



News Letter

## Investigation on traditional medicine at Phu Quoc Island and Ninh Thuan Province in Vietnam

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Vietnam is a tropical Southeast Asian country possessing a broad range of natural resources and a long history of a traditional medicine system. In this investigation report, we highlight the practice of traditional medicine and the use of herbal drugs to treat common diseases and report on interviews with local traditional medicine practitioners at Phu Quoc Island and Ninh Thuan Province in Vietnam. The results indicated that the Phu Quoc islanders possess abundant indigenous knowledge and experiences regarding the use of plants as herbal medicine along with a widespread myth that says the wild plants on the mountain in Phu Quoc Island are more therapeutically active than the plants of the garden. In Ninh Thuan Province, the Cham community possesses their own specific traditional medicine system and some medicinal plants used for the treatment of common diseases only exist with the Cham name. Therefore, taxonomical study, evaluation, standardization and regulation of medicinal plants must be enhanced in these places, in order to promote the scientific development of traditional medicine.

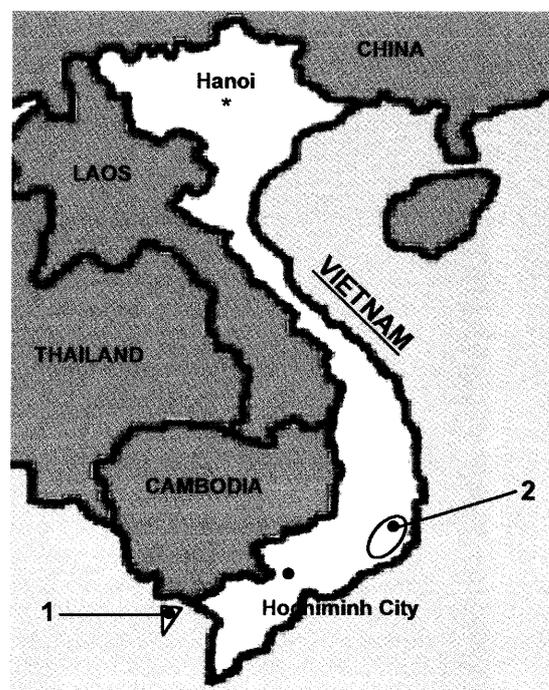
**Key words** traditional medicine, Phu Quoc, Ninh Thuan, Cham, Vietnam.

### Introduction

Vietnam is a Southeast Asian country having a long history of a traditional medicine system. The country is rich in diversified tropical flora and fauna and possesses a unique traditional medicine system. Since the birth of the Vietnamese nation, the people have developed their own traditional system of medicine, called "thuoc nam", literally meaning "Southern Medicine". However, the influence of other medicine systems such as the Chinese one known as "thuoc bac", meaning "Northern Medicine", Cham, Indian, can also be seen in the Vietnamese traditional medicine system used nowadays. Despite the widespread use of western medicine, the majority of the population has been relying on traditional medicine because of its low cost and availability. The curative outcome of traditional medicine, which has been proved through generations, becomes a crucial and important health care system in Vietnam.

In the course of our continued research on the Vietnamese traditional medicine system, during the last five years, we have visited and interviewed local traditional medicine practitioners in An Giang, Lam Dong, Khanh Hoa and Phu Yen provinces, and collected a wide range of Vietnamese traditional medicinal plants.<sup>1)</sup> Based on the information gathered from the practitioners, experiments have been conducted and chemical constituents as well as biological activities on those plants such as antiproliferative and xanthine oxidase inhibitors have been reported.<sup>2,3)</sup> In this new three-year project, we investigated the TM system and practices in Phu Quoc Island, a part of Kien Giang

province in the south of Vietnam, and Ninh Thuan Province located in the southern end of central Vietnam (Chart 1).



**Chart. 1** Map of study sites in Vietnam.  
 1. Phu Quoc Island (Kien Giang province)  
 2. Ninh Thuan province

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## Survey in Phu Quoc

Phu Quoc Island is the largest island in Vietnam, situated in the gulf of Thailand. Half of the island remains forested. It is famous for *Aquilaria crassna* (Thymelaeaceae) and *Piper nigrum* (Piperaceae). The former is a highly valuable plant, which produces the incense heartwood, well known as agarwood. We have investigated the plantation and cultivation together with the usage of this special product.<sup>4)</sup> The fruit of the latter is an exclusive strategic export line of the island and is used as a common spice as well as for the treatment of indigestion, diarrhea and cholera.

Phu Quoc has a tropical monsoon climate (average temperature ca. 27 °C) and an abundance of seafood. However, the diet rich in purine contents render the people in Phu Quoc Island apt to suffer from gout and rheumatism at a high extent.

On October 27<sup>th</sup> and 28<sup>th</sup>, 2004, we visited four traditional medicine practitioners in Phu Quoc Island. All of them inherited the knowledge of practice from their family, knowledge which has been passed down through the generations. They also obtained a formal license to practice after attending short courses in Traditional Medicine School in Kien Giang Province.

Mr. Pham Van Phong, a 40-year traditional medicine practitioner and priest in Hung Quoc Tu temple, Duong Dong town, reported that an average of 80 patients per day visits them. Most of them complain about rheumatism, gout, cold, fever, hepatitis B and C, and hypertension. They examine and treat the patients voluntarily, but may receive payment as a contribution. The staff in this center includes two practitioners and four assistants, all of whom inherited the practice from their family and are from Traditional Medicinal School. Mr. Phong reported that the medicinal plants in Phu Quoc Island could be divided into two types - wild and cultivated. All practitioners collect the indigenous medicinal plants on the island by themselves. It is believed that wild medicinal plants possess higher therapeutic activity compared to the cultivated one. This center uses about 100 medicinal plants, which were collected from the mountains of Phu Quoc Island. After collection, they are dried and stored in a sack or drawers for the use during the whole year. Moreover, Mr. Phong believes that the shape of each crude drug is related to their specific uses for the disease of body organ. For example, the Dragon fruit, *Hylocereus undulatus* (Cactaceae), which has a heart-shaped form is indicated to cure heart affections; the bean-form seeds of the same plant cures kidney diseases, and so on.

We visited another place in Duong Dong town, the Charity Health Center, which is equipped with an acupuncture facility. An average of forty patients usually visit this center per day, and the main diagnosed diseases are sciatica, gastric ulcer and stroke. Mrs. Do Thi Lan, a practitioner in charge of this center, said that they have around 80 crude drugs, which are collected from mountains and gardens. This center charges a fee but one small enough to be affordable.

