

Toward a North American Fall-Strike Medicine

By Jean Giblette

The North American Tang Shou Tao Association is to be congratulated for carrying forward a form of ancient Asian wisdom, helping it take root on a new continent but with great care for the preservation of traditional values.

High Falls Gardens and our associates are on a parallel path as we work with Asian medicinal plants to support the assimilation of traditional Chinese medicine in North America. Study of the medicine is a way to reclaim the indigenous healing practices of both continents, with full awareness of where we have been, what we have learned and where we are going. Ecological cultivation and responsible wild harvest of the herbs promises to safeguard our own health and also to help remediate the health of the landscape.

I know almost nothing about martial arts and just a little about medicinal plants, being (to paraphrase Thomas Jefferson) a woman of a certain age but a very young gardener. However, the medicinal plants important to practitioners of martial arts are important to everyone. Plants in the wild are threatened by climate change and loss of habitat.¹ A particular wild species that becomes an object of human fetishism can be wiped out in a few short years; the current best example being caterpillar fungus, cordyceps, over-harvested in the Himalayan region.² The best means to protect our medicinal herbs is widely dispersed ecological cultivation in biodiverse settings that correspond to the plant's natural habitat.

In eastern North America we enjoy a close relationship between our own plant species and those of eastern Asia. They were once the same species eons ago in geological time, scientists theorize,³ then separated by patterns of glaciation that gave rise to a divergent evolution. This analog phenomenon and the similarity of temperate climate zones have presented us with an opportunity to become better stewards of our medicinal plants.

To honor our shared endeavors in transmitting and preserving ancient wisdom, I looked at some plant species that go into common Die Da Yao (fall-strike medicine) formulas, in particular with regard to their conservation status. With this analysis and report I hope to offer you a sense of the opportunity available to us, not only to work toward protection of the plants and ensure their accessibility, but also to preserve the spirit and context of the medicine.

Methods

Seven Die Da Yao formulas were examined. These formulas were taken from online lists of ingredients of products made by two manufacturers well known and trusted in the traditional Chinese medicine community – Spring Wind and Blue Poppy – plus one generic formula and another from my teacher, Dr. Jeffrey C. Yuen of New York City.

The generic is Three Bitters Ointment, which varies to include three or four huangs, or “yellows,” the famous cooling herbs of China: huáng bǎi, huáng lián, huáng qín and dà huáng. Dr. Yuen's liniment formula contains Chinese angelica root, cattail pollen, frankincense,

safflower, myrrh, notoginseng, dragon's blood, costus and sweetgum fruit. The five other formulas, with their ingredients listed on the manufacturers' websites, are:

Dragon's Blood Liniment	Blue Poppy
Green Willow Liniment	Blue Poppy
Shaolin Dee Dat Jow Liniment	Blue Poppy
Amber Massage Salve	Spring Wind
Dr. Shir's Liniment	Spring Wind

All redundant ingredients in the seven formulas were conflated. The total of 70 herbal ingredients reduced to 40 plant species after excluding minerals like amber and pyrite, and ignoring minor distinctions between aconite and ginseng species. The list of 40, in alphabetical order of English common name, is found in Appendix A.

The herbs were studied and assessed in terms of where they are sourced for commerce, whether or not they are at risk in the wild, whether or not they are cultivated in one area only or in widely dispersed areas, and their treatment category in traditional Chinese medicine. The third edition of the Bensky materia medica⁴ and the online Flora of China⁵ are the primary references for this analysis. In addition, readers may be assured that the online Wikipedia is fairly reliable as a source of botanical information, having been recently adopted for use by professional botanists.

Finally, a short list was compiled of suggested substitute herbs, discussed below. These are preliminary suggestions of herbs from the most important treatment categories that have potential for widespread ecological cultivation or wild harvest throughout much of North America. This list is found in Appendix B.

Assessment of common Die Da Yao herbs

The treatment categories of the 40 ingredients, as described in Bensky, are distributed as expected with the greatest portion in "Regulate the Blood," followed by "Clear Heat." Regulate the Blood includes stopping bleeding and moving blood as distinct subcategories. Clear Heat is distinct from "Warm the Interior and Expel Cold," and several different kinds of Heat are recognized. The Heat most associated with Die Da Yao is that of inflammation from injury.

