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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 traditonal 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 relationship 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.)[a]

No	Local name	Scientific name	Family	Part used	Therapeutic Applications	Place*	TMPW No.
1	Bon-ma-ya-zar	*Rauwolfia serpentina Benth.*	Apocynaceae	Rhizome	Hypertension	Pi	22178
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	Yar-ke	*Sapium insigne*	Euphorbiaceae	Bark	Antinarcotics activity	TG	22181
5	Kyaik-hman	*Eclipta alba Hassk*	Compositae	Whole	Liver disease, menstrual disease. dysentery.	La	22182
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	La	22184
8	Phan-khar	*Terminialia chebula*	Combretaceae	Fruit	Tonic, diabetes	La	22185
9	Say-war-myit	*Berberis aristata DC.*	Berberidaceae	Roots	Liver disease	La	22186
10	Myin-khwa	*Hydrocotyle asiatica Linn.*	Umbelliferae	Whole	Kidney disease, hypotension, rheumatism.	La	22187

[a]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.)[a]

No	Local name	Scientific name	Family	Part used	Therapeutic Applications	Place*	TMPW No.
I. Cold, fever							
1	Bấc đèn	*Juncus effusus* L.	Juncaceae	Stems	Fever, urinary tract infection, inflammation	DL	22081
2	Bạc hà	*Mentha arvensis* L.	Lamiaceae	Leaves	Fever, headache	NT	22082
3	Bạc hà	*Mentha arvensis* L.	Lamiaceae	Leaves	Fever, headache	TH	22083
4	Bạc hà	*Mentha arvensis* L.	Lamiaceae	Leaves	Fever, headache	DL	22084
5	Bạch chi	*Angelica dahurica*	Umbeliferae	Roots	Fever, cold, rheumatism, inflammation	DL	22085
6	Cam thảo dây	*Abrus precatorius* L.	Fabaceae	Stems	Cough, fever.	TH	22086
7	Chi tử	*Gardenia jasminoides* Ellis	Rubiaceae	Fruits	Fever	NT	22087
8	Chi tử	*Gardenia jasminoides* Ellis	Rubiaceae	Fruits	Fever	TH	22088
9	Cỏ gấu	*Cyperus rotundus* L.	Cyperaceae	Roots	Headache, fever	TH	22089
10	Cỏ tranh	*Imperata cylindrica*	Poaceae	Rhizomes	Fever, urinary tract infection, hypertention	DL	22090
11	Củ ráy	*Alocassia macrorrhiza* Schott.	Araceae	Roots	Cold, fever, snake bite.	TH	22091
12	Cúc hoa	*Chrysanthemum sinense* Sabine.	Asteraceae	Flowers	Headache, fever	NT	22092
13	Dần xây	*Abutilon indicum* G. Don	Malvaceae	Whole plant	Fever, diuretic	NT	22093
14	Dần xây	*Abutilon indicum* G. Don	Malvaceae	Whole plant	Fever, diuretic	TH	22094
15	Dâu (vỏ)	*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	Du long thái	*Jussiacea repens* L.	Oenotheraceae	Whole plant	Fever	NT	22098

