

Everything You Know Is Wrong

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One morning, you get a call from a patient who informs you that he has woken up with a bright red rash that covers his upper torso. The patient is a hypertensive man with neck pain. You've treated him twice in the last week, and yesterday you gave him two bags of herbs.

You instruct him to come in to the office immediately. When he arrives you see that, indeed, something has triggered an allergic reaction.

"Did you change your laundry detergent?" you ask.

"No, not recently," the patient answers.

"Have you eaten any unusual foods?"

"Nope."

"Are you taking any new medications?"

The patient again replies in the negative. You give him an acupuncture treatment and instruct him to discontinue the herbs for the time being.

Sighing, you sit down and begin what may well be hours (if not weeks) of detective work trying to ascertain which of the herbs, if any, caused this reaction. Could it be a drug interaction? "Hmm," you think to yourself. "Let's see. What did I give him? *Shi hu* (dendrobium) -- that might be a problem. *Ban xia* (pinellia)? After all that processing, it's possible but not likely. *Xi xian cao* (siegesbeckia)? That could be the culprit. Well, at least there's no *du zhong* in there, so I don't have to check for a latex allergy... ." You even search around on IBIS and PubMed, looking for information on pinellia, siegesbeckia, and dendrobium.

Later that afternoon (as if you weren't having enough fun already), your patient's physician calls you. With a condescending tone, he demands that you tell him exactly what you've given his patient. Fifteen minutes later, after a medical records release appears on your fax machine, you pull the acupuncture needle out of the *shen men* point on your wrist, take a deep breath, and call the doctor back.

Let's face it: this physician doesn't know *mu gua* from moo goo gai pan. Any information other than Latin plant names and biomedical explanations will confirm his suspicion that you inhabit another planet. "Processed pinellia," you hear yourself saying. "Dendrobium stems, an orchid. Siegesbeckia. Pardon me? Yes - it's a small weed used for hypertension."

So far, so good. You're giving this M-Diety the correct information, right? Wrong.

What you *don't* know (and what your herb distributor may not even know), is that there is no pinellia in

your *ban xia*; no dendrobium in your *shi hu*; and no siegesbeckia in your *xi xian cao*. Instead, your *ban xia* is typhonium; your *shi hu* is ephemerantha; and your *xi xian cao* is epimeredi.

Do you know what else? The same thing may happen if you use *sheng ma*, *jin qian cao* or *dang gui*. The truth is, you have no idea what you are giving to your patient.

What is going on here? Have you been duped? No, not exactly. What you are experiencing is a medicine caught between worlds.

First, let's look at the current system of plant classification. All life forms are organized into different categories. The smallest commonly used category of life is called a *species*. A number of species together forms a *genus*. A number of *genera* (the plural of genus) constitute a *family*. Families are combined to create an *order*, and so on.

For example, the *dang gui* we use in the clinic (hopefully) is *Angelica sinensis*. Angelica is the genus, and angelica sinensis is the species. Other herbs in the genus angelica include *bai zhi* (*angelica dahurica*) and *du huo* (*angelica pubescens*). All *angelicas* are in the family *apiaceae*, which used to be called *umbelliferae*. Other genera in *apiaceae* include *ligusticum* (*chuan xiong* and *gao ben*), and *bupleurum* (*chai hu*). *Apiaceae* is in the order *apiales*. Other families in *apiales* include *araliaceae* (the ginseng family).

Because botanists, like other professionals, often create work in order to keep their jobs, botanical names are sometimes subject to change without notice. Despite its flaws, botanical classification is still the clearest and best way we have to identify plants - and it is the only system used worldwide.

This system is useful for us because the more closely plants are related to each other, the more likely they are to have a similar chemistry. The less closely related they are, the less the likelihood of them sharing constituents. This, however, does not mean that they are interchangeable. Plants that are closely related can still have significant differences in their use as medicine. Let's look at some common foods, for example.

