td> <td>22117</td>	37	Ngãi cứu	Artemisia vulgaris L.	Asteraceae	Aerial part	Antibiotic, fever, Menstual disorder	TH	22117
Nhân trần Andenosma capitatum Benth. Scrophulariaceae Whole plant Fever, hypertension Quán chúng Cyrtomium fortunei Polypodiaceae Rhizomes Fever, hypertension Rau má Centella astatica Umbelliferae Whole plant Fever, inflammation, leucorrhea Sa sâm Launae pinnatifida Cass. Asteraceae Roots Cough, fever Sân dây Pueraria thomsoni Benth. Fabaceae Roots Pever, inflammation San (lật) Nelumbo nucifera Nelumbonaceae Seds Digestive diseases, tonics San (liệt tâm) Nelumbo nucifera Nelumbonaceae Seds Piever, hypertension Thạch học Dendrobium sp. Orchidaceae Stems Fever Thậc học Annonum sao-ko Crev. et Lem Zingiberaceae Stems Fever, padactopoctic Thông thảo Armapuna papyrifera Araliaceae Stems Fever, galactopoctic Thống thảo Armapuna rapyrifera Araliaceae Stems Cough, fever Thống thảo Perilla ocymoides L. Lamiaceae Leaves	38	Ngưu bàng	Aretium lappa L.	Asteraceae	Fruits	Fever, rheumatism, digestive disorder	DF	22118
Quán chúng Cyrtomium fortunei Polypodiaceae Rhizomes Fever, hypertension Rau má Centella asiatica Umbelliferae Whole plant Fever, inflammation, leucorrhea Sa sâm Launae pinnatifida Cass. Asteraceae Roots Cough, fever Sán dây Pueraria thomsoni Benth. Fabaceae Roots Fever, inflammation Sen (hật) Nelumbo nucifera Nelumbonaceae Filaments in Fever, inflammation Sen (hật) Nelumbo nucifera Nelumbonaceae Filaments in Fever, inflammation Sen (liên tâm) Nelumbo nucifera Nelumbonaceae Filaments in Fever, papertension Thạch hộc Dendrobium sp. Orchidaceae Stems Fever, hypertension Thápach hộc Dendrobium sp. Orchidaceae Stems Fever, palactopoetic Thápach hộc Anomum tsao-ko Crev, et Lem Zingiberaceae Stems Fever, galactopoetic Thông thảo Acraragemus L. Araceae Stems Fever, galactopoetic Thià tô Acraragemus L. Araceae Bumacaeae	39	Nhân trần	Andenosma capitatum Benth.	Scrophulariaceae	Whole plant	Fever	LN	22119
Rau má Centella asiatica Umbelliferae Whole plant Fever, inflammation, leucorrhea Sa sâm Launae pinnatifda Cass. Asteraceae Roots Cough, fever Sân dây Pueraria thomsoni Benth. Fabaceae Roots Fever, inflammation San (hật) Nelumbo nucifera Nelumbonaceae Filaments in Fever, hypertension San (liên tâm) Nelumbo nucifera Orchidaceae Stems Fever Thạch hộc Dendrobium sp. Orchidaceae Stems Fever Thách hộc Dendrobium sp. Orchidaceae Stems Fever Thách hộc Dendrobium sp. Orchidaceae Stems Fever Thách hộc Amonum tsao-ko Cev. et Lem Zingiberaceae Stems Fever Thông thảo Terrapanax papyrifera Araliaceae Stems Fever, galactopoetic Thổng thảo Terrapanax papyrifera Araliaceae Stems Fever, galactopoetic Thổng thảo Acorus calamus L. Araceae Rhi promes Pever, galactopoetic Tia tô	40	Quán chúng	Cyrtomium fortunei	Polypodiaceae	Rhizomes	Fever, hypertension	DF	22120
Sa sâm Launae pinnatiflad Cass. Asteraceae Roots Cough, fever Sân dây Pueraria thomsoni Benth. Fabaceae Roots Fever, inflammation Sen (hật) Nelumbo nucifera Nelumbonaceae Seeds Digestive diseases, tonics Sen (liên tâm) Nelumbo nucifera Nelumbonaceae Filaments in Fever, hypertension Thạch hộc Dendrobium sp. Orchidaceae Stems Fever Thạch hộc Dendrobium sp. Orchidaceae Stems Fever Thác quả Amonum sao-ko Crev. et Lem Zingiberaceae Stems Fever, headache Thông thảo Tetrapanax papyrifera Araliaceae Stems Fever, galactopoctic Thông thảo Tetrapanax papyrifera Araliaceae Stems Fever, galactopoctic Thột khảo Acorus calamus L. Araceae Rhizomes Diureit, fever, cold Tia tỏ Perilla ocymoides L. Lamiaceae Leaves Cough, fever Trì thì Blumea balsamifera DC. Asteraceae Leaves Fever, cough	41	Rau má	Centella asiatica	Umbelliferae	Whole plant	Fever, inflammation, leucorrhea	DI	22121
Sán dây Pueraria thomsoni Benth. Fabaceae Roots Fever, inflammation Sen (hật) Nelumbo nucifera Nelumbonaceae Filaments in Fever, hypertension Sen (liên tâm) Nelumbo nucifera Nelumbonaceae Filaments in Fever, hypertension Thạch hộc Dendrobium sp. Orchidaceae Stems Fever Thạch hộc Dendrobium sp. Orchidaceae Stems Fever Thạch hộc Dendrobium sp. Orchidaceae Stems Fever Thác quả Amonum tsao-ko Crev. et Lem Zingiberaceae Stems Fever, headache Thóg thảo Terrapanax papyrifera Araliaceae Stems Fever, galactopoetic Thóg thảo Terrapanax papyrifera Araliaceae Stems Fever, galactopoetic Thúg thào Acorus calamus L. Araceae Rhizomes Cough, fever Tia tò Perilla ocymoides L. Lamiaceae Leaves Cough, fever Trình nữ hoàng cung Crinum asiaticum L. Amaryllidaceae Leaves Fever, cough Từ	45	Sa sâm	Launae pinnatifida Cass.	Asteraceae	Roots	Cough, fever	NT	22122
Sen (hật) Nelumbo nucifera Nelumbonaceae Seeds Digestive diseases, tonics Sen (liên tâm) Nelumbo nucifera Nelumbonaceae Filaments in Fever, hypertension Thạch hộc Dendrobium sp. Orchidaceae Stems Fever, hypertension Thạch hộc Dendrobium sp. Orchidaceae Stems Fever, headache Thàch hộc Dendrobium sp. Amonum tsao-ko Crev. et Lem Zingiberaceae Fevit Thòng thào Tetrapanax papyrifera Araliaceae Stems Fever, galactopoetic Thông thào Tetrapanax papyrifera Araliaceae Stems Fever, galactopoetic Thột thào thào Tetrapanax papyrifera Araliaceae Stems Fever, galactopoetic Thiy xương bỏ Acorus calamus L. Araliaceae Leaves Cough, fever, cold Tiá th Perilla ocymoides L. Lamiaceae Leaves Cough, fever Trìth nữ hoàng cung Crinum asiaticum L. Amarylidaceae Whole plant Anti-inflammation, fever Từ bị Blumea balsamifera DC. Asteraceae Leave	43	Sắn dây	Pueraria thomsoni Benth.	Fabaceae	Roots	Fever, inflammation	DF	22123