<u>Treatment Category (Bensky)</u>	<u>No. Herbs</u>
Regulate the Blood	14
Clear Heat	6
Regulate the Qi	3
Release the Exterior	3
Warm the Interior and Expel Cold	3
Aromatic Substances that Open the Orifices	1
Dispel Wind-Dampness	1
Downward-Draining Herbs	1
Obsolete Substances	1
Substances for Topical Application	1
Tonify the Blood	1
Tonify the Qi	1
Tonify the Yang	1
Topical Application	1
Transform Phlegm & Stop Coughing	1

Treatment categories are important to this analysis because of the potential for using substitute herbs, discussed later in this report.

Mastic is the only ingredient of the 40 that is not described in Bensky. This resin of a small evergreen tree has been used as chewing gum for over 2,000 years. The tree is cultivated on the Greek island of Chios. Mastic production is controlled by a cooperative of medieval villages called the “Mastichochoria.”⁶ Historically, such local control is optimally beneficial as the villagers all have an economic stake in protecting the tree. However, under the new reality of climate change, centralized production also has a disadvantage: the increased potential for storms, floods, or droughts that could damage the trees. Widely distributed cultivation is the best insurance against such threats.

Of the 40 herbs in the seven formulas under examination, a large portion (17 species) are either tropical or subtropical, implying that cultivation in North America would be confined to the Caribbean, Mexico or Hawaii at present.

Three of the plant species are considered to be endangered in the wild. Even if they are also cultivated, endangerment means that the reservoir of genetic diversity for the species is threatened, which affects survival in the long term. Further, among the non-endangered cultivated species, three are grown in a limited area and are vulnerable to climate change impacts upon that location.

Six of the herbs are distillates, resins or saps of trees. For example, the tropical tree preferred for the distillation of borneol is considered critically endangered. Borneol production from this tree, known as Indonesian kapur, is concentrated in Sumatra. Although other plants are sources of borneol, and borneol can be synthesized, human habits of trade continue to put pressure on the preferred species.

From a cultivator’s point of view, the major challenge with trees is that they take a long time to grow to the point where harvest is possible. Tree production takes foresight, planning and patient capital investment. Even if cultivated, trees can be over-exploited to the point of vulnerability. For example, the tropical tree that yields frankincense or gum olibanum is often heavily tapped. Such mistreatment weakens the tree and its seeds become less fertile.

For the species adapted to the temperate zones, the plants fall into a spectrum of adaptability with weedy, expansive species at one end and very picky ones on the other. Four of the species, Chinese angelica root (dāng guī), Chinese coptis (huáng lián), Chinese wild ginger (xì xīn), and notoginseng (sān qī), require very specific ecosystems and perhaps even specific assortments of soil microbes to grow well. This means the picky plants will continue to be more vulnerable due to climate change until similar ecosystems are identified, dispersed production established and production challenges worked out.

Substitutions in Die Da Yao formulas

While protecting the standard species, we also should be looking for substitute ingredients among the more adaptable species or even among naturalized, weedy plants. For example, costus root (mù xiāng) is listed as vulnerable in the treaty maintained by the Convention on International Trade in Endangered Species (CITES Appendix II). Costus is an alpine plant from the Himalayas, was important in Roman trade with India, and is a component of the famous Tibetan formula Padma 28. Yet in China costus was not used for mù xiāng until the 19th century; prior to that, the preferred species was *Inula helenium*, elecampane, a more cosmopolitan, weedier species.⁷ Should we return to that earlier choice? A new generation of experimental herbalists is needed to make systematic substitutions in Die Da Yao formulas and test them in clinical practice. This process should be a matter of open scientific investigation; one substitution at a time should be tested by several clinicians.

Notoginseng (sān qī) is a highly desired herb on the list, one that is reputed to be a primary ingredient in the proprietary Yunnan Baiyao patent medicine. To my knowledge, the correct plant material has not made the journey to North America. Ginsengs are notoriously fussy about their environment. The cultivated versions of both American and Asian ginseng (*Panax quinquefolius* and *Panax ginseng*) are artificially fertilized and sprayed with fungicides. Wild cultivation, which term has a specific definition,⁸ is the only way to obtain ecologically produced ginseng.

Ginsengs are wonderful plants, but I am wary of mythologizing or fetishizing any single herb. No one herb is anywhere near a cure-all, despite what marijuana partisans claim. The fact is that the great treasure of Chinese medicine gives us a wide range of plant species in any treatment category. Instead of notoginseng, for example, the root of cinnabar (dān shēn) can be charred to stop bleeding while retaining its blood-invigorating properties, the same treatment characteristics of sān qī.⁹ *Salvia miltiorrhiza*, a mint family herbaceous perennial that is the source of cinnabar root, is an excellent candidate for widespread cultivation in North America, is not too hard to grow, and is ornamental. What more could we ask?

