

Back to The Future— Herbalism 3.0 Part 1: Foundations

Jonathan Treasure

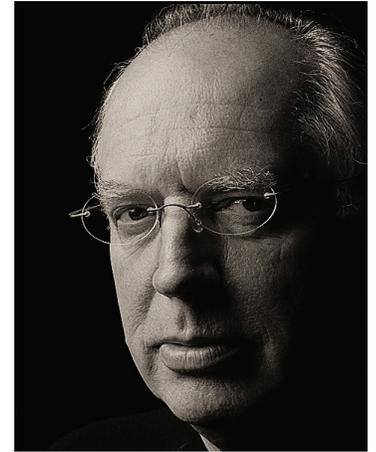
In the opening of a commencement speech titled *This Is Water* delivered a few years before his untimely death, David Foster Wallace describes a cameo in which two young fish meet an older fish swimming the other way. As they pass, the older fish nods at them and says “Morning boys! How’s the water?” The two young fish swim on by, and a few minutes later one turns to the other and says, “Huh? What is ‘water’?” (Foster Wallace 2009). The point of the parable is not so much that we need wise old fish to tell us about the nature of water, but simply that it is often the most obvious and fundamental everyday realities that we find most difficult to talk about.

For western herbalists today, the convenient historic default of not discussing “the water” is no longer viable. We are confronting challenges that are visibly eroding the viability of our default modus operandi and identity, and the sell-by date has long passed. It is quite arguable that herbal medicine has arrived at something of a historic bifurcation point with an increasingly forced choice between two alternative trajectories for the 21st century. The first involves discussing the “water” – and requires letting go of its 20th century paradigm to meet the challenges of the 21st.

The second is the real threat of possible extinction via a combination of sequestration by mainstream biomedicine coupled with fragmentation into various marginalized subcultural cliques and inconsequential factions – a process visibly underway.

The choice of appropriate tools for self-understanding in a field as inherently multidisciplinary and heterogeneous as herbalism is not clearly mandated by the specific concerns of its internal content. Nor are herbalists themselves particularly prone to philosophizing about their practice. My personal preference is to draw from the toolbox of the history and philosophy of science. Until recently, “history” in herbal medicine was nearly synonymous with “tradition” *in sensu* of traditional knowledge. Platitudes of the genre “combining ancient wisdom with modern science” pervade the marketplace for herbal products, but behind the clichés herbalists have always had a strong sense of the importance of historic continuities in their discipline. Emphasis on the ongoing authority of centuries-old herbals contrasts starkly with the infantile amnesia that typifies modern biomedicine.

Despite this, authoritative historical surveys of western herbalism, with a few exceptions such as [Barbara Griggs](#) (Griggs 1981) have been noticeable mostly by their absence. However, several recently published



[Jonathan Treasure](#) studied medicine at Cambridge University, and was in neurobiology research at Harvard Medical School but dropped out of academia to pursue Tibetan Buddhist studies in the mid 1970s. He later qualified in herbal medicine from the UK School of Phytotherapy. An Oregon resident for the last 20 years, his clinical practice combines phytotherapy with cutting-edge oncology to formulate personalized cancer treatment strategies. He is a member of the British NIMH and College of Practitioners of Phytotherapy and the US Society of Integrative Oncology. He is author of the herb section of the collaborative *Herb, Drug, Nutrient Interactions: Clinical Implications and Therapeutic Strategies* (Mosby Medical, 2008) and is currently writing a book on *Cannabis and Cancer*.

works together make a cogent argument for the emergence of a scholarly approach to the history of herbal medicine by authors clearly literate in both herbalism and history (Tobyn 2011; Francia 2014). My own approach to history is both more pragmatic, philosophical and frankly politicized. Marx famously pointed out that when history repeats itself, the first time is as a tragedy, the second is a farce. Historical self-analysis here is animated above all by the need to learn from and avoid the mistakes of the past. The ulterior motive is not representation but intervention. The study of history conducted as scholastic documentation of how things were done in the past is conservative rather than critical if its implicit program is “to stand athwart history yelling ‘Stop.’”¹