Sen (liền tâm) Nelumbo nucifera Nelumbonaceae Filaments in Fever, hypertension Thạch hộc Dendrobium sp. Orchidaceae Stems Fever Thạch hộc Dendrobium sp. Orchidaceae Stems Fever Thạch hộc Dendrobium sp. Orchidaceae Fever Fever Thác quả Amonum tsac-ko Crev. et Lem Zingiberaceae Fever Fever Thảc quả Tetrapanax papyrifera Araliaceae Stems Fever, galactopoetic Thông thảo Tetrapanax papyrifera Araliaceae Stems Fever, galactopoetic Thủy xương bồ Acorus calamus L. Araceae Leaves Cough, fever Tiá tô Perilla ocymoides L. Lamiaceae Leaves Cough, fever Tiá tô Perilla ocymoides L. Amarylidaceae Whole plant Anti-inflammation, fever Trìth nữ hoàng cung Perilla ocymoides L. Amarylidaceae Leaves Cough, fever Từ bị Blumea balsamifera DC. Asteraceae Leaves Fever, cough	4	Sen (hạt)	Nelumbo nucifera	Nelumbonaceae	Seeds	Digestive diseases, tonics	DF	22124
Thạch hộc Dendrobium sp. Orchidaceae Stems Fever Thạch hộc Dendrobium sp. Orchidaceae Stems Fever, headache Thảo quả Amomum tsao-ko Crev. et Lem Zingiberaceae Fruits Fever, galactopoetic Thông thảo Tetrapanax papyrifera Araliaceae Stems Fever, galactopoetic Thỏng thảo Tetrapanax papyrifera Araliaceae Stems Fever, galactopoetic Thủy xương bỏ Acorus calamus L. Araceae Rhizomes Diuretic, fever, cold Tia tỏ Perilla ocymoides L. Lamiaceae Leaves Cough, fever Trình nữ hoàng cung Crinum asiaticum L. Amaryllidaceae Whole plant Anti-inflammation, fever Từ bị Blumea balsamifera DC. Asteraceae Leaves Fever, cough	45	Sen (liên tâm)	Nelumbo nucifera	Nelumbonaceae	Filaments in	Fever, hypertension	DF	22125
Thạch hộcDendrobium sp.OrchidaceaeStemsFever, headacheThảo quàAmomum tsao-ko Crev. et LemZingiberaceaeFruitsFever, headacheThỏng thảoTetrapanax papyriferaAraliaceaeStemsFever, galactopoeticThủy xương bỏAcorus calamus L.AraceaeRhizomesDiuretic, fever, coldTía tỏPerilla ocymoides L.LamiaceaeLeavesCough, feverTia tỏPerilla ocymoides L.LamiaceaeLeavesCough, feverTrình nữ hoàng cungCrinum asiaticum L.AmaryllidaceaeWhole plantAnti-inflammation, feverTừ bịBlumea balsamifera DC.AsteraceaeLeavesFever, coughTừ bịBlumea balsamifera DC.AsteraceaeLeavesFever, cough	46	Thạch hộc	Dendrobium sp.	Orchidaceae	Stems	Fever	LN	22126
Thảo quảAmonum tsao-ko Crev. et LemZingiberaceaeFruitsFever, palactopoeticThông thảoTetrapanax papyriferaAraliaceaeStemsFever, galactopoeticThông thảoTetrapanax papyriferaAraliaceaeStemsFever, galactopoeticThủy xương bỏAcorus calamus L.AraceaeRhizomesDiuretic, fever, coldTía tôPerilla ocymoides L.LamiaceaeLeavesCough, feverTiá tỏPerilla ocymoides L.LamiaceaeWhole plantAnti-inflammation, feverTừ biBlumea balsamifera DC.AsteraceaeLeavesFever, coughTừ biBlumea balsamifera DC.AsteraceaeLeavesFever, cough	47	Thạch hộc	Dendrobium sp.	Orchidaceae	Stems	Fever	Dľ	22127
Thông thảo Tetrapanax papyrifera Araliaceae Stems Fever, galactopoetic Thông thảo Tetrapanax papyrifera Araliaceae Stems Fever, galactopoetic Thủy xương bồ Acorus calamus L. Araceae Rhizomes Diuretic, fever, cold Tia tô Perilla ocymoides L. Lamiaceae Leaves Cough, fever Trình nữ hoàng cung Crinum asiaticum L. Amaryllidaceae Whole plant Anti-inflammation, fever Từ bị Blumea balsamifera DC. Asteraceae Leaves Fever, cough Từ bị Blumea balsamifera DC. Asteraceae Leaves Fever, cough	84	Thảo quả	Amomum tsao-ko Crev. et Lem	Zingiberaceae	Fruits	Fever, headache	TH	22128
Thông thảoTetrapanax papyriferaAraliaceaeStemsFever, galactopoeticThủy xương bồAcorus calamus L.AraceaeRhizomesDiuretic, fever, coldTia tôPerilla ocymoides L.LamiaceaeLeavesCough, feverTia tôPerilla ocymoides L.AmaryllidaceaeWhole plantAnti-inflammation, feverTừ hìn nữ hoàng cungCrinum asiaticum L.AsteraceaeLeavesFever, coughTừ bịBlumea balsamifera DC.AsteraceaeLeavesFever, cough	49	Thông thảo	Tetrapanax papyrifera	Araliaceae	Stems	Fever, galactopoetic	L	22129
Thủy xương bồ Acorus calamus L. Araceae Rhizomes Diuretic, fever, cold Tía tổ Perilla ocymoides L. Lamiaceae Leaves Cough, fever Tía tổ Perilla ocymoides L. Lamiaceae Leaves Cough, fever Tính nữ hoàng cung Crinum asiaticum L. Amaryllidaceae Whole plant Anti-inflammation, fever Từ bị Blumea balsamifera DC. Asteraceae Leaves Fever, cough Từ bị Blumea balsamifera DC. Asteraceae Leaves Fever, cough	20	Thông thảo	Tetrapanax papyrifera	Araliaceae	Stems	Fever, galactopoetic	DF	22130
Tía tôPerilla ocymoides L.LamiaceaeLeavesCough, feverTía tôPerilla ocymoides L.LamiaceaeLeavesCough, feverTrinh nữ hoàng cungCrinum asiaticum L.AmaryllidaceaeWhole plantAnti-inflammation, feverTừ biBlumea balsamifera DC.AsteraceaeLeavesFever, coughTừ biBlumea balsamifera DC.AsteraceaeLeavesFever, cough	51	Thủy xương bồ	Acorus calamus L.	Araceae	Rhizomes	Diuretic, fever, cold	DI	22131
Tía tôPerilla ocymoides L.LamiaceaeLawesCough, feverTrình nữ hoàng cungCrinum asiaticum L.AmaryllidaceaeWhole plantAnti-inflammation, feverTừ biBlumea balsamifera DC.AsteraceaeLeavesFever, coughTừ biBlumea balsamifera DC.AsteraceaeLeavesFever, cough	52	Tía tô	Perilla ocymoides L.	Lamiaceae	Leaves	Cough, fever	DI	22132
Trinh nữ hoàng cungCrinum asiaticum L.AmaryllidaceaeWhole plantAnti-inflammation, feverTừ biBlumea balsamifera DC.AsteraceaeLeavesFever, coughTừ biBlumea balsamifera DC.AsteraceaeLeavesFever, cough	53	Tía tô	Perilla ocymoides L.	Lamiaceae	Leaves	Cough, fever	ТН	22133
Từ bịBlumea balsamifera DC.AsteraceaeLeavesFever, coughTừ bịBlumea balsamifera DC.AsteraceaeLeavesFever, cough	24	Trinh nữ hoàng cung	Crinum asiaticum L.	Amaryllidaceae	Whole plant	Anti-inflammation, fever	TH	22134
Từ bi Blumea balsamifera DC. Asteraceae Leaves Fever, cough	55	Từ bi	Blumea balsamifera DC.	Asteraceae	Leaves	Fever, cough	L	22135
The second secon	99	Từ bi	Blumea balsamifera DC.	Asteraceae	Leaves	Fever, cough	TH	22136