Agrimony (xiān hè cǎo) is a humble, weedy herb found throughout temperate regions. It can be used for all kinds of bleeding, either topical or internal, as its nature is neutral. In southern China agrimony is known as “loss-of-strength” herb, and 30 grams of dried herb are combined with ten red dates (dà zǎo), boiled in a strong brew and sipped throughout the day.¹⁰ The plant is weedy, which means easily grown and prolific, and beautiful when the leaves become red-tinged in late summer and fall.

Speaking of weeds, the massive “invasions” that terrorize government officials turn out to include some good candidates for substitutions. Two examples are reed rhizome (lú gēn) and Japanese knotweed (hǔ zhàng) which are used, respectively, to Clear Heat and Regulate the Blood. The fact that they have colonized waterways in the U.S. should give us pause to consider what chemicals have drained into the water supply, how the microbial balance of water and soil has been affected, and why these “invasions” have occurred. Is it possible that Mother Nature has deployed her healing agents to clean up the mess we have made?

These suggestions for substitutions listed in Appendix B are only preliminary, intended to inspire you to study the treatment categories important to Die Da Yao and to think of how we can adapt the medicine to North America.

Conclusions

Die Da Yao relies on several herbs used by humankind for millennia, traded over the Silk Road and other ancient trade routes, and highly valued for their special properties. Their value is enough to make them iconic. Yet how many people think about where and how frankincense and myrrh are produced? Today we face unprecedented realities that threaten our access to these herbs. Given the contemporary problems of climate change, the need to drastically reduce the use of fossil fuels, the displacement of plant habitats, threats to access imposed by trade and governmental authorities, plus the fact of human competition for resources, we need to bring these matters into full awareness, and soon.

Fortunately, the great gift of scholarship that is traditional Chinese medicine affords us a range of options for making substitutions within treatment categories for important Die Da Yao formulas. Further, many substitutes grow in temperate zone climates and are candidates for widespread ecological cultivation or responsible wild harvest in North America. To meet potential threats to our medicine, we must prepare to safeguard our health and, by doing so with full consciousness, remediate soils and water, build biodiversity, and increase resilience in the landscape.

Traditional Chinese medicine is thriving on this continent. My hope is that its path of adaptation takes us closer to the plants, and inspires us to honor their complexity and integrity.

¹ Peng Hua and Xu Zaifu, 1996. “The Threatened Wild Plants Used for Medicine as Chinese Medicinal Herbs” in John MacKinnon et al (eds.), *Conserving China's Biodiversity* (Beijing: China Environmental Science Press), pp. 175-189.

² Hvistendahl, Mara, 2008. “Future of Popular Chinese Herbal Medicine Up in the Air.” *Scientific American*, July 9, 2008. <http://www.scientificamerican.com/article.cfm?id=future-of-chinese-herbal-med-up-in-the-air>

³ Boufford, DE and SA Spongberg, 1983. Eastern Asian – Eastern North American Phytogeographical Relationships: A History From the Time of Linnaeus to the Twentieth Century. *Ann. Missouri Bot. Gard.* 70:423-439. Available at: <http://flora.huh.harvard.edu/china/novon/eaena.htm>

⁴ Bensky D, Clavey S, and Stöger E, 2004. *Chinese Herbal Medicine Materia Medica*, 3rd Edition (Seattle WA: Eastland Press Inc.)

⁵ Flora of China, the online database: <http://flora.huh.harvard.edu/china/index.html>.

⁶ Wikipedia: search “mastic (plant resin).”

⁷ Bensky et al, pp. 529-532.

⁸ Giblette, Jean, 2006. “American Ginseng” in Call, E. et al, *Mending the Web of Life: Chinese Medicine and Species Conservation* (American Herbal Products Assn. & Internatl. Fund for Animal Welfare), pp. 163-169.

⁹ Bensky et al, pp. 602.

¹⁰ Bensky et al, p. 584.