19	Đạm trúc diệp	*Lophatherum gracile*	Gramianeae	Whole plant	Fever, inflammation, urinary tract inflammation	DL	22099
20	Địa hoàng	*Rehmania glutinosa*	Scrophulariaceae	Roots	Fever, inflammation, menstrual disorder	DL	22100
21	Đinh lăng	*Polyscias fruticosa* Harms.	Araliaceae	Roots	Cough, fever	NT	22101
22	É trắng	*Ocimun basilicum* L.	Lamiaceae	Aerial part	Cold, fever, diuretic	TH	22102
23	Hương nhu	*Ocimum gratissimum* L.	Lamiaceae	Whole plant	Fever, headache	NT	22103
24	Hương nhu	*Ocimum gratissimum* L.	Lamiaceae	Whole plant	Fever, headache	TH	22104
25	Huyền sâm	*Scrophularia buergeriana* Miq.	Scrophulariaceae	Roots	Fever	NT	22105
26	Ké đầu ngựa	*Xanthium strumarium* L.	Asteraceae	Whole plant	Fever, rheumatism	DL	22106
27	Kim ngân	*Lonicera japonica*	Caprifoliaceae	Flowers	Fever, rheumatism	NT	22107
28	Kinh giới	*Schizonepeta tenuifolia* Briq.	Lamiaceae	Whole plant	Fever, headache, cough	NT	22108
29	Kinh giới nam	*Schizonepeta cristata Willd.*	Lamiaceae	Whole plant	Fever, headache, cough	TH	22109
30	Lá tre	*Bambusa* sp.	Gramineae	Leaves	Antibiotic, fever, inflammation	DL	22110
31	Mạn kinh tử	*Vitex trifolia* L.	Verbenaceae	Fruits	Fever, diuretic	DL	22111
32	Mạn kinh tử	*Vitex trifolia* L.	Verbenaceae	Fruits	Fever, diuretic	NT	22112
33	Mạn kinh tử	*Vitex trifolia* L.	Verbenaceae	Fruits	Fever, diuretic	TH	22113
34	Mộc hương	*Sanssurea lappa* Clarke	Asteraceae	Roots	Tonics, fever	NT	22114
35	Nam hậu phát	*Magnolia hypoleuca*	Magnoliaceae	Roots	Digestive disorder, fever, malaria	TH	22173
36	Nam hoắc hương	*Pogostemon parviflorus* Benth.	Lamiaceae	Aerial part	Cold, fever	TH	22116
37	Ngãi cứu	*Artemisia vulgaris* L.	Asteraceae	Aerial part	Antibiotic, fever, Menstual disorder	TH	22117
38	Ngưu bàng	*Aretium lappa* L.	Asteraceae	Fruits	Fever, rheumatism, digestive disorder	DL	22118
39	Nhân trần	*Andenosma capitatum* Benth.	Scrophulariaceae	Whole plant	Fever	NT	22119
40	Quán chúng	*Cyrtomium fortunei*	Polypodiaceae	Rhizomes	Fever, hypertension	DL	22120
41	Rau má	*Centella asiatica*	Umbelliferae	Whole plant	Fever, inflammation, leucorrhea	DL	22121
42	Sa sâm	*Launae pinnatifida* Cass.	Asteraceae	Roots	Cough, fever	NT	22122
43	Sắn dây	*Pueraria thomsoni* Benth.	Fabaceae	Roots	Fever, inflammation	DL	22123
44	Sen (hạt)	*Nelumbo nucifera*	Nelumbonaceae	Seeds	Digestive diseases, tonics	DL	22124
45	Sen (liên tâm)	*Nelumbo nucifera*	Nelumbonaceae	Filaments in	Fever, hypertension	DL	22125
46	Thạch hộc	*Dendrobium* sp.	Orchidaceae	Stems	Fever	NT	22126
47	Thạch hộc	*Dendrobium* sp.	Orchidaceae	Stems	Fever	DL	22127
48	Thảo quả	*Amomum tsao-ko* Crev. et Lem	Zingiberaceae	Fruits	Fever, headache	TH	22128
49	Thông thảo	*Tetrapanax papyrifera*	Araliaceae	Stems	Fever, galactopoetic	NT	22129
50	Thông thảo	*Tetrapanax papyrifera*	Araliaceae	Stems	Fever, galactopoetic	DL	22130
51	Thủy xương bồ	*Acorus calamus* L.	Araceae	Rhizomes	Diuretic, fever, cold	DL	22131
52	Tía tô	*Perilla ocymoides* L.	Lamiaceae	Leaves	Cough, fever	DL	22132
53	Tía tô	*Perilla ocymoides* L.	Lamiaceae	Leaves	Cough, fever	TH	22133
54	Trinh nữ hoàng cung	*Crinum asiaticum* L.	Amaryllidaceae	Whole plant	Anti-inflammation, fever	TH	22134
55	Từ bi	*Blumea balsamifera* DC.	Asteraceae	Leaves	Fever, cough	NT	22135
56	Từ bi	*Blumea balsamifera* DC.	Asteraceae	Leaves	Fever, cough	TH	22136