Ħ	II. Rheumatism						
-	Bạch chi	Angelica dahurica	Umbeliferae	Roots	Fever, cold, rheumatism, inflammation	DL	22137
7	Cầu tích	Cibotium barometz	Dicksoniaceae	Roots	Rheumatism	DĽ	22138
3	Dâu	Morus alba L.	Moraceae	Bark	Rheumatism, asthma	DĽ	22095
4	Dây tơ hồng	Cuscuta chinensis Lamm.	Cuscutaceae	Seeds	Rheumatism, impotence	TH	22140
5		Blumea balsamifera L.	Asteraceae	Whole plant	Rheumatism, inflammation, painful menses	DF	22177
9	Đậu săng (đậu chiều)	Cajanus cajan L.	Fabaceae	Seeds	Fever, rheumatism, cough	DF	22142
7	Địa liền	Kaempfera galanga L.	Zingiberaceae	Rhizomes	Rheumatism, cough	DL	22143
∞	Độc hoạt	Angelica tuhuo	Umbelliferae	Roots	Rheumatism	DF	22144
6	Hồng thiên quì	Begonia jimbrisitipalata Hance.	Begoniaceae	Whole plant	Rheumatism, inflammation	DF	22145
10	Huyết đẳng	Sargentodoxa cuneata	Sargentodoxceae	Stems	Menstruation disorder, rheumatism	DL	22146
=	Huyết giác	Dracaena cambodiana	Dracaenaceae	Stems	Congestion, rheumatism	DF	22147
12	Ké đầu ngựa	Xanthium strumarium L.	Asteraceae	Whole plant	Fever, rheumatism	TH	22148
13	Kim ngân	Lonicera japonica	Caprifoliaceae	Flowers	Fever, rheumatism	DF	22149
14	Nghệ	Curcuma longa L.	Zingiberaceae	Rhizomes	Menstrual disorder, inflammation, rheumatism	DL	22150
15	Ngưu bàng	Aretium lappa L.	Asteraceae	Fruits	Fever, rheumatism, digestive disorder	DF	22118
16	Ngưu tất	Achyranthes bidentata Blume	Amaranthaceae	Roots	Rheumatism	LN	22152
17	Qué	Cinnamomum cassia	Lauraceae	Bark	Digestive diseases, rheumatism	DF	22153
18	Tam thất căn	Polygonum cuspidatum Sieb.	Polygonaceae	Rhizomes	Rheumatism, inflammation, hepatitis	DI	22167
19	Thiên niên kiện	Homalomena aromatica	Araceae	Roots	Rheumatism	LN	22155
20	Thiên niên kiện	Homalomena aromatica	Araceae	Roots	Rheumatism	TH	22156
E	III. Hepatitis						
_	Bộ công anh TQ	Taraxacum officinale	Asteraceae	Whole plant	Hepatitis, inflammation, nephropathy	DL	22157
2	Chó đẻ răng cưa	Phyllanthus urinaria L.	Euphorbiaceae	Aerial part	Inflammation, hepatitis, snake bite	DL	22158
3	Có mực (nhọ nồi)	Eclipta alba Hassk.	Asteraceae	Aerial part	Hepatitis, inflammation	DL	22159
4	Dành dành	Gardenia jasminoides	Rubiaceae	Seeds	Inflammation, hepatitis, diuretic	DL	22160
5	Dây chiều	Tetracera scandens L.	Dilleniaceae	Roots and stems	Inflammation, hepatitis	Dľ	22161
9		Tetracera scandens L.	Dilleniaceae	Roots and stems	Inflammation, hepatitis	Į.	22162
7	Địa đớm	Elephantopus scaber Linn.	Asteraceae	Whole plant	Inflammation, hepatitis, diarrhea	Dľ	22163
∞	Kim biển bá	Selaginella doederleinii Hieron.	Selaginellaceae	Whole plant	Lung cancer, hepatitis	DF	22164
6		Plantago asiatica	Plantaginaceae	Aerial part	Urinary tract infection, inflammation, hepatitis	DF	22165
10	Nhân trần	Andenosma capitatum Benth.	Scrophulariaceae	Whole plant	Fever, hepatitis	ŢN	22119
11	Tam thất căn	Polygonum cuspidatum Sieb.	Polygonaceae	Rhizomes	Rheumatism, inflammation, hepatitis	DL	22167
12	Thạch thượng bá	Selaginella moellendorfii Hieron.	Selaginellaceae	Whole plant	Acute hepatitis, infection, diuretic	DF	22168
13	Thân canh thảo	Lycopodium japonicum	Lycopodiaceae	Whole plant	Urinary tract infection, hepatitis, inflammation	DL	22169
2	IV. Malaria						
_		Cinnamomum iners	Lauraceae	Bark	Digestive disorder, fever, malaria	DF	22170
2	Hoàng đẳng	Fibraurea tinctoria L.	Menispermaceae	Roots	Inflammation, diarrhea, malaria	DL	22171
ı							