Appendix A
Herbal (plant) ingredients in seven selected Die Da Yao formulas

No.	Common English Name	Pinyin	Literal Chinese Name	Genus, Species, Author	Family	Part	Ref. Pg. Bensky	Tx Category	Codes*
1.	aconite, monkshood	zhì fū zǐ	prepared appendage	<i>Aconitum carmichaeli</i> Debx.	Ranunculaceae	root	673	Warm the Interior and Expel Cold	A
2.	arnebia, Chinese gromwell	zǐ cǎo	purple herb	<i>Lithospermum erythrorhizon</i> Sieb. & Zucc.	Boraginaceae	root	128	Clear Heat	A
3.	borneol	bīng piàn	ice slice	<i>Dryobalanops aromatica</i> Gaertn.	Dipterocarpaceae	distillate	951	Aromatic Substances that Open the Orifices	E T
4.	camphor	zhāng nǎo	camphor brain	<i>Cinnamomum camphora</i> (L.) Presl.	Lauraceae	distillate	1033	Substances for Topical Application	T
5.	Cape jasmine fruit	zhī zǐ	gardenia fruit	<i>Gardenia jasminoides</i> Ellis	Rubiaceae	fruit	95	Clear Heat	T
6.	catechu	ér chá	child's tea	<i>Acacia catechu</i> (L.) Willd.	Fabaceae	extract	1031	Topical Application	T
7.	cattail pollen	pú huáng	sedge yellow	<i>Typha orientalis</i> Presl	Typhaceae	pollen	562	Regulate the Blood	W
8.	Chinese angelica root	dāng guī	state of return	<i>Angelica sinensis</i> (Oliv.) Diels	Apiaceae	root	748	Tonify the Blood	A N
9.	Chinese coptis	huáng lián	yellow links	<i>Coptis chinensis</i> Franch.	Ranunculaceae	root	134	Clear Heat	A N
10.	Chinese corktree	huáng bǎi	yellow fir	<i>Phellodendron chinense</i> Schneid.	Rutaceae	inner bark	138	Clear Heat	A
11.	Chinese foxglove root	shēng dì huáng	unprepared earth yellow	<i>Rehmannia glutinosa</i> Libosch	Scrophulariaceae	root	120	Clear Heat	A
12.	Chinese licorice root	gān cǎo	sweet herb	<i>Glycyrrhiza uralensis</i> Fisch. ex DC.	Fabaceae	root	732	Tonify the Qi	A
13.	Chinese rhubarb root	dà huáng	big yellow	<i>Rheum palmatum</i> L.	Polygonaceae	root	235	Downward-Draining Herbs	A
14.	Chinese wild ginger root	xì xīn	thin acrid	<i>Asarum sieboldii</i> Miq.	Aristolochiaceae	root	27	Release the Exterior	A N

No.	Common English Name	Pinyin	Literal Chinese Name	Genus, Species, Author	Family	Part	Ref. Pg. Bensky	Tx Category	Codes
15.	cinnabar root	dān shēn	red root	<i>Salvia miltiorrhiza</i> Bge.	Lamiaceae	root	602	Regulate the Blood	A
16.	cinnamon twig	roù guì, guì zhī	cinnamon twig, cinnamon bark	<i>Cinnamomum cassia</i> Presl	Lauraceae	twig, inner bark	8	Release the Exterior	T
17.	cloves	dīng xiāng	spike fragrance	<i>Syzygium aromaticum</i> (L.) Merr. & Perry	Myrtaceae	flowerbud	695	Warm the Interior and Expel Cold	T
18.	costus root	mù xiāng	wood fragrance	<i>Saussurea lappa</i> Clarke	Asteraceae	root	529	Regulate the Qi	E
19.	dragon's blood	xuè jié	expended blood	<i>Daemonorops draco</i> Blume	Palmae	resin	648	Regulate the Blood	T
20.	drynaria rhizome	gǔ suì bǔ	mender of shattered bones	<i>Drynaria fortunei</i> (Kunze) J. Sm.	Polypodiaceae	rhizome	798	Tonify the Yang	T
21.	fennel seed	xiǎo huí xiāng	small return fragrance	<i>Foeniculum vulgare</i> Mill.	Apiaceae	seed	697	Warm the Interior and Expel Cold	A
22.	frankincense, gum olibanum	rǔ xiāng	milk fragrance	<i>Boswellia carterii</i> Birdw.	Burseraceae	sap	634	Regulate the Blood	T
23.	ginger, fresh	shēng jiāng / pí	fresh ginger	<i>Zingiber officinale</i> Roscoe	Zingiberaceae	rhiz, peel	30	Release the Exterior	T
24.	hookweed	chuān niú xī	ox knee from Sichuan	<i>Cyathula officinalis</i> Kuan	Amaranthaceae	root	641	Regulate the Blood	A
25.	mastic			<i>Pistacia lentiscus</i> L.	Anacardiaceae	resin	[not in Bensky]	Mediterranean tree	L
26.	myrrh	mò yào	myrrh	<i>Commiphora myrrha</i> Engl.	Burseraceae	resin	636	Regulate the Blood	T
27.	notoginseng root	sān qī	three seven	<i>Panax notoginseng</i> (Burk.) F.H. Chen	Araliaceae	root	559	Regulate the Blood	L N
28.	nux-vomica seeds	mǎ qián zǐ	horse money seeds	<i>Strychnos nux-vomica</i> L.	Loganiaceae	seed	1048	Obsolete Substances	T
29.	peach kernel	táo rén	peach kernel	<i>Prunus persica</i> (L.) Batsch	Rosaceae	kernel	624	Regulate the Blood	A
30.	pine knots	sōng jié	pine knots	<i>Pinus tabulaeformis</i> Carr.	Pinaceae	nodes	367	Dispel Wind-Dampness	W