II. Rheumatism							
1	Bạch chỉ	*Angelica dahurica*	Umbeliferae	Roots	Fever, cold, rheumatism, inflammation	DL	22137
2	Cẩu tích	*Cibotium barometz*	Dicksoniaceae	Roots	Rheumatism	DL	22138
3	Dâu	*Morus alba* L.	Moraceae	Bark	Rheumatism, asthma	DL	22095
4	Dây tơ hồng	*Cuscuta chinensis* Lamm.	Cuscutaceae	Seeds	Rheumatism, impotence	TH	22140
5	Đại bi	*Blumea balsamifera* L.	Asteraceae	Whole plant	Rheumatism, inflammation, painful menses	DL	22177
6	Đậu săng (đậu chiều)	*Cajanus cajan* L.	Fabaceae	Seeds	Fever, rheumatism, cough	DL	22142
7	Địa liền	*Kaempfera galanga* L.	Zingiberaceae	Rhizomes	Rheumatism, cough	DL	22143
8	Độc hoạt	*Angelica tuhuo*	Umbelliferae	Roots	Rheumatism	DL	22144
9	Hồng thiên quì	*Begonia jimbrisitipalata* Hance.	Begoniaceae	Whole plant	Rheumatism, inflammation	DL	22145
10	Huyết đằng	*Sargentodoxa cuneata*	Sargentodoxceae	Stems	Menstruation disorder, rheumatism	DL	22146
11	Huyết giác	*Dracaena cambodiana*	Dracaenaceae	Stems	Congestion, rheumatism	DL	22147
12	Ké đầu ngựa	*Xanthium strumarium* L.	Asteraceae	Whole plant	Fever, rheumatism	TH	22148
13	Kim ngân	*Lonicera japonica*	Caprifoliaceae	Flowers	Fever, rheumatism	DL	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	DL	22118
16	Ngưu tất	*Achyranthes bidentata* Blume	Amaranthaceae	Roots	Rheumatism	NT	22152
17	Quế	*Cinnamomum cassia*	Lauraceae	Bark	Digestive diseases, rheumatism	DL	22153
18	Tam thất căn	*Polygonum cuspidatum* Sieb.	Polygonaceae	Rhizomes	Rheumatism, inflammation, hepatitis	DL	22167
19	Thiên niên kiện	*Homalomena aromatica*	Araceae	Roots	Rheumatism	NT	22155
20	Thiên niên kiện	*Homalomena aromatica*	Araceae	Roots	Rheumatism	TH	22156
III. Hepatitis							
1	Bồ 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	Cỏ 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	DL	22161
6	Dây chiều	*Tetracera scandens* L.	Dilleniaceae	Roots and stems	Inflammation, hepatitis	NT	22162
7	Địa đởm	*Elephantopus scaber* Linn.	Asteraceae	Whole plant	Inflammation, hepatitis, diarrhea	DL	22163
8	Kim biển bá	*Selaginella doederleinii* Hieron.	Selaginellaceae	Whole plant	Lung cancer, hepatitis	DL	22164
9	Mã đề	*Plantago asiatica*	Plantaginaceae	Aerial part	Urinary tract infection, inflammation, hepatitis	DL	22165
10	Nhân trần	*Andenosma capitatum* Benth.	Scrophulariaceae	Whole plant	Fever, hepatitis	NT	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	DL	22168
13	Thân canh thảo	*Lycopodium japonicum*	Lycopodiaceae	Whole plant	Urinary tract infection, hepatitis, inflammation	DL	22169
IV. Malaria							
1	Hậu phát nam	*Cinnamomum iners*	Lauraceae	Bark	Digestive disorder, fever, malaria	DL	22170
2	Hoàng đằng	*Fibraurea tinctoria* L.	Menispermaceae	Roots	Inflammation, diarrhea, malaria	DL	22171

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

[a]The 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 ℃), 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).