3	3 Luong khuong	Alpinia officinarum Hance.	Zingiberaceae	Roots	Jaundice, malaria	HL	22172
4	4 Nam hậu phát	Magnolia hypoleuca Redh. et Wils	Magnoliaceae	Roots	Digestive disorder, fever, malaria	TH	22173
5	5 Nam sài hồ	Polycarpaea arenaria	Apiaceae	Roots	Malaria	TH	22174
9	Riềng	Alpinia officinarum Hance.	Zingiberaceae	Roots	Jaundice, malaria	HI	22175
7	Sài hồ	Bupleurum sinense DC.	Apiaceae	Roots	Malaria	TN	22176
>	V. Diabetes						
1	Bạch truật	Atractylodes macrocephala	Asteraceae	Rhizomes	Tonics, diarrhea, diabetes, diuretic	DF	22166
2	2 Câu kỳ tử	Lycium sinense Mill.	Solanaceae	Fruits	Tonics, diabetes	N	22154
3	Dùa cạn	Catharanthus roseus G. Don	Apocynaceae	Leaves, roots	Diabetes	N	22151
4	Huỳnh kỳ	Astragalus membranaceus Bunge	Fabaceae	Rhizomes	Diabetes, diuretic	TH	22141
VI.	VI. Cancer					-	
-	Dừa cạn	Catharanthus roseus G. Don	Apocynaceae	Leaves, roots	Diabetes	TH	22139
7	2 Kim biển bá	Selaginella doederleinii Hieron.	Selaginellaceae	Whole plant	Lung cancer, respiratory tract diseases, hepatitis	LN	22115