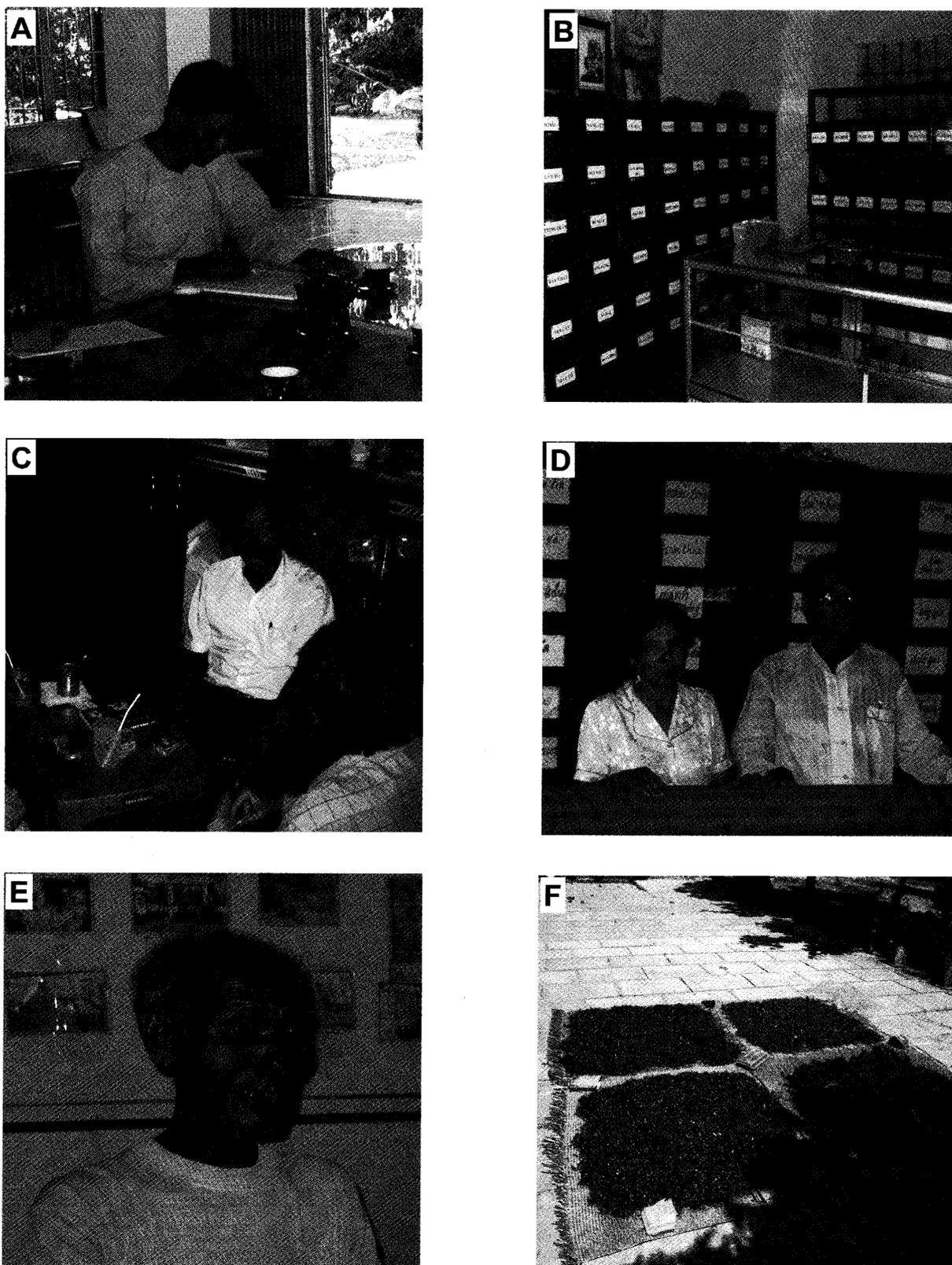
Mr. Tran Van An, 53 years old is a practitioner in An

Thoi town. He reported that he had 36 years of experience in traditional medicine practice. He was a practitioner at Rach Gia Township, Kien Giang Province, and went to Phu Quoc Island 5 years ago. Now he works in An Thoi Charity Health Center, treating and teaching traditional medicine. Forty to seventy patients come to this center daily. Most of them were found to be suffering from rheumatism, gout, diabetes, and women's diseases. He reported that he has several of his own formulations for the treatment of rheumatism, gout and diabetes. Every formulation includes the mixture of several crude drugs, but no more than 11 kinds. He uses the combinations of medicinal plants such as *Caesalpinia sappan* (Caesalpiniaceae), *Magnolia officinalis* (Magnoliaceae), *Loranthus parasiticus* (Loranthaceae), and *Drynaria quercifolia* (Polypodiaceae), and the proportion of ingredients in formula depends on the specific disease condition of each patient.

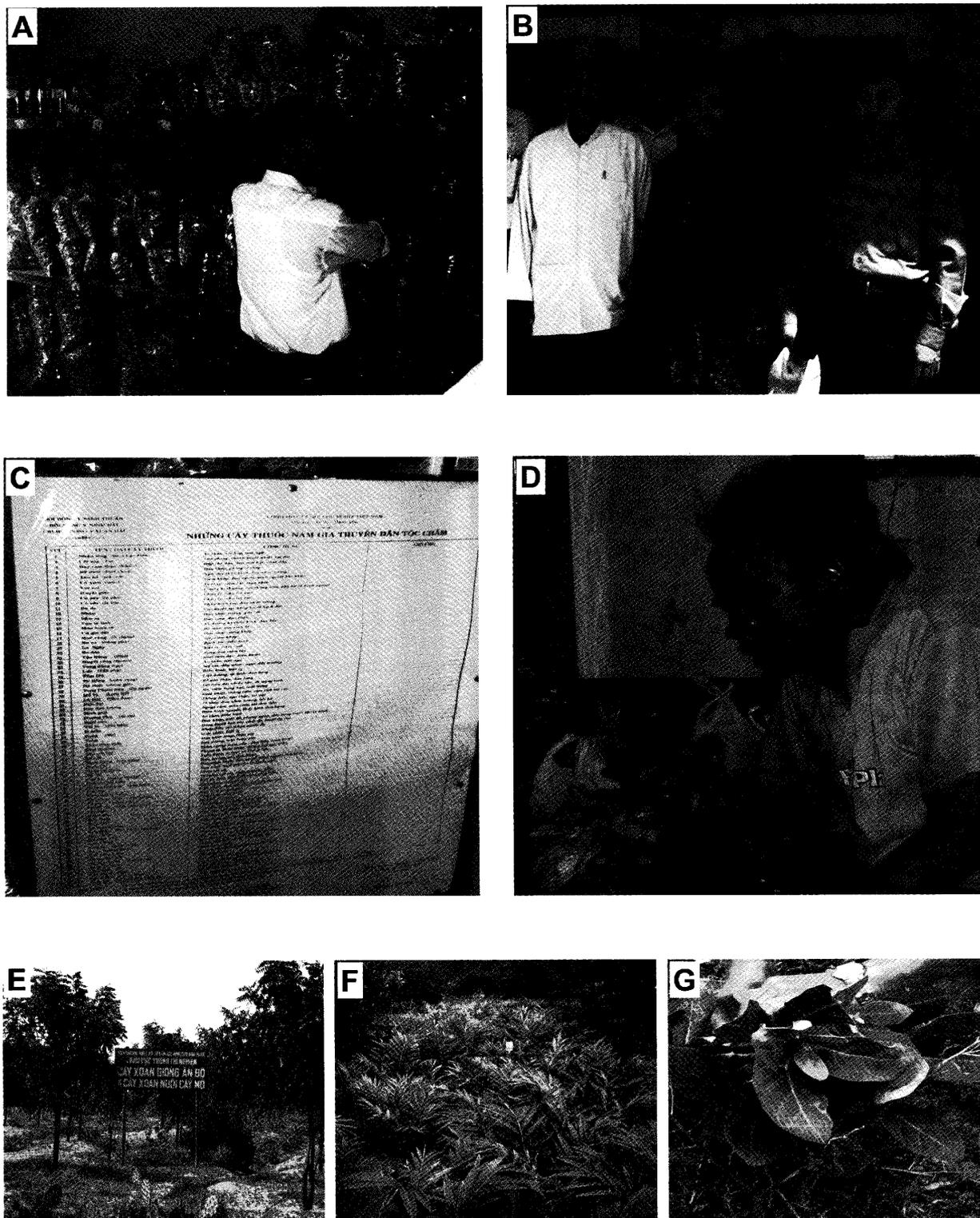
Mr. Nguyen The Hai (74 years old), a practitioner at Red Cross Center in Ganh Dau town, uses *Vitex negundo* (Verbenaceae), *Morinda citrifolia* (Rubiaceae), and *Leea rubra* (Leeaceae) for treatment of rheumatism or gout. He also uses combinations of several plants generally used for treatment of common diseases, for example, *Luffa cylindrica* (Cucurbitaceae) and *Caryota mitis* (Arecaceae) can treat spinalgia, while *Sargentodoxa cuneata* (Sargentodoxaceae) is used as a blood tonic; the expensive root of *Schefflera octophylla* (Araliaceae), known as Nam Ginseng, is used as a tonic. Mr. Hai, a graduate of Inorganic Chemistry, has also participated in a traditional medicine training course and obtained a formal license to practice from the Traditional Medicine School. Since the year 2000 he kept an up to date record of all the plants he prescribed and treatment formulae. This center is located inside Nguyen Trung Truc Memorial, a well-known historical place, which is visited by many tourists everyday. This center has 3 practitioners and 3 assistants. An average of 20 to 30 patients per day visit this center. Most of the them complain about rheumatism, cough, diabetes and hepatolipemia. About 200 kinds of crude drugs are available in this center. They are collected by volunteers and stored in big boxes (Figure 1).