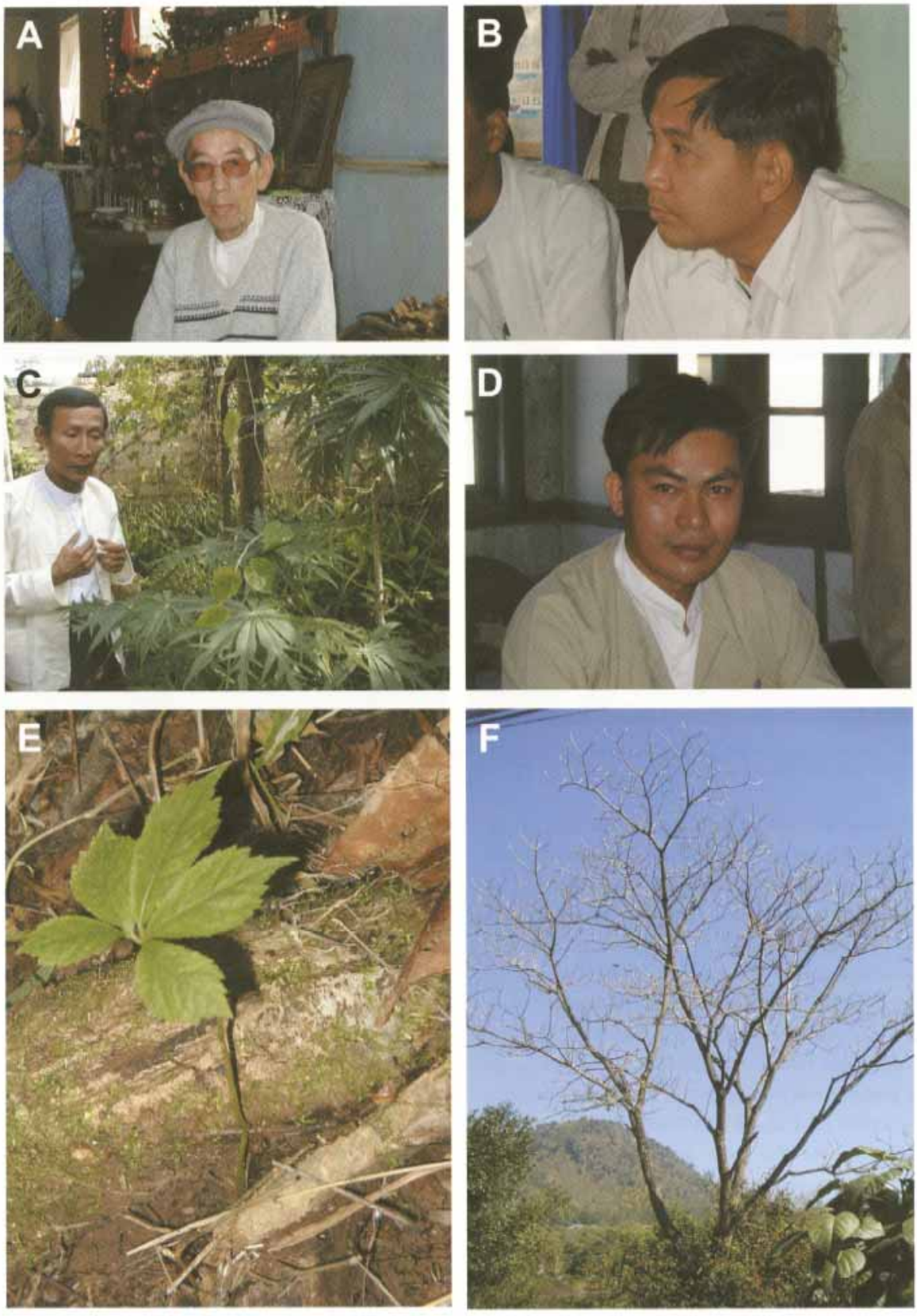

Fig. 1 (**A**) Mr. U Kan Htue (73 years old, Pindaya); (**B**) Mr. Saw Htwe Moe Aung (36 years old, Lashio); (**C**) Mr. U Thein Hlaing (48 years old, Lashio); (**D**) Mr. Sai Aung Kyi (38 years old, Kyauk Me); (**E**) Myanmar ginseng (*Panax zingiberensis*); (**F**) Yar-ke (*Sapium insigne*).

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.