^aThe plants were identified by Mr. Nguyen Duy Chinh (Department of Botany, Dalat University, Dalat, Vietnam). * DL: Dalat, NT: Nha Trang; TH: Tuy Hoa

Vietnamese traditional medicine

Vietnam is a tropical country with different climatic and geographical features, facilitating the diversity of the natural resources. Eighty percent of the population live in the countryside and face many difficulties in gaining access to modern medicine. However, Vietnam possesses an age-old traditional system of medicine, a precious heritage handed down from times immemorial. Traditional medicine and herbal drugs have made a tremendous contribution to the national health and development from the very beginning.

In the two-year project on Vietnamese traditional medicine, we went to Lam Dong, Khanh Hoa and Phu Yen provinces, visiting their major cities, and interviewed the local traditional medicine practitioners to gather information on the use of traditional medicine. Lam Dong Province is located on the highlands at an al-

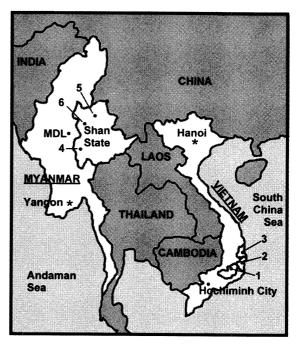


Chart 1 Map of study sites in Vietnam and Shan State-Myanmar.

- 1 Da Lat (Lam Dong province)
- 2 Nha Trang (Khanh Hoa province)
- 3 Tuy Hoa (Phu Yen province)
- 4 Taunggyi
- 5 Lashio
- 6 Kyaukme
- **MDL** Mandalay

titude of 300 to 1500 m above sea level. Its capital, Da Lat City, is at the highest altitude, 1500 m. Characteristic climatic conditions of Lam Dong has provided diversified plant species of the subtropical to temperate zone climates. While Khanh Hoa and Phu Yen provinces, centered by Nha Trang and Tuy Hoa cities, represent a Vietnamese coastal tropical climate with an altitude of 0 to 500 m.