## Survey in Ninh Thuan

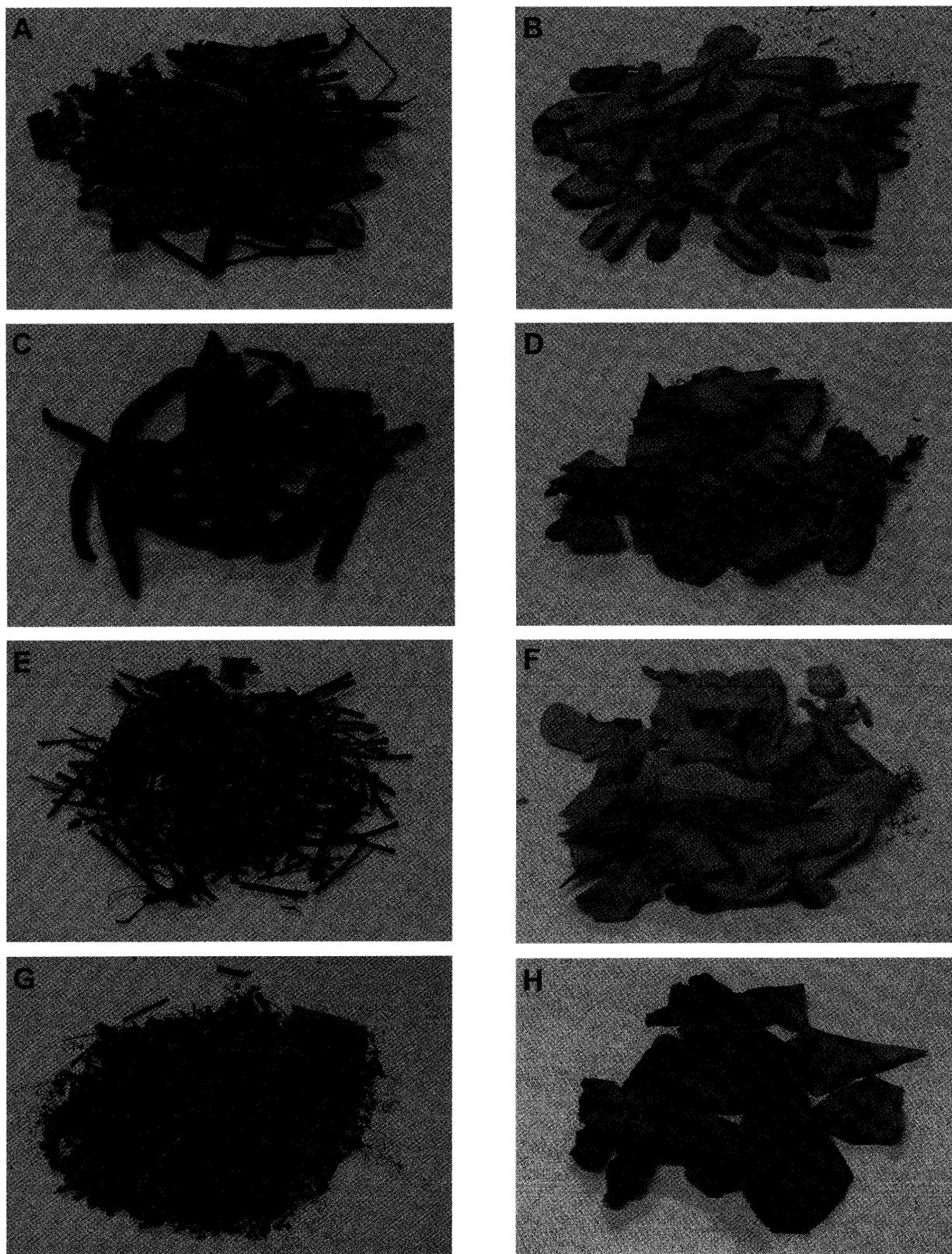
Ninh Thuan Province is characterized by a harsh climate and has a floristic composition of semi-arid zone, which mainly comprises the plants that can only survive in a water-deprived condition. Ninh Thuan is inhabited by a large number of Cham ethnic minority people (also known as Champa), descendents of the old Champa Kingdom (2<sup>nd</sup> century to 16<sup>th</sup> century). It was an important kingdom, connected by sea trade routes with India, China, Persia and Southeast Asian countries.<sup>8)</sup> The Cham derived their cultural influences from India, and the majority of them are Hindu; however, there are also significant Mahayana Buddhist and Islamic communities among the Cham population. They go to school with Kinh people - the major ethnic group in Vietnam - but live in their own community. According to medical practitioners, diseases such as rheumatism, gout,



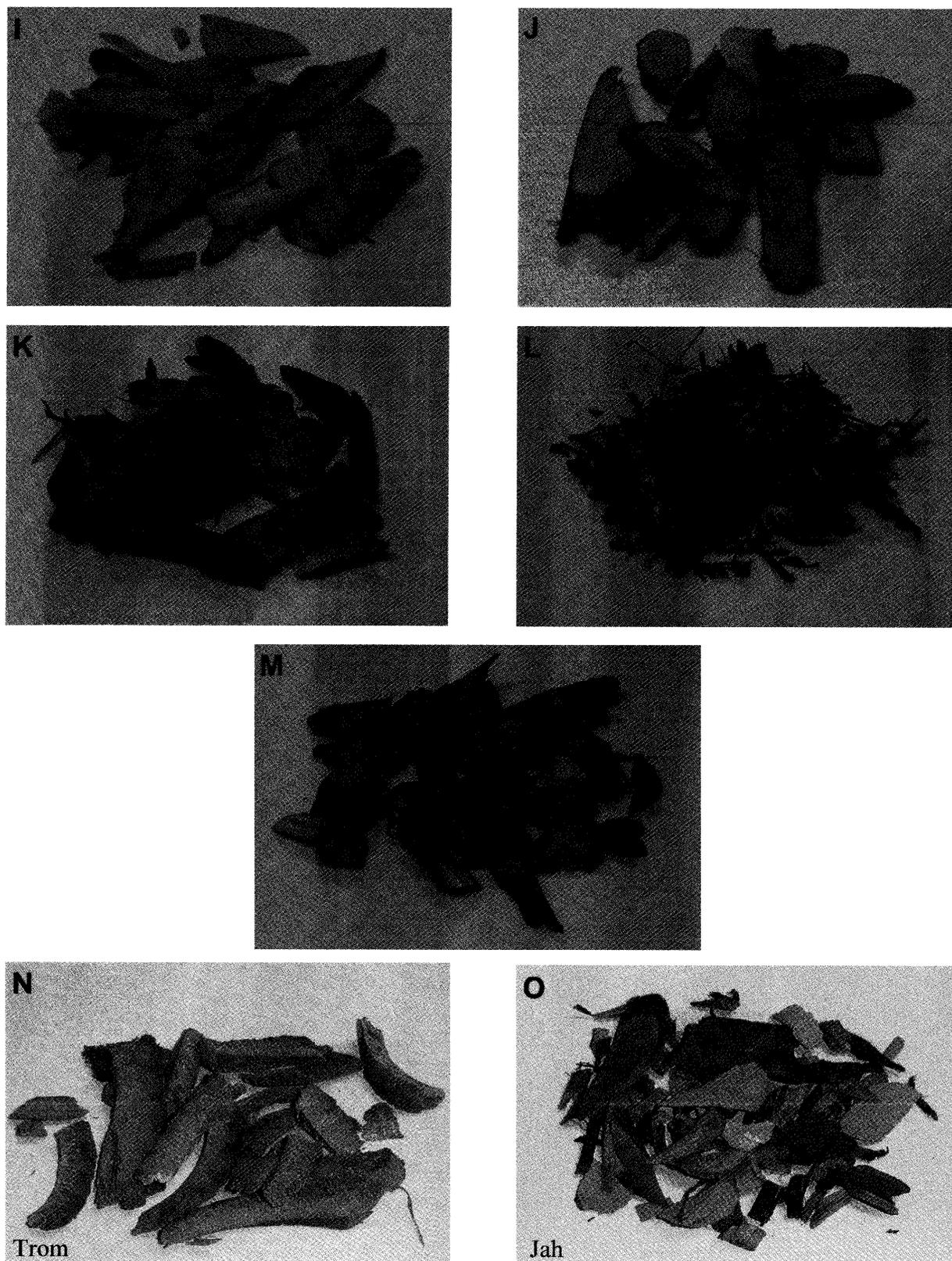
**Fig. 1** (A) Interview with Mr. Pham Van Phong in Hung Quoc Tu (40 years old, Duong Dong town, Phu Quoc island); (B) View of medicine store room in Hung Quoc Tu; (C) Interview with Mr. Tran Van An (53 years old, An Thoi town, Phu Quoc island); (D) Mrs. Do Thi Lan (55 years old, Duong Dong town, Phu Quoc island); (E) Mr. Nguyen The Hai (74 years old, Ganh Dau town, Phu Quoc island); (F) Chopped plants drying under sunlight in Nguyen Trung Truc Memorial.