While lemons and oranges both clear Liver *qi* congestion, lemons are cold, but oranges are warm. Lemons produce fluids, while oranges tonify *qi*, blood and yang, yet both fruit share the same genus: citrus, as do limes; pomelos; kumquats; *chen pi*; and *fo shou*.

In the *rosaceae* family, apples are neutral to cool, tonify *qi* and blood, and sedate the yang. Pears are also cool, but they produce fluids, moisten the lungs, and regulate the lower *jiao*. Strawberries are warm, tonify the yang, and harmonize the middle. Yet all three of these fruits share the same family, as do *fu pen zi* (raspberry), *pi pa ye* (loquat), *mu gua* (quince) and *shan zha* (hawthorne).

Within this same family is another genus, *prunus*, which contains many energetically and pharmacologically different herbs: *tao ren* (peach); *wu mei* (plum); *yu li ren* (cherry); and *xing ren* (apricot). To use *tao ren* interchangeably with *wu mei* simply because they share the same genus might create a very interesting (that is a Chinese "interesting") clinical experience for you, your patients and their pharmacist. The point is that it's all right to "compare apples and oranges," but we need to know which is the apple and which is the orange.

For thousands of years, the Chinese have used an empirical medicine in which herbs were referred to by their local, common names. This system worked for them, but we are not in ancient China, and this

system will not work for us. Over the years, when we've ordered *ban lan gen*, we've never known if we were going to get clerodendron, isatis, polygonum or baphicacanthus species - and the truth is, we still don't know. They are all called "*ban lan gen*." These substitutes are not only in different genera, they're not even in the same family.

Similarly, as far as we know, what is purchased as *zi hua di ding* is never *viola spp.* (violaceae). What we are giving to our patients is either *corydalis bungeana* (papaveraceae), *gentiana loureiri* [gentianaceae] or *gueldenstaedtia multiflora* [fabaceae].

Just because plants inhabit a different genus or family doesn't guarantee those substitutes will cause a problem or be ineffective. Still, it is our responsibility to know what we are using as medicines.

Please bear in mind that it's not that these substitutes are necessarily bad medicines. On the contrary, we might sometimes prefer the substituted plants for certain patients. In the right situation, they could be great medicines, but there may be significant differences between plants, especially when we consider herb-drug interactions or allergies. Some substitutes may be missing important functions present in the original species. These may be the very functions needed for a particular patient. When herbs are substituted without our knowledge, we have no idea what we are giving our patients.

This situation is a disaster waiting to happen.

What does this mean when we read Chinese research on plant medicines? We (the authors) reference this material all the time, both in English and Chinese. If we, as professionals, don't know which plants we are using, then do we know the research was done on the correct plant?

As individuals, and as a profession, we can no longer afford sloppy herbal nomenclature. We need to know exactly what we are giving our patients, and our patients have a right to know exactly what they are taking.

As our medicine begins to find its stride in the West, more people are going to mix pharmaceutical drugs with plant medicines. This is another reason why it is critical for us to be accurate in our plant identification. It is difficult enough to ascertain herb-drug interactions in the best of circumstances, but it is impossible to do so if we don't know which plant we're talking about.

The solution? Standardized, Chinese common names are a good place to start. If we are going to continue to use Chinese names when referring to Chinese herbs, then it is our opinion that each species (and plant part, if appropriate) should each be given only *one* Chinese common name for commerce. To prevent confusion, that name or similar names should not be shared with other plants of a different genus. Lack of clarity was exactly the problem in the case of *mu tong*, *guan mu tong* and *chuan mu tong*. The names all sound similar, plus the herbs are traditionally used interchangeably, in spite of the fact that some are toxic. Oops!

Our profession is still trying to recover from that fiasco, and the whole situation was entirely avoidable. If proper nomenclature had been used for *akebia* and *aristolochia spp.*, it is likely that no dialysis would have been needed and attorneys would have had to find other work.