Due to its unique climate, Da Lat city possesses a floristic composition of the temperate zone, in which several plants have been transplanted from Europe by French during their invasion of the country in the 19th century. These plants include cinchona (Cinchona sp., Rubiaceae) and artichoke (Cynara scolymus, Asteraceae) (Fig. 3-E, F). The bark of the first plant is famous for its content of alkaloids, quinine and quinidine, which are used for malaria treatment, whereas tea made from the whole plant of the latter is used as liver and kidney tonics. Both two plants are now cultivated widely in the city. Khanh Hoa and Phu Yen are characteristic with their tropical flora. One of the most valuable plants in these provinces is Aquilaria crassna, which produces the incense heartwood, well-known as agarwood. We have investigated the exploitation and production together with the usage of this special product, the result of the survey will be published elsewhere.5)

Most of the traditional medicine practitioners we interviewed learnt the practice from their family, which has been passed from generation to generation. They are visited by 5 to 20 patients per day. Most of the patients complain of cold, fever, hepatitis, malaria, rheumatism and women's diseases. Due to its cool weather (average temperature ca. 20 °C), people in Dalat city seem to suffer from rheumatism to a higher extent, compared to Nha Trang and Tuy Hoa, which are characterized by hot and humid weather, which, in turn, may be related to malaria.

On the question of whether there is a difference between Chinese and Vietnamese traditional medicine, all traditional medicine practitioners we interviewed agreed that differences exist between the two systems. While the theory of the two traditional medicine systems is almost the same, the origin of the crude drugs, their usage together with differences in climatic condition and humanity make the differences between them. North medicine is crude drugs which originated from China, whereas South medicine refers to those growing in Vietnam.

Among medicinal plants growing in Vietnam, there are both native and non-native plants. The latter includes plants transplanted from China, but which have already adapted to the local condition in Vietnam. When marketed, they are given the same name with the original Chinese crude drug but followed by a sufix "Nam", which means South, to distinguish with the imported Chinese origin, usually followed by "Bac", which means North. For instance, the original Chinese crude drug of Glycyrrhiza glabra (甘草) is called "cam thao" or "cam thao Bac" to distinguish from that of the same plant, but growing in Vietnam, which is called "cam thao Nam". Other examples are "tam that Bac" and "tam that Nam", the rhizomes of Panax notoginseng (三七人参); "do trong Bac" and "do trong Nam", roots of Eucomia ulmoides (杜仲). However, South medicine is often derived from a plant species or genus absolutely different from the Chinese original, but they are used for the same purpose as Chinese crude drugs.

Crude drugs usually used for the treatment of common diseases in Vietnam are listed in Table II, which was created from information collected in interviews with the traditional medicine practitioners. Voucher samples of these crude drugs, collected during our visit, are also preserved in the Museum for Materia and Medica, Institute of Natural Medicine, Toyama Medical and Pharmaceutical University, Toyama, Japan. The table shows 45, 19, 12, 7, 4 and 2 crude drugs used for the treatment of the most common diseases, i.e. cold/fever, rheumatism, hepatitis, malaria, diabetes and cancer, respectively. The highest number of crude drugs is shown for cold and fever, 49, in which 10 are used by both Da Lat and Nha Trang-Tuy Hoa. These included plants with essential oil such as Mentha arvensis (Fig. 4-G), Ocimum gratissimum, O. basilicum, Schizonepeta tenuifolia, S. cristata and Perilla ocymoides, which are usually used as a steam-bath. They are common vegetables and those readily available in private gardens. Other often used crude drugs for cold and fever are the whole plant of Xanthium strumarium L. (Fig. 4-H), the fruit of Vitex trifolia (Fig. 4-I), the flower of Lonicera japonica (Fig. 4-J), the roots of Pueraria thomsoni, the stem of Dendrobium sp. and Tetrapanax papyrifera. Of the total 19 crude drugs used for the treatment of rheumatism, the number of crude drugs used in Da Lat is significantly higher than that used in Nha Trang-Tuy Hoa (17 vs 5).

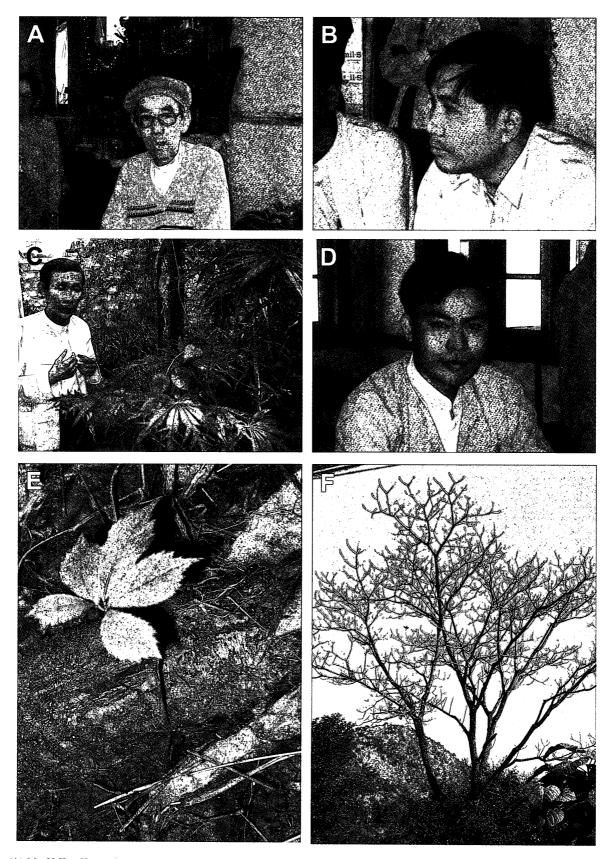


Fig. 1 (A) Mr. U Kan Htue (73 years old, Pindaya); (B) Mr. Saw Htwe Moe Aung (36 years old, Lashio); (C) Mr. U Thein Hlaing (48 years old, Lashio); (D) Mr. Sai Aung Kyi (38 years old, Kyauk Me); (E) Myanmar ginseng (Panax zingiberensis); (F) Yar-ke (Sapium insigne).