No.	Common English Name	Pinyin	Literal Chinese Name	Genus, Species, Author	Family	Part	Ref. Pg. Bensky	Tx Category	Codes
31.	pinellia	bàn xià	half summer	<i>Pinellia ternata</i> (Thunb.) Breit.	Araceae	rhizome	413	Transform Phlegm & Stop Coughing	A
32.	safflower	hóng huā	red flower	<i>Carthamus tinctorius</i> L.	Asteraceae	flower	627	Regulate the Blood	A
33.	sandalwood	tán xiāng	sandalwood	<i>Santalum album</i> L.	Santalaceae	heartwood	538	Regulate the Qi	E T
34.	sappan wood	sū mù	Sumatra wood	<i>Caesalpinia sappan</i> L.	Caesalpinaceae	wood	650	Regulate the Blood	T
35.	scute	huáng qín	yellow	<i>Scutellaria baicalensis</i> Georgi	Lamiaceae	root	131	Clear Heat	A
36.	Sichuan lovage root	chuān xiōng	Sichuan lovage	<i>Ligusticum wallichii</i> Hort.	Apiaceae	root	599	Regulate the Blood	L
37.	sweetgum fruit	lù lù tōng	all roads open	<i>Liquidambar formosana</i> Hance	Hamamelidaceae	fruit	644	Regulate the Blood	A
38.	tangerine peel	chén pí / qīng pí	aged peel, green peel	<i>Citrus reticulata</i> Blanco	Rutaceae	peel	510,514	Regulate the Qi	T
39.	turmeric	jiāng huáng	ginger yellow	<i>Curcuma longa</i> L.	Zingiberaceae	rhizome	612	Regulate the Blood	T
40.	zedoaria	é zhú	curcuma	<i>Curcuma phaeocaulis</i> Valetton	Zingiberaceae	rhizome	630	Regulate the Blood	T

***Codes**

A = Candidate for domestic ecological production	17
E = Endangered	3
L = Presently cultivated in a limited area	3
N = Needs a very specific ecosystem	4
T = Tropical or subtropical	17
W = Candidate for domestic wild harvest	2

Appendix B

Examples of herbs in treatment categories important to Die Da Yao
Suitable for widespread ecological cultivation or wild harvest in North America

Note: *This list is not comprehensive, only illustrative.*

No.	Common English Name	Pinyin	Literal Chinese Name	Genus, Species, Author	Family	Part	Ref. Pg. Bensky	Tx Category
1.	achyranthes	huái niú xī	ox knee root	<i>Achyranthes bidentata</i> Blume	Amaranthaceae	root	638	Regulate the Blood
2.	agrimony	xiān hè cǎo	immortal crane herb	<i>Agrimonia pilosa</i> Ledeb.	Rosaceae	herb	584	Regulate the Blood
3.	cinnabar root	dān shēn	red root	<i>Salvia miltiorrhiza</i> Bge.	Lamiaceae	root	602	Regulate the Blood
4.	common reed	lú gēn	reed rhizome	<i>Phragmites communis</i> Trin.	Poaceae	rhizome	106	Clear Heat
5.	dandelion	pú gōng yīng	sedge common plant	<i>Taraxacum mongholicum</i> Hand.-Mazz.	Asteraceae	root	162	Clear Heat
6.	elecampane root	tǔ mù xiāng	local wood fragrance	<i>Inula helenium</i> L.	Asteraceae	root	532	Regulate the Qi
7.	Japanese knotweed	hǔ zhàng	tiger cane	<i>Polygonum cuspidatum</i> Willd. ex Spreng.	Polygonaceae	rhizome	572	Regulate the Blood