

Translation of Lanna Medicinal-Plant Recipes for Research and Development of Modern Pharmaceuticals and the Understanding of the Lanna Thai Cultures/Histories

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ABSTRACT

*The objectives of this study were to screen and translate Lanna medicinal-plant recipes for research and development of modern pharmaceuticals and the understanding of the Lanna Thai cultures and histories. A number of 292 copies of the old Lanna medicinal-plant recipes was surveyed and collected from 8 provinces of the Lanna region (Chiang Mai, Chiang Rai, Lamphun, Lamphun, Payao, Phrae, Nan and Mae Hong Son), Thailand. These recipes were written in Lanna script on dried palm leaves, mulberry-pulp paper or Streblus asper books. The 3 most reliable and complete recipes from each province were selected and translated into Thai. The translation comprised of 2 steps, first, Lanna to Thai (Lanna meaning) and second, Thai to the common understandable Thai. From the selected 21 copies from 8 provinces, 10,974 formulae, 2,786 Lanna plants and diseases were found. The medicinal plants appeared in the recipes and the chemical constituents were collected, prepared and arranged as scientific monographs. Therapeutic indications appeared in Lanna recipes were also included. For example, a recipe from Chiang Mai province contained 1,344 formulae. The medicinal plant which appeared in high frequency of 103 formulae was Oi Dang (*Saccharum officinarum* Linn.), family GRAMINEAE. Oi Dang was one of the ingredients in the recipes for the treatment of malaria, vertigo, chest pain and chronic fever. A recipe for ringworm diseases using Cadelabra bush (*Cassia alata* Linn.), family LEGUMINOSAE, was found with high frequency. *Cassia alata* Linn. leaf contains rhein, emodol, 4,5-dihydroxy methyl anthrone, 4,5-dihydroxy-2-hydroxy methylantraquinone which have antifungal activity. The information on medicinal plants and therapeutic indications obtained from this study will be important data which can be applied for the research and development of Lanna medicinal plants to modern medicines. Also, the Lanna folk wisdom will be beneficial to the conservation of the wisdom and the understanding of the historical communities and cultures of the ethnic group in the region of Lanna in the Thai Kingdom as well.*

Key words: Lanna Medical Textbook, Recipe, Translation, Modern Pharmaceuticals

INTRODUCTION

The pharmaceutical products are not only developed from chemical synthesis and biotechnology, but also from the local medical-plant textbooks (Manosroi, 2003). This research was to study Lanna medical-plant textbooks. A number of 292 copies of the old Lanna medical plant textbooks was surveyed and collected from 8 provinces of the Lanna region, Thailand. These recipes were written in Lanna script on dried palm leaves, mulberry-pulp paper or *Streblus asper* books. The 3 most reliable and complete recipes from each province were selected and translated into Thai. The translation comprised of 2 steps, first, Lanna to Thai (Lanna meaning) and second, Thai to the common understandable Thai (Manosroi et al., 2004). Medicinal plants/recipes appeared in the textbook and the chemical constituents in the plants were collected (Manosroi, 2000) and analysed. The herbs selected will be investigated for further development as modern drugs.

METHODOLOGY

The research procedure was as follow:

1. The old Lanna medicinal-plant recipes of 21 copies from 7 provinces were translated.
2. The medicinal plants, recipes, diseases and chemical compositions information which appeared in the Lanna medicinal-plant recipes were collected and analysed statistically for incidence and frequency.
3. Scientific monographs of each plant were prepared. Therapeutic indications appeared in the Lanna medicinal-plant recipes were also included.
4. A report was prepared.

RESULTS

Table 1. Sources and numbers of Lanna medicinal-plant textbooks from Social Research Institute of Chiang Mai University in Chiang Mai, Thailand.

Province	Number of textbook	Number of		Source			
		Booklet	Bound	Temple	Government	Private	Not defined
Chiang Mai	55	22	39	49	1	5	1
Chiang Rai	14	6	8	13	-	1	-
Lampang	19	15	14	19	-	-	-
Lamphun	4	2	4	4	-	-	-
Phrae	15	11	6	15	-	-	-
Nan	8	4	4	8	-	-	-
Payao	10	-	12	10	-	-	-
Mae Hong Son	-	-	-	-	-	-	-
Total	125	60	87	118	1	6	1

- Note:**
- Booklets are parts of textbooks which are written on mulberry-pulp paper.
 - Bounds are parts of textbooks which are written on palm leaves.
 - One textbook usually has one booklet or one bound. But, some textbooks may contain one or more than one booklets or bounds.
 - Some textbooks can not be identified as booklets or bounds.