Fig. 2 Mr. U Bo Gyi (52 years old, Taunggyi) (A) and a processing department in his factory in Taunggyi (B). The packing department of Five Tigers factory in Kyauk Me (C) and his tonic product (D).

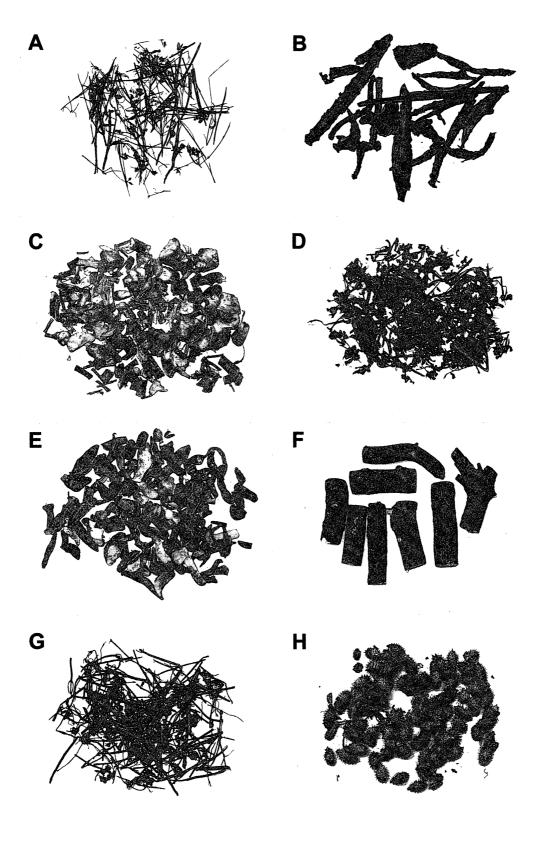
Another three are used by both Da Lat and Nha Trang-Tuy Hoa, which are well-known anti-rheumatoid plants, Xanthium strumarium, Lonicera japonica (Fig. 4-H, J) and Homalomena aromatica., the first two plants are used for cold and fever also. Many traditional medicine practitioners reported the use of a combination of Phyllanthus urinaria and Andenosma capitatum (Fig. 4-K, L) as an effective formula for hepatitis. The two plants were also told to be effective when used alone against jaundice and viral hepatitis. Traditonal medicine practitioners in Da Lat and Nha Trang-Tuy Hoa also reported the use of the roots and stem of Tetracera scandens as a treatment for hepatitis. Among 7 crude drugs used for malaria in Table II, two are listed under the name "sai ho". "Sai ho", Bubleurum sinense (柴胡) is originated from China, whereas Polycarpaea arenaria (Fig. 4-O) is its Vietnamese equivalent with a name "sai ho nam" to indicate its South origin. Similarly, two Vietnamese equivalent crude drugs for Magnolia

officinalis (Magnoliaceae, not listed in Table II) are used to treat malaria. One of them is Cinnamomum iners (Lauraceae) (Fig. 4-M), growing in Da Lat, and the other is Magnolia hypoleuca (Magnoliaceae) (Fig. 4-N), growing in Nha Trang-Tuy Hoa. They are called "nam hau phat" and "hau phat nam", respectively, to be related to the Chinese M. officinalis (厚朴), which is known as "hau phat" in Vietnamese. There are 2 crude drugs used for cancer listed in Table II, in addition to the well-known Catharanthus roseus (Apocynaceae), Selaginella doederleinii (Fig. 4-P) is used for lung cancer and respiratory tract diseases. It is small plant indigenous to Da Lat, growing wildly in the high mountain.

Vietnamese traditional medicine has been claimed to have a close relationship with the Chinese traditional medicine in many aspects, including theory and phylosophy. Due to its early and wealthy development, Chinese traditional medicine has had a strong impact on the traditional medicine system of Asian countries since



Fig. 3 (A) Mr. Nguyen Van Lieu (50 years old, Da Lat); (B) Mr. Bui Van Nghia (48 years old, Nha Trang); (C) Mrs. Truong Thi Nhan (71 years old, Tuy Hoa); (D) Mr. Nguyen Thiep (89 years old, Tuy Hoa); (E) Two over 50-year old cinchona trees planted by French in Da Lat. In the backside are newly cultivated cinchona trees; (F) Cultivated artichok (*Cynara scolymus*) in Da Lat.