**Fig. 2** (A) Mr. Thanh Ngoc Bich (51 years old, Ninh Hai district, Ninh Thuan province); (B) Mr. Thanh Ngoc Bich, his wife and survey commissioner (First row) in their house; (C) List of Cham traditional medicinal plants in Ninh Hai district; (D) Mr. Dan Nang Thanh (64 years old, Ninh Phuoc district, Ninh Thuan province); (E) Cultivated Neem-tree (*Azadirachta indica*) in Ninh Thuan province; (F) Cultivated Sa Nhan (*Amomum xanthioides*) in Ninh Thuan province; (G) Bon Bon (*Calotropis gigantea*) in Ninh Thuan province.



**Fig. 3a** Cham medicinal plants collected at Islamic village in Ninh Phuoc district, Ninh Thuan province.  
(A) *Abutilon indicum*; (B) *Aganonerion polymorphium*; (C) *Ficus glomerata*; (D) *Ficus macrophylla*; (E) *Limnocitrus littorale*; (F) *Mimosa pudica*; (G) *Momordica charantia*; (H) *Morinda citrifolia*.



**Fig. 3b** Cham medicinal plants collected at Islamic village in Ninh Phuoc district, Ninh Thuan province.  
(I) *Nervilia fordii*; (J) *Pandanus tectorius*; (K) *Pluchea pleropoda*; (L) *Tribulus terrestris*; (M) *Vitis flexuosa*; (N) *Trom*; (O) *Jah*.

kidney, breast cancer, diabetes, sciatica and women diseases prevailed in this province and Cham people use their own unique traditional medicine system. For foreigners and people outside the Cham community, contact is difficult. However, with the help of Ninh Thuan authorities, our study team was able to visit this province during Nov. 1<sup>st</sup> and 2<sup>nd</sup> 2004 and interviewed with some of the Cham medical practitioners. The Department of Science and Technology, Department of Health, and Institute of Traditional Medicine of Ninh Thuan Province supported the present investigation in this area.

According to Mr. Phong, Head of Ninh Thuan Department of Science and Technology, one of the interesting development strategies in this province is a large-scale cultivation of *Azadirachta indica* (Meliaceae), which is native to India and is well known as the neem tree. In this province, the neem tree has also been utilized to cover the infertile dry land. The tree has several traditional uses, such as to control domestic insects, crop pests, as well as to treat helminthiasis, catarrh, and skin diseases. The antidiabetic activity of the leaves and seeds of this plant are also reported.<sup>6,7)</sup> In addition, Mr. Tin, from Ninh Thuan Institute of Traditional Medicine showed us some wildy grown medicinal plants, characteristic of hot and dry climate of the province, such as: *Amomum xanthioides* (Zingiberaceae), used for the treatment of indigestion and a source of essential oil used in food and perfume industries; *Aloe vera* (Liliaceae), used in the beverage industry, treatment of skin disease and indigestion; *Strychnos nuxvomica* (Loganiaceae) for the treatment of paralysis; *Stephania rotunda* (Menispermaceae), for stomach illness; and *Phyllanthus urinaria* (Euphorbiaceae) for treatment of hepatitis.

The Islamic village in Ninh Hai district is inhabited by 1000 families. Mr. Thanh Ngoc Bich (51 years old), a TM practitioner owns the biggest traditional medicine shop in Ninh Hai district. He said that more than 60% Cham Muslims practice TM. The crude drugs and formulations from this village are also traded to other Southeast Asian countries such as Laos, Cambodia, and Thailand. Although the practitioners attended short training courses in Traditional Medicine School in Ninh Thuan Province to get a formal license, the preparation of formulations, patient diagnosis and treatment are based on their own experience. They have around 35 to 40 formulations; each includes 6 to 8 crude drugs. Almost all Cham people in this village can treat various diseases in their own way by using their indigenous formulations. According to him, with the use of Cham formulations, women can shorten their post-birth treatment and can work soon. Some medicinal plants only exist with the local Cham name such as "Jah" and "Trom" whose scientific identity is yet unknown. The Cham traditional medical service was previously available for their own community only, but now it has been extended to Kinh people living in the surrounding villages as well. Mr. Bich was much concerned about the continuity and inheritance of traditional medicine, since his children are not interested in this practice.

The Cham Hindu people are at Bau Truc village in

Ninh Phuoc district which is inhabited by more than 400 families, of which 85% produce traditional pottery. They rely mainly on the traditional medical doctor in the village for their health care. Mr. Dan Nang Thanh (64 yrs.), has 20 years of experience in traditional medicine practices, based on his own experience as well as the knowledge obtained from practitioners school. He uses around 60 crude drugs, almost all collected by himself from the mountains during the month of May, and from the seacoast. The drugs after collection are stored properly for use during the whole year. An average of 15 to 20 patients visit him everyday. Most of them complain about rheumatism, gout, breast cancer, diabetes, kidney, sciatica, fever, and hepatitis. He claimed that breast cancer and diabetes could be well cured by traditional medicine. For the former disease, the root of *Calotropis gigantean* (Asclepiadaceae) is first scorched, then ground in alcohol, and lastly pasted on the breast several times. It will dissolve the tumor slowly with the passage of time and no surgery is required, while the latter is treated by drinking the decoction of young leaves of *A. indica* for 10 days (Figures 2, 3a, 3b).

## Discussion

Crude drugs used for the treatment of common diseases are listed in Table 1, which were collected and compiled based on the information gathered during interviews with traditional medicine practitioners. Voucher samples of each of these crude drugs collected are preserved in the Museum for Materia Medica, Institute of Natural Medicine, University of Toyama, Japan. The table classifies the crude drugs based on its application to particular disease states such as cold/fever, rheumatism, hepatitis, hypertension, malaria, diabetes, cancer, etc. The highest number of crude drugs (113) was found to be used for cold and fever as mentioned in the table. Among them, only three plants are commonly found at both communities, Phu Quoc and Ninh Thuan.