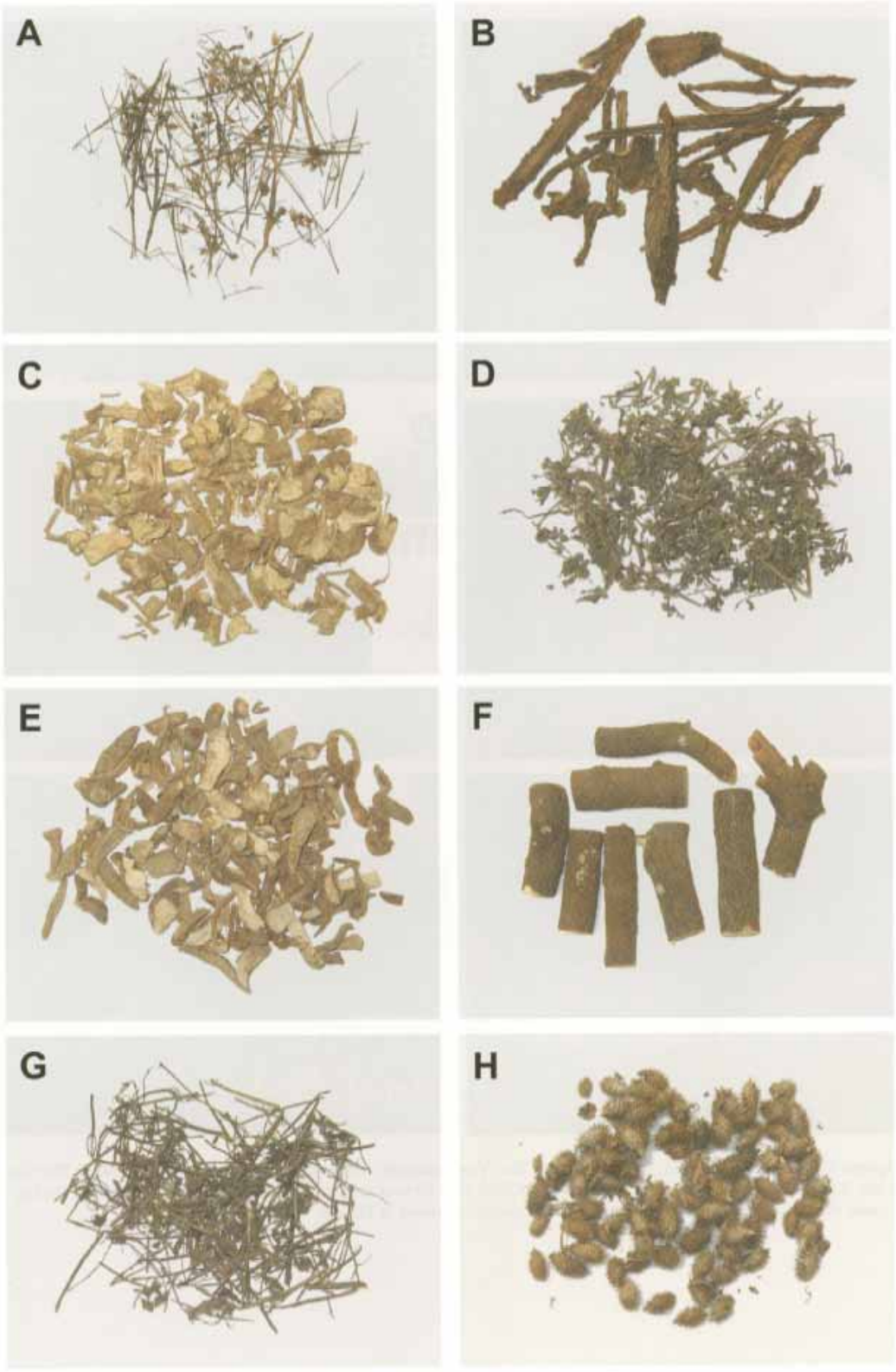
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Fig. 4 (**A**) *Andrographis paniculata*; collected in Pindaya; (**B**) *Tinospora* sp.; collected in Taunggyi; (**C**) *Berberis asiatica*; collected in Kyaukme; (**D**) *Eclipta alba*; collected in Lashio; (**E**) *Gloriosa superba*; collected in 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，フエ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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