Table 2. Sources and numbers of Lanna medicinal-plant textbooks from Art and Culture Promotion Center of Chiang Mai University, Thailand.

Province	Number of textbook	Number of booklet/bound	Microfilm copy		Source	
			Yes	No	Temple	Private
Chiang Mai	11	23	11	-	11	-
Chiang Rai	6	6	6	1	6	-
Lampang	60	63	60	-	59	1
Lamphun	16	21	15	1	16	-
Phrae	11	22	11	-	11	-
Nan	123	166	119	4	122	1
Payao	20	25	20	-	20	-
Mae Hong Son	4	4	4	-	4	-
Total	251	330	246	6	249	2

- Note:**
- Booklets are parts of textbooks which are written on mulberry pulp paper.
 - Bounds are parts of textbooks which are written on palm leaves.
 - One textbook usually has one booklet or one bound. But, some textbooks may contain one or more than one booklets or bounds.
 - Some textbooks can not be identified as booklets or bounds.

Table 3. Statistical information on the survey of medicinal-plant textbooks from 10 provinces in Thailand.

Provinces	No. of textbook		No. of pages				No. of recipes (formulae)				% completeness of the documents	Av. score of accuracy and ease of reading (out of 10)	No. of textbooks with the dates recorded		No. of text-books not being selected
	Total	Selected	Total	Max. per text book	Min. per text book	Av. per text book	Total	Max. per text book	Min. per text book	Av. Per text book			Yes	No	
Chiang Mai	55	49	3,585	336	14	73	8,163	1,113	5	166	67.34	6.89	3	46	6
Phrae	15	14	1,276	183	19	91	2,873	438	4	203	92.85	7.32	-	14	1
Tak	13	13	1,064	154	30	81	2,373	398	31	182	92.30	6.61	1	12	-
Chiang Rai	14	12	499	68	15	41	1,397	348	6	116	83.33	8.00	1	11	2
Payao	10	10	749	170	19	74	1,505	413	15	150	40.00	6.55	-	10	-
Lampang	19	18	1,724	257	28	96	5,477	1,108	5	304	66.66	6.83	-	18	1
Nan	14	5	394	245	24	79	956	692	26	191	80.00	7.80	1	4	9
Lamphun	4	4	609	417	60	152	1,809	1,120	120	452	75.00	7.32	-	4	-
Pitsanuloke	42	-	-	-	-	-	-	-	-	-	-	-	-	-	42
Mae Hong Son	4	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Total	190	125	9,900	-	-	79	24,553	-	-	195	-	7.16	6	119	65

DISCUSSION AND CONCLUSION

1. Total number of 292 Lanna medical textbooks were collected.
2. Mae Hong Son had no complete textbooks. So, only the total of 21 copies from 7 provinces were translated.
3. Over 30,000 formulae (recipes), 4,500 names of the Lanna plants and more than 500 diseases were found in those textbooks.
4. The medicinal plants with high frequency in the recipes can be good candidates for further research and development of modern pharmaceuticals.
5. Most textbooks were from the temples. Textbooks were in both forms of books/booklets and bounds.
6. The upper part of Lanna (Chiang Mai, Chiang Rai and Payao) appeared to be in palm-leaf form whereas the lower part of the Lanna region (Lampang) in mulberry-pulp, book/booklet forms.
7. The textbooks from the Art and Culture Promotion Center of Chiang Mai University can not be identified whether they are in booklet or bound forms.
8. Tak and Pisanuloke are not in the Lanna region. So, they were left out. The three provinces which had highest average numbers of recipies were Lamphun, Lampang and Phare, while the three most complete documents were those from Phare, Tak and Chiang Rai. This may indicate the popularity of using the recipies in their daily life in those provinces.
9. Interestingly, about 95% of the documents did not have the record of the dates. There were 3 recipes from Chiang Mai with dates recorded and each from Tak, Chiang Rai and Nan. These may be recorded by the well-educated Lanna people.
10. The information on medicinal plants and therapeutic indications obtained from this study will be important for the research and development of Lanna medicinal plants to modern pharmaceuticals. The Lanna folk wisdom information from this study will be also beneficial to the understanding of the histories and cultures of the ethnic group in this region.

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