Some of the crude drugs such as *Abrus precatorius*, *Morinda citrifolia*, *Adenosma caeruleum* are often used in formulae for treatment of cold and fever, while *Sauropus androgynus*, *Amaranthus spinosus*, *A. tricolor*, *Momordica charantia*, *Schizonepeta tenuifolia*, *Eryngium foetidum*, *Sargassum*, *Limnophila aromatica*, and *Perilla ocymoides* are also used as vegetables, available in private gardens.

A total of 25 crude drugs are used for the treatment of rheumatism and gout; the number of the crude drugs used in Phu Quoc is significantly higher than those used by Ninh Thuan practitioners (17 crude drugs in Phu Quoc, and 8 in Ninh Thuan), in which *Loranthus paraciticus*, *Smilax glabra* and *Heliotropium indicum* are well used anti-rheumatoid plants. Moreover, the wood of *Caesalpinia sappan* and the bark of *Morus alba* were found to inhibit xanthine oxidase, an enzyme that plays a crucial role in the development of gout, which was already reported.<sup>3)</sup>

For hepatitis, *Phyllanthus urinaria*, *Andenosma capitatum*, *Eclipta alba*, and *Durio zibethinus* are used by both Phu Quoc and Ninh Thuan medical practitioners,

**Table 1.** Vietnamese medicinal plants collected at Phu Quoc Island (Kien Giang Province) and Ninh Thuan Province, classified by main therapeutic use. Their Families, Parts Used, Local Names, Secondary Therapeutic Applications and Voucher Specimen Number (TMPW No.)<sup>a</sup>

No	Local name	Scientific name	Family	Part used	Other Applications	Place*	TMPW No.
<b>I. Cold, fever</b>							
1	Ba b nh	<i>Eurycoma longifolia</i> Jack	Simaroubaceae	Stem	Itch, dysentery, diuretic	PQ	24275
2	B c o u (nâu)	<i>Vernonia cinerea</i> (L.) Less	Asteraceae	Whole plant	Tonics, candidiasis	PQ	24276
3	B c h t t l é	<i>Tribulus terrestris</i> L.	Zygophyllaceae	Whole plant	Tonics, headache, dysentery	NT	24277
4	B c h x á kim	<i>Sterculia lychnophora</i>	Sterculiaceae	Whole plant	Tonics	NT	24278
5	B í k nam	<i>Hydnophytum formicarum</i> Jack.	Rubiaceae	Root	Tonics, kidney	PQ	24280
6	B í k nam	<i>Hydnophytum formicarum</i> Jack.	Rubiaceae	Root	Tonics, kidney	PQ	24281
7	B ình bát	<i>Annona glabra</i> L.	Annonaceae	Stem	Diarrhea, dysentery	PQ	24282
8	B ình vôi	<i>Stephania rotunda</i> Lour.	Menispermaceae	Root	Asthma, dysentery, fever	NT	24283
9	B b	<i>Adenosma capitatum</i> Benth.	Scrophulariaceae	Leaves	Malaria	PQ	24284
10	B òng bong	<i>Lygodium flexuosum</i> Sw.	Schizaceae	Whole plant	Urinary tract infection, lactagogue	PQ	24287
11	B ù ng ó t	<i>Sauropus androgynus</i> (L.) Merr.	Euphorbiaceae	Stem	Tonics	PQ	24288
12	B ù m s m	<i>Carmona microphylla</i> (Lam.) Don	Ehretiaceae	Whole plant	Stomachache, tonics	PQ	24289
13	B ù m s m	<i>Carmona microphylla</i> (Lam.) Don	Ehretiaceae	Whole plant	Backache, stomachache, cough	PQ	24290
14	C am ng	<i>Limnocyclus littorale</i> Sw.	Rutaceae	Root	Itch	NT	24291
15	C am th o	<i>Glycyrrhiza uralensis</i> Fish.	Fabaceae	Stem	Tonics	PQ	24292
16	C am th o ò t	<i>Abrus precatorius</i> L.	Fabaceae	Whole plant	Rash	PQ	24293
17	C am th o ò t	<i>Abrus precatorius</i> L.	Fabaceae	Whole plant	Rash	PQ	24294
18	C am th o d â y	<i>Abrus precatorius</i> L.	Fabaceae	Whole plant	Rash	PQ	24296
19	C am th o d â y	<i>Abrus precatorius</i> L.	Fabaceae	Whole plant	Rash	NT	24297
20	C am th o nam	<i>Scoparia dulcis</i> L.	Scrophulariaceae	Whole plant	Influenza, cough	PQ	24295
21	C át c ăn	<i>Pueraria thomsoni</i>	Fabaceae	Whole plant	Headache, dysentery	PQ	24298
22	C h án chim	<i>Schefflera octophylla</i> (Lour.) Harms.	Araliaceae	Stem	Urinary tract infection, tonics	PQ	24301
23	C h í ò c	<i>Sida acuta</i> Burm. f.	Malvaceae	Stem	Diuretic, digestive disorder	PQ	24305
24	C m ntr u	<i>Eleusine indica</i> (L.) Gaertn.	Poaceae	Whole plant	Headache	PQ	24306
25	C í xay	<i>Abutilon indicum</i> (L.) Sweet	Malvaceae	Whole plant	Diuretic, snake bite	PQ	24309
26	C ù è n	<i>Croton oblongifolius</i> Roxb.	Euphorbiaceae	Whole plant	Backache	PQ	24310
27	C ù è n	<i>Croton oblongifolius</i> Roxb.	Euphorbiaceae	Stem	Backache	PQ	24311
28	C mg o	<i>Camelia sinensis</i>	Theaceae	Stem	Cough	PQ	24312
29	D àng xay	<i>Abutilon indicum</i> L.	Malvaceae	Leaves	Diuretic, itch	NT	24314
30	D àng xay	<i>Abutilon indicum</i> L.	Malvaceae	Stem	Diuretic, itch	NT	24315
31	Dâu lá	<i>Folium Mori</i> .	Moraceae	Whole plant	Headache	PQ	24318