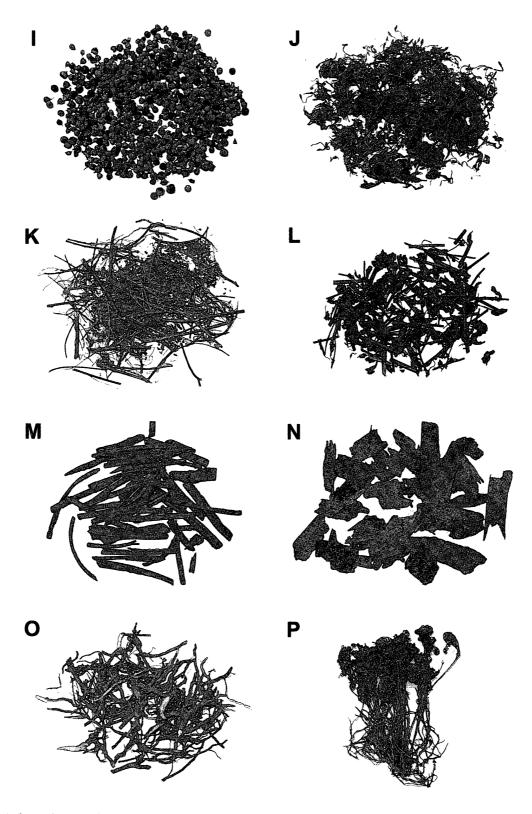


Fig. 4 (A) Andrographis paniculata; collected in Pindaya; (B) Tinospora sp.; collected in Taunggyi; (C) Berberis asiatica; collected in Kyaukme; (D) Eclipta alba; collected in Lashio; (E) Gloriosa superba; collected in Kyaukme; (F) Santalum album; collected in Lashio; (G) Mentha arvensis; collected in Da Lat; (H) Xanthium strumarium; collected in Nha Trang; (I) Vitex trifolia; collected in Nha Trang; (J) Lonicera japonica; collected in Nha Trang; (K) Phyllanthus urinaria; collected in Da Lat; (L) Andenosma capitatum; collected in Nha Trang; (M) Cinnamomum iners; collected in Da Lat; (N) Magnolia hypoleuca; collected in Tuy Hoa; (O) Polycarpaea arenaria; collected in Tuy Hoa; (P) Selaginella doederleinii; collected in Da Lat.

ancient times, especially Japan, Korea and Vietnam. However, while Chinese traditional medicine arrives in Vietnam, it has been modified to be adapted to the Vietnamese people and condition. Therefore, Vietnamese traditional medicine is a result of a combination of Chinese traditional medicine and indigeneous traditional medicine. The specialty of Vietnamese traditional medicine, referred as South medicine, has been documented as early as 17th century in a book written by Tue Tinh (1623-1713), the greatest Vietnamese traditional medicine doctor, who stated that "South medicine is for South people".

Conclusion

In this report, we assess the use of traditional medicine practices in Shan State, Myanmar and Lam Dong, Khanh Hoa and Phu Yen Provinces, Vietnam. The result showed that a large portion of the population has been using traditional medicine practices to meet their health care needs. The local people possess abundant indigenous knowledge and experiences on the use of plants as an herbal medicine, which have been accumulated and handed down from generation to generation. Traditional medicine has shown its efficacy in certain areas, against certain diseases, in prevention of disease and improvement of life quality, especially in aging populations, although further research, clinical evaluations and trials are badly needed. On the other hand, in order to apply traditional medicine more widely, evaluation standardization and regulation must be enhanced in these countries. Growing use of traditional medicine, in turn, would lead to concerns relating to safety and efficacy, as well as quality control of herbal product and traditional medicine therapy. These are fully supported by a comprehensive strategy on traditional medicine developed recently by WHO,6) which promotes the proper use of traditional medicine not only by supporting the national policies on traditional medicine but also by providing international technical standards, technical guidance and information relating to the development of traditional medicine.

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和文抄録

東南アジアにおいてミャンマー,ベトナムは,長い歴史を持つ伝統医学体系を有する国々である。我々は,伝統医学の治療法,疾病に対する生薬の用法の現状を知るためにミャンマー国シャン州,ベトナム国ラムドン,カンホア,フェン省において伝統医学に携わる地域住民への聞き取り調査を行い,種々の情報を得た。地域住民は,薬用植物,生薬の用法について豊富で独自の知識と経験を有していた。また,多くの人々は,今なお健康維持するために伝統医学を実践している。伝統医学はある地域では,予防目的や病気の治療に利用されており,生活の質の向上に役立っている。しかしながら,伝統医学をさらに研究し,臨床的評価や治験を行うには,それらの生薬の用法を規格化する必要がある。即ち,伝統医学をさらに広く発展させていくためには,各国において科学的評価,標準化,規制を強化させる必要がある。

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