In addition, while we cannot be expected to have a botanist on staff in our clinic to review our purchases, it is fully reasonable to expect an herb distributor to do so. The leading herb company in the U.S. (that we are aware of; there may be others) that is working to correctly identify plant species

is Andy Ellis' Spring Wind Herbs. While we do not speak for him personally, much of this information is a result of Andy's tenacity and integrity.

What follows is a list of plants we have either seen personally or understand to be used in herbal pharmacies in the U.S. or China and labeled under a common name. *Caveat emptor.*

Pin Yin	Family	Species Used
<i>Xi Xian Cao</i>	Asteraceae Lamiaceae	Siegesbeckia spp. Epimeredi indica
<i>Shi Hu</i>	Orchidaceae	Dendrobium spp. Ephemerantha spp.
<i>Sheng Ma</i>	Ranunculaceae Asteraceae	Cimicifuga spp. Serratula chinensis
<i>Bai Jiang Cao</i>	Valerianaceae Asteraceae	Patrinia spp. Thlaspi arvense
<i>Wang Bu Liu Xing</i>	Caryophyllaceae Moraceae Fabaceae	Vaccaria segetalis Ficus pumila Vicia spp.
<i>Ban Xia</i>	Araceae	Pinellia spp. Typhonium flagelliforme
<i>Ce Bai/Bo Ye</i>	Cupressaceae Podocarpaceae	Biota orientalis Podocarpus macrophyllus
<i>Jin Qian Cao</i>	Primulaceae Lamiaceae Fabaceae Apiaceae	Lysimachia christinae Glechoma longituba Desmodium styracifolium Hydrocotyle sibthorpioides
<i>Ban Lan Gen</i>	Brassicaceae Acanthaceae	Isatis indigotica Baphiakanthus cusia
<i>Da Qing Ye</i>	Acanthaceae Brassicaceae Polygonaceae Verbenaceae	Baphiakanthus cusia Isatis indigotica Polygonum tinctorum Clerodendron cyrtophyllum (Some authorities believe clerodendron is the species referred to in the <i>Ben Cao Gang Mu</i>)
<i>Dang Gui</i>	Apiaceae	Angelica sinensis Angelica acutiloba Angelica tsinglingensis Angelica gigas Levisticum officinale Ligusticum glaucescens
<i>Di Fu Zi</i>	Chenopodiaceae Lamiaceae	Kochia scoparia Leonurus heterophyllus
<i>Mi Meng Hua</i>	Loganiaceae Thymelaeaceae	Buddleia officinalis Edgeworthia chrysantha

<i>Wu Jia Pi</i>	Araliaceae Asclepiadaceae	Acanthopanax gracilistylus Periploca sepium (toxic) (Sometimes "mystery materials" in the zcanthopanax genus are substituted)
<i>Mu Tong</i>	Lardizabalaceae Ranunculaceae Aristolochiaceae	Akebia spp. Clematis armandii Clematis montana Aristolochia manshuriensis
<i>Fang Ji</i>	Menispermaceae Aristolochiaceae Menispermaceae	Stephania tetrandra Cocculus trilobus Aristolochia fangchi Sinomenium acutum
<i>Shan Ci Gu</i>	Orchidaceae Gesneriaceae Liliaceae	Cremastra variabilis Pleione bulbocodioides Pleione yunnanensis Oreorchis spp. Amana edulis (toxic)
<i>Bai Fu Zi</i>	Araceae Ranunculaceae	Typhonium giganteum Aconitum spp.
<i>Ji Xue Teng</i>	Fabaceae Lardizabalaceae	Spatholobus suberectus Millettia spp. Mucuna birdwoodiana Sargentodoxa cuneata
<i>Zi Hua Di Ding</i>	Violaceae Papaveraceae Gentianaceae Fabaceae	Viola spp. (in theory) Corydalis bungeana Gentiana loureiri Gueldenstaedtia multiflora

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