32	Đ u s ăng	<i>Cajanus indicus</i> Spreng	Fabaceae	Stem	Rheumatism, cough	PQ	24319
33	Đ ă y d ă n	<i>Aganoneiron polymorphium</i> Pierre ex Spire.	Apocynaceae	Stem	Tonics	NT	24323
34	Đ ă y g u i	<i>Seginella tamariscina</i>	Saginellaceae	Stem	Backache, kidney	PQ	24324
35	Đ ă y m u	<i>Bauhinia bracteata</i> (Benth.)	Fabaceae	Stem	Sciatica	PQ	24325
36	Đ ă y m ế	<i>Gynura sarmentosa</i>	Asteraceae	Stem	Hepatitis	PQ	24326
37	D ă n g a i	<i>Amaranthus spinosus</i> L.	Amaranthaceae	Whole plant	Tonics	PQ	24327
38	D ă n g a i	<i>Amaranthus spinosus</i> L.	Amaranthaceae	Whole plant	Tonics	PQ	24328
39	D ă n t ấ a	<i>Amaranthus tricolor</i> L.	Amaranthaceae	Whole plant	Candidiasis, itch	PQ	24329
40	Đ ỉ n t ấ m t h t	<i>Gynura pseudochina</i> DC.	Asteraceae	Root	Stomachache, kidney stone	NT	24330
41	Đ ỉ n h ầ n g	<i>Polyscias fruticosa</i> (L.) Harms.	Araliaceae	Whole plant	Tonics	PQ	24331
42	Đ ồ t r ồ n g	<i>Eucommia ulmoides</i> Oliv.	Eucommiaceae	Stem	Kidney disorders	PQ	24332
43	Đ ồ t r ồ n g	<i>Eucommia ulmoides</i> Oliv.	Eucommiaceae	Stem	Kidney disorders	PQ	24333
44	D ă c n	<i>Catharanthus roseus</i> G. Don.	Apocynaceae	Whole plant	Diabetes	PQ	24335
45	D ă d ỉ	<i>Pandanus tectorius</i> Sol.	Pandanaceae	Fruit	Urinary tract infection, kidney stone	PQ	24336
46	D ă g ầ	<i>Pandanus tectorius</i> Sol.	Pandanaceae	Stem	Urinary tract infection, kidney stone	PQ	24337
47	D ă r ồ n g	<i>Pandanus tectorius</i> Sol.	Pandanaceae	Stem	Diuretic, kidney stone	NT	24338
48	G m	<i>Gnetum scandens</i> Roxb.	Gnetaceae	Stem	Malaria	PQ	24339
49	H u p h ầ t	<i>Cinnamomum fortunei</i>	Lauraceae	Bark	Digestive disorder, constipation	PQ	24334
50	H u y t r ồ n g	<i>Spatholobus harmandii</i> Gagnep.	Fabaceae	Stem	Heart disease, tonics	PQ	24346
51	H u y t r ồ n g	<i>Spatholobus harmandii</i> Gagnep.	Fabaceae	Stem	Heart disease, tonics	PQ	24347
52	H u y t r ồ n g	<i>Spatholobus harmandii</i> Gagnep.	Fabaceae	Stem	Heart disease, tonics	PQ	24348
53	Ỉ c h m u	<i>Leonurus heterophyllus</i> Sw.	Lamiaceae	Whole plant	Menstrual disorder	PQ	24351
54	J ầ t h			Root	Tonics	NT	24286
55	K ế r ồ n g	<i>Sida cordifolia</i>	Malvaceae	Stem	Itch, tonics	PQ	24352
56	K ề o	<i>Acacia farnesiana</i> Willd.	Mimosaceae	Root	Tonics	NT	24353
57	K h q u a	<i>Momordica charantia</i> L.	Cucurbitaceae	Whole plant	Urinary tract infection, dysentery	PQ	24354
58	K h q u a	<i>Momordica charantia</i> L.	Cucurbitaceae	Whole plant	Cough	NT	24355
59	K ỉ m t ỉ n t h o	<i>Desmodium styracifolium</i> (Osbeck) Merr.	Fabaceae	Whole plant	Urinary tract infection, kidney stone	PQ	24356
60	K ỉ n h g ỉ i	<i>Schizonepeta tenuifolia</i> Briq.	Lamiaceae	Whole plant	Dysentery, headache	PQ	24357
61	K ỉ n h g ỉ i n ầ m	<i>Elsholtzia cristata</i>	Lamiaceae	Whole plant	Dysentery, headache	PQ	24359
62	L ồ n g v ầ n g	<i>Combretum latifolium</i> Blume	Combretaceae	Stem	Tonics	PQ	24361
63	L ồ n g v ầ n g	<i>Combretum latifolium</i> Blume	Combretaceae	Stem	Backache, kidney	PQ	24362
64	L b n	<i>Rhoeo discolor</i> (L'Herit) Hance.	Commelinaceae	Leaves	Cough	PQ	24363
65	L c	<i>Pluchea pleropoda</i> Hemsl.	Asteraceae	Stem	Headache	NT	24364
66	M ầ t ỉ n	<i>Strynos max-vomica</i>	Loganiaceae	Seed	Itch, heart disease	NT	24366

67	M n t r u	<i>Eleusine indica</i> (L.) Gaertn.	Poaceae	Whole plant	Malaria, hypertension	PQ	24374
68	Miá lau	<i>Sacharum sinensis</i> Roxb.	Poaceae	Stem	Urinary tract infection	PQ	24376
69	Mu ng	<i>Cassia alata</i>	Caesalpinaceae	Stem	Constipation	PQ	24377
70	M p gai	<i>Luffa cylindrica</i> (L.) Roem.	Cucurbitaceae	Whole plant	Cough, inflammation	PQ	24378
71	Ngò gai	<i>Eryngium foetidum</i> L.	Apiaceae	Leaves	Rash, cough	PQ	24380
72	Ng gia bì	<i>Acanthopanax aculeatus</i> Seem.	Araliaceae	Stem	Tonics	PQ	24381
73	Ng tr o	<i>Vitex negundo</i> L.	Verbenaceae	Stem	Rheumatism, influenza	PQ	24382
74	Ng tr o	<i>Vitex negundo</i> L.	Verbenaceae	Stem	Tonics	PQ	24383
75	Nhân l ng	<i>Passiflora foetida</i> L.	Passifloraceae	Whole plant	Tonics	PQ	24385
76	Nhân l ng	<i>Passiflora foetida</i> L.	Passifloraceae	Whole plant	Tonics	PQ	24386
77	Nhân tr n	<i>Adenosma caeruleum</i> R.Br	Scrophulariaceae	Whole plant	Hepatitis	PQ	24387
78	Nhàu	<i>Morinda citrifolia</i> L.	Rubiaceae	Stem	Tonics	PQ	24390
79	Nhàu	<i>Morinda citrifolia</i> L.	Rubiaceae	Stem	Hypertension, diabetes, rheumatism	PQ	24391
80	Nhàu	<i>Morinda citrifolia</i> L.	Rubiaceae	Stem	Hypertension, diabetes, rheumatism	NT	24392
81	Nhàu	<i>Morinda citrifolia</i> L.	Rubiaceae	Fruit	Hypertension, diabetes, rheumatism	NT	24394
82	Nhàu r ng	<i>Morinda citrifolia</i> L.	Rubiaceae	Stem	Tonics	PQ	24395
83	Niút nác	<i>Oroxylum indicum</i> (L.) Kurz.	Bignoniaceae	Stem	Cough, stomachache, itch	PQ	24397
84	Ó d c	<i>Lindera myrrha</i> (Lour.) Merr.	Lauraceae	Stem	Urinary tract infection	PQ	24398
85	Ph c linh	<i>Poria cocos</i> Wolf.	Polyporaceae	Whole plant	Urinary tract infection, tonics	PQ	24399
86	Quao	<i>Stereospermum colais</i> Mabb.	Bignoniaceae	Stem	Influenza	PQ	24400
87	Qu khâu	<i>Cinnamomum zeylanicum</i>	Lauraceae	Stem	Digestive disorder	PQ	24401
88	Qu tân	<i>Cinnamomum zeylanicum</i>	Lauraceae	Stem	Digestive disorder	PQ	24402
89	Ráng bay	<i>Drynaria quercifolia</i> (L.) J.Sm.	Polypodiaceae	Stem	Urinary tract infection, edema	PQ	24444
90	Rau m	<i>Sargassum</i>	Sargassaceae	Whole plant	Constipation	PQ	24403
91	Rau om	<i>Limnophila aromatica</i> (Lamk.) Merr.	Scrophulariaceae	Whole plant	Cough, rash	PQ	24405
92	R tranh	<i>Imperata cylindrica</i> Beauv.	Poaceae	Root	Urinary tract infection	PQ	24407
93	Sa nhán	<i>Amomum xanthioides</i> Wall.	Zingiberaceae	Seed	Digestive disorder, dysentery	NT	24408
94	Săng cầy	<i>Canjanus indicus</i>	Fabaceae	Stem	Rash, stomachache, influenza	PQ	24409
95	S u riêng	<i>Durio zibethinus</i> Murray.	Bombacaceae	Root, skin	Hepatitis	NT	24410
96	S n ng	<i>Melia azadirach</i> L.	Meliaceae	Stem	Stomachache, digestive disorder	PQ	24411
97	Sung	<i>Ficus glomerata</i> Roxb.	Moraceae	Bark	Headache	NT	24412
98	Th n thông	<i>Tinospora cordifolia</i> Miers.	Menispermaceae	Stem	Malaria	PQ	24414
99	Th n x	<i>Luvunga nitida</i> Pierre.	Rutaceae	Stem	Backache	PQ	24416
100	Thánh thiên x	<i>Nervilia fordii</i> (Hance) Schltr.	Orchidaceae	Root	Cough, menstrual disorder, itch	NT	24417
101	Th m c	<i>Inula helenium</i> L.	Asteraceae	Root		NT	24418

102	Thù lù	<i>Solanum nigrum</i> L.	Solanaceae	Whole plant	Itch, urinary tract infection	PQ	24420
103	Tía tó	<i>Perilla ocyroides</i> L.	Lamiaceae	Whole plant	Influenza	PQ	24421
104	Trang tr ng	<i>Ixora nigricans</i> R.Br.ex Wight et Arn	Rubiaceae	Leaves	Cough, candidiasis, constipation	PQ	24425
105	Trâu c	<i>Ficus pumila</i> L.	Moraceae	Stem	Lactagogue, kidney disorders	PQ	24426
106	Trinh n hoàng cung	<i>Crinum asiaticum</i> L.	Amaryllidaceae	Leaves	Inflammation	NT	24427
107	Trôm <sup>p</sup>			Bark		NT	24447
108	T qui	<i>Lantana camara</i> L.	Verbenaceae	Whole plant	Cough, lung diseases	NT	24431
109	Vàng xây	<i>Cnidium monnieri</i> L.	Umbelliferae	Stem	Candidiasis	PQ	24432
110	V s u riêng	<i>Durio zibethinus</i> Murray.	Bombaceae	Skin	Hepatitis	PQ	24434
111	Xá x	<i>Cinnamomum parthenoxylon</i> Meissn.	Lauraceae	Stem	Digestive disorder	PQ	24440
112	Xôi riêng	<i>Durio zibethinus</i> Murray.	Bombaceae	Skin	Digestive disorder	PQ	24442
113	Xuyên tâm th t	<i>Panax pseudo-ginseng</i> Wall.	Araliaceae	Root	Tonics, dysentery	NT	24443
<b>II. Rheumatism</b>							
1	Bí bãi	<i>Evodia lepta</i> (Spreng) Merr.	Rutaceae	Whole plant		PQ	24279
2	Chan chan	<i>Nieburhia stamensis</i> Kurz.	Capparidaceae	Stem		NT	24300
3	Chân chim	<i>Schefflera octophylla</i> (Lour.) Harms.	Araliaceae	Stem		PQ	24302
4	Cù ền	<i>Croton oblongifolius</i> Roxb.	Euphorbiaceae	Stem	Backache, hepatitis	PQ	24310
5	Dâu	<i>Morus alba</i> L.	Moraceae	Stem	Asthma	PQ	24316
6	Dâu cay	<i>Morus alba</i> L.	Moraceae	Stem	Stomachache, rash	PQ	24317
7	Đ u sãng	<i>Cajanus indicus</i> Spreng	Fabaceae	Stem	Fever, cough	PQ	24319
8	G i h t	<i>Leea rubra</i> Blume	Leeaceae	Stem	Menstrual disorder	PQ	24341
9	Hoàn ng c	<i>Pseuderanthemum palatifolium</i> Radlk.	Asteraceae	Whole plant	Stomachache	PQ	24344
10	Hoàn ng c	<i>Pseuderanthemum palatifolium</i> Radlk.	Asteraceae	Whole plant	Stomachache	PQ	24345
11	Kinh gi i	<i>Schizonepeta tenuifolia</i> Briq.	Lamiaceae	Whole plant	Digestive disorder	PQ	24358
12	L c cây	<i>Pluchea pleropoda</i> Hemsl.	Asteraceae	Stem	Tonics	PQ	24365
13	N m linh chi	<i>Ganoderma lucidum</i>	Ganodermataceae	Whole plant	Hepatitis, tonics	NT	24379
14	Ng tr o	<i>Vitex negundo</i> L.	Verbenaceae	Stem	Influenza	PQ	24383
15	Ng tr o	<i>Vitex negundo</i> L.	Verbenaceae	Stem	Influenza, cold	PQ	24384
16	Nhàu	<i>Morinda citrifolia</i> L.	Rubiaceae	Root	Hypertensive	NT	24394
17	Nhàu	<i>Morinda citrifolia</i> L.	Rubiaceae	Fruit	Fever, hypertension, diabetes	NT	24393
18	Nho r ng	<i>Vitis flexuosa</i> Thumb.	Vitaceae	Stem	Hepatitis	NT	24396
19	Tang ký sanh	<i>Loranthus parviflorus</i> (L.) Merr.	Loranthaceae	Whole plant	Backache, lactagogue	PQ	24413
20	Th ph c linh	<i>Smilax glabra</i> Roxb.	Liliaceae	Root	Inflammation	NT	24419
21	Tô m c	<i>Caesalpinia sappan</i> L.	Caesalpinaceae	Wood	Inflammation	NT	24422
22	Tra cây	<i>Crataegus pinnatifida</i> Bunge.	Rosaceae	Stem	Constipation	PQ	24423

23	Trung quân	<i>Ancistrocladus tectorius</i> (Lour.) Merr.	Ancistrocladaceae	Stem		PQ	24428
24	Trung quân	<i>Ancistrocladus tectorius</i> Merr.	Ancistrocladaceae	Stem		PQ	24429
25	T b ch long	<i>Helminthostachys zeylanica</i>	Ophioglossaceae	Whole plant		NT	24430
26	Vòi voi	<i>Heliotropium indicum</i> L.	Boraginaceae	Whole plant	Influenza	PQ	24435
27	Vong nem	<i>Erythrina orientalis</i> (L.) Murr	Fabaceae	Stem		PQ	24436
28	Vong nem	<i>Erythrina indica</i>	Fabaceae	Stem		PQ	24437
29	Vông nem	<i>Erythrina orientalis</i> (L.) Murr	Fabaceae	Stem		PQ	24438
30	Vú bò	<i>Ficus heterophyllus</i> L.	Moraceae	Stem	Backache	NT	24439
31	Xích qu	<i>Gymnopetalum cochinchinense</i> (Lour.) Kurz.	Cucurbitaceae	Whole plant	Menstrual disorder, malaria	PQ	24441
<b>III. Hepatitis</b>							
1	B b	<i>Adenosma capitatum</i> Benth.	Scrophulariaceae	Leaves	Urinary tract infection, fever	PQ	24284
2	Chó đ	<i>Phyllanthus urinaria</i> L.	Euphorbiaceae	Whole plant	Inflammation, snake bite	PQ	24303
3	Chó đ	<i>Phyllanthus niruri</i>	Euphorbiaceae	Whole plant		NT	24304
4	C m c	<i>Eclipta alba</i> Hassk	Asteraceae	Whole plant	Inflammation	PQ	24307
5	C m c	<i>Eclipta alba</i> Hassk.	Asteraceae	Whole plant	Inflammation	NT	24308
6	Cù èn	<i>Croton oblongifolius</i> Roxb.	Euphorbiaceae	Stem	Rheumatism, backache	PQ	24310
7	Đa đ	<i>Ficus macrophylla</i> Desf.	Moraceae	Root		NT	24313
8	Dây chi u	<i>Tetracera scandens</i> L.	Dilleniaceae	Stem	Inflammation	PQ	24320
9	Dây mé	<i>Gynura sarmientosa</i>	Asteraceae	Stem	Fever	PQ	24326
10	Màn ri	<i>Polanisia chelidonii</i> A.DC.	Capparaceae	Whole plant	Headache, snake bite	PQ	24371
11	Màn ri	<i>Polanisia chelidonii</i> A.DC	Capparaceae	Whole plant	Headache, snake bite	PQ	24372
12	N m linh chi	<i>Ganoderma lucidum</i>	Ganodermataceae	Whole plant	Tonics, rheumatism	NT	24379
13	Nhân tr n	<i>Adenosma caeruleum</i> R.Br	Scrophulariaceae	Whole plant		PQ	24387
14	Nhân tr n	<i>Adenosma caeruleum</i> R.br	Scrophulariaceae	Whole plant		PQ	24388
15	Nhân tr n	<i>Adenosma caeruleum</i> R.Br	Scrophulariaceae	Whole plant	Fever	PQ	24289
16	Nho r ng	<i>Vitis flexuosa</i> Thumb.	Vitaceae	Stem	Rheumatism	NT	24396
17	Rau ng	<i>Enhydra fluctuans</i> Lour.	Asteraceae	Whole plant	Stomachache, cough	PQ	24404
18	S u riêng	<i>Durio zibethinus</i> Murray.	Bombacaceae	Root, skin	Fever	NT	24410
19	V s u riêng	<i>Durio zibethinus</i> Murray.	Bombacaceae	Skin	Fever	PQ	24434
<b>IV. Hypertension</b>							
1	Cầu đ ng	<i>Uncaria rhynchophylla</i> (Miq) Jack	Rubiaceae	Stem		PQ	24299
2	Đ tr ng nam	<i>Parameria laevigata</i> Moldenke.	Apocynaceae	Stem	Diuretic	PQ	24334
3	Gu i đ	<i>Sagmella tamariscina</i>	Saginellaceae	Stem		PQ	24342
4	Huyền bá	<i>Nauclea officinalis</i> (Pit.) Merr.	Rubiaceae	Stem		PQ	24349
5	Huyền bá	<i>Nauclea officinalis</i> (Pit.) Merr.	Rubiaceae	Stem		PQ	24350

6	M c c	<i>Mimosa pudica</i> L.	Mimosaceae	Whole plant	Rash	PQ	24367
7	M c c	<i>Mimosa pudica</i> L.	Mimosaceae	Whole plant		PQ	24368
8	M c c	<i>Mimosa pudica</i> L.	Mimosaceae	Whole plant		NT	24369
9	M c c gai	<i>Mimosa pudica</i> L.	Mimosaceae	Whole plant		PQ	24370
10	M n tr u	<i>Eleusine indica</i> (L.) Gaertn.	Poaceae	Whole plant	Malaria, fever	PQ	24374
11	Nhàu	<i>Morinda citrifolia</i> L.	Rubiaceae	Fruit	Fever, diabetes, rheumatism	NT	24394
12	Nhàu	<i>Morinda citrifolia</i> L.	Rubiaceae	Root	Rheumatism	NT	24393
<b>V. Malaria</b>							
1	B b	<i>Adenosma capitatum</i> Benth.	Scrophulariaceae	Leaves	Cold, fever	PQ	24284
2	Dây cóc	<i>Tinospora crispa</i> (L.) Miers.	Menispermaceae	Whole plant		PQ	24321
3	Dây cóc	<i>Tinospora crispa</i> (L.) Miers.	Menispermaceae	Whole plant		PQ	24322
4	G m	<i>Gnetum scandens</i> Roxb.	Gnetaceae	Stem	Fever	PQ	24339
5	G m đen	<i>Gnetum scandens</i> Roxb.	Gnetaceae	Stem	Inflammation	PQ	24340
6	Màn ri	<i>Polanisia chelidonii</i> A.DC	Capparaceae	Whole plant	Headache, sinusitis	NT	24373
7	M n tr u	<i>Eleusine indica</i> (L.) Gaertn.	Poaceae	Whole plant	Hypertension, fever	PQ	24374
8	Th n thông	<i>Tinospora cordifolia</i> Miers.	Menispermaceae	Stem	Influenza	PQ	24414
9	Th n thông	<i>Tinospora cordifolia</i> Miers.	Menispermaceae	Stem	Fever	PQ	24415
10	Tr n bi	<i>Citrus deliciosa</i> Tenore.	Rutaceae	Skin	Digestive disorder, tonsillitis	NT	24424
<b>IV. Diabetes</b>							
1	D a c n	<i>Catharanthus roseus</i> G. Don.	Apocynaceae	Whole plant	Fever, lung cancer	PQ	24336
2	Lá neem	<i>Azadirachta indica</i> A. Juss.	Meliaceae	Leaves		NT	24360
3	Mãng c c	<i>Garcinia mangostana</i> L.	Guttiferae	Skin	Dysentery, stomachache	PQ	24375
4	Nhàu	<i>Morinda citrifolia</i> L.	Rubiaceae	Fruit	Fever, hypertension, rheumatism	NT	24394
5	Vỏ măng c t	<i>Garcinia mangostana</i> L.	Guttiferae	Skin	Diarrhea, dysentery	PQ	24433
<b>IV. Cancer</b>							
1	B n b n	<i>Calotropis gigantea</i> R. Br.	Asclepiadaceae	Root	Breast cancer	NT	24406
2	D a c n	<i>Catharanthus roseus</i> G. Don.	Apocynaceae	Whole plant	Fever, diabetes, lung cancer	PQ	24335

<sup>a</sup>The plants were identified by Prof. Le Cong Kiet (Department of Botany, National University - Hochiminh City, Hochiminh City, Vietnam).

\* PQ: Phu Quoc; NT: Ninh Thuan

<sup>b</sup>Under taxonomic study, only in local (Cham language) name

which were also told to be effective when used alone against jaundice and viral hepatitis. Among the 12 crude drugs used for hypertension (Table 1), a formula using the bark of *Uncaria rhynchophylla* with roots and fruits of *Morinda citrifolia* are commonly used. Furthermore, other formulae based on roots and fruits of this plant are used to treat rheumatism, diabetes, digestive disorders, etc.

Among the medicinal plants used to treat malaria, two plants with the same genus, *Tinospora crispa* and *T. cordifolia*, were proved to be potent as told by traditional medicine practitioners.

Five crude drugs for diabetes and two for general treatment of cancer are listed in Table 1. The young leaves of *A. indica* are the main choice of practitioners for the treatment of diabetes. The plant *Catharanthus roseus* (Apocynaceae) is used for lung cancer and respiratory tract diseases, and the aforementioned root of *C. gigantean* is for treatment of breast cancer.

### Conclusion

The Vietnamese traditional medicine system plays an important role in all the communities around the country. Due to its accessibility, availability of raw materials, and the total belief of patients in the practice, all people respect the traditional medicine practitioners and follow their orientation and treatment. In fact, the traditional medicine is an integral part of the national health care system in Vietnam since 1945. The Cham communities in Vietnam still maintain their traditional knowledge. The traditional medicine practiced by the Cham community are not only specific to Cham society but also contributes significantly to the national health care system. However, to ratify the effective application of these medicinal plants, a scientific approach by taxonomic and phytochemical study is necessary.

Vietnamese traditional medicine system is based on experiences through thousands of years with various medicinal plant resources, having claimed to have a close relationship with Chinese traditional medicine in many aspects, including theory and philosophy. However, Chinese traditional medicine when approached to Vietnam, got molded into the Vietnamese life style and culture. Thus, Vietnamese traditional medicine has grown up as a unique combination of both Chinese and the native medicinal system. The most striking aspect of Vietnamese traditional medicine, referred to as South medicine, has been documented in a book written in the early 17<sup>th</sup> century by Dr. Tue Tinh (1623-1713), the pioneer of Vietnamese traditional medicine, who stated that "South medicine is for South people".

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### Japanese abstract

伝統薬物は人類の文化に不可欠な部分であり、先進国においても、プライマリー・ヘルスケアとして広く利用されている。ミャンマーでは豊かな伝統医学の知識が継承され、今なお植物を医薬として利用している。しかしながら、ミャンマーの多くの地域ではそのような知識や技術が急速な変化に直面しており、伝統医師の持っている医学的知識や薬用植物に関する知見が急速に失われつつある。そのため、伝統医薬に関する重要な知識源および薬用植物の多様性を保護するために迅速な措置をとることが重要である。本論文ではミャンマーの伝統医師に直接聞き取り調査を実施し、治療に成功した症例や、所有している薬用植物とその使用方法、処方などの伝統医療知識に関する情報を明らかにした。

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