Like historians, philosophers of science have different motivations and concerns. Here again my preference is hybrid, drawing primarily from the historicism of Kuhn and the anarchy of Feyerabend, but without dispensing altogether with the necessity for internalist analyses of the epistemic content of the science of herbalism itself.² This last point is important because adoption of purely sociological or historical approaches to understanding science may be laudable insofar as they emphasize values and ethics as well as cultural relativity and multiperspectivism, but tend to fail in their ability to evaluate internal scientific content; however here I shall rely heavily upon

the now “classical” approach to scientific revolutions developed by Thomas Kuhn. Although familiar to many, a brief review of the main points from *The Structure of Scientific Revolutions* (Kuhn 1962) follows.

Kuhn’s Scientific Revolutions 101 For philosopher of science **Thomas Kuhn**, a scientific revolution is not simply a shift in the way science views the world, or how and why it performs what experiments. The major scientific revolutions such as heliocentrism, germ theory or general relativity show how new paradigms are associated with profound changes in how we conceive, construct and create our world and thus are world-changing views rather than changing world-views.

In brief, Kuhn posited that historically, science progresses non-linearly with extended periods that he called “normal science” that were interrupted by periodic crises or revolutions. In the initial period of “prescience,” emerging observations and experimental data lead cumulatively to the development of a core disciplinary matrix or “paradigm” which characterizes the period of normal science (business as usual). Over time, anomalous findings may presage the end of business as usual; should those anomalous findings accumulate they can become increasingly “incommensurable” with the existing paradigm. In this case a period of crisis or “revolution” ensues, and eventually a new paradigm emerges

New paradigms are associated with profound changes in how we conceive, construct and create our world and thus are world-changing views rather than changing world-views.

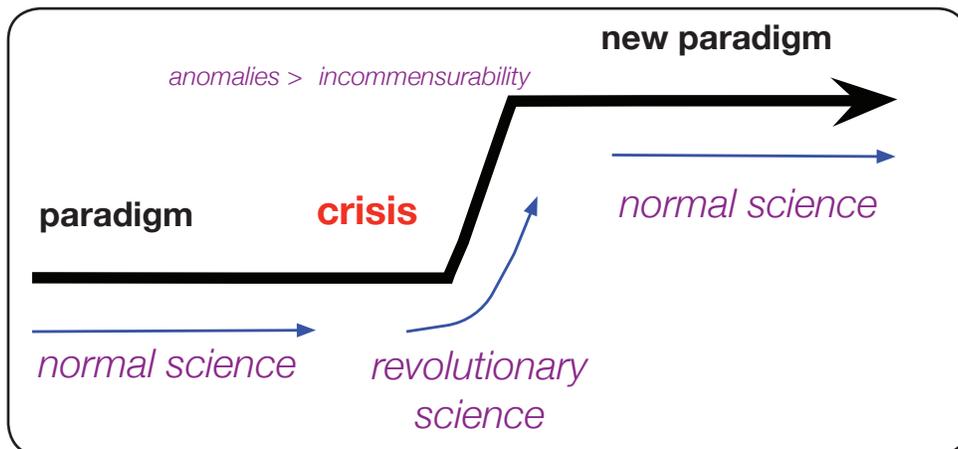


Fig 1. Graphic representation of Kuhnian science

compatible with the findings that triggered the crisis, and another settled period of normal science follows this “paradigm shift.” This process is represented in a telegraphic manner (see Figure 1).

With this framework we can now parse the history of western herbalism in terms of Kuhnian paradigms. Doing so involves an inevitable degree of simplification that may risk offending the historicist sensibilities of those more comfortable discussing trees than forests, but our premise is that the forest is ablaze, and maintaining decorum is never a top priority when wildfire fighting. Controversially, my timeline scaling is logarithmic rather than linear, resulting in an unkindly compression of two millennia of herbal medicine into a single chapter. This log scale is also intentionally suggestive of an increasingly urgent need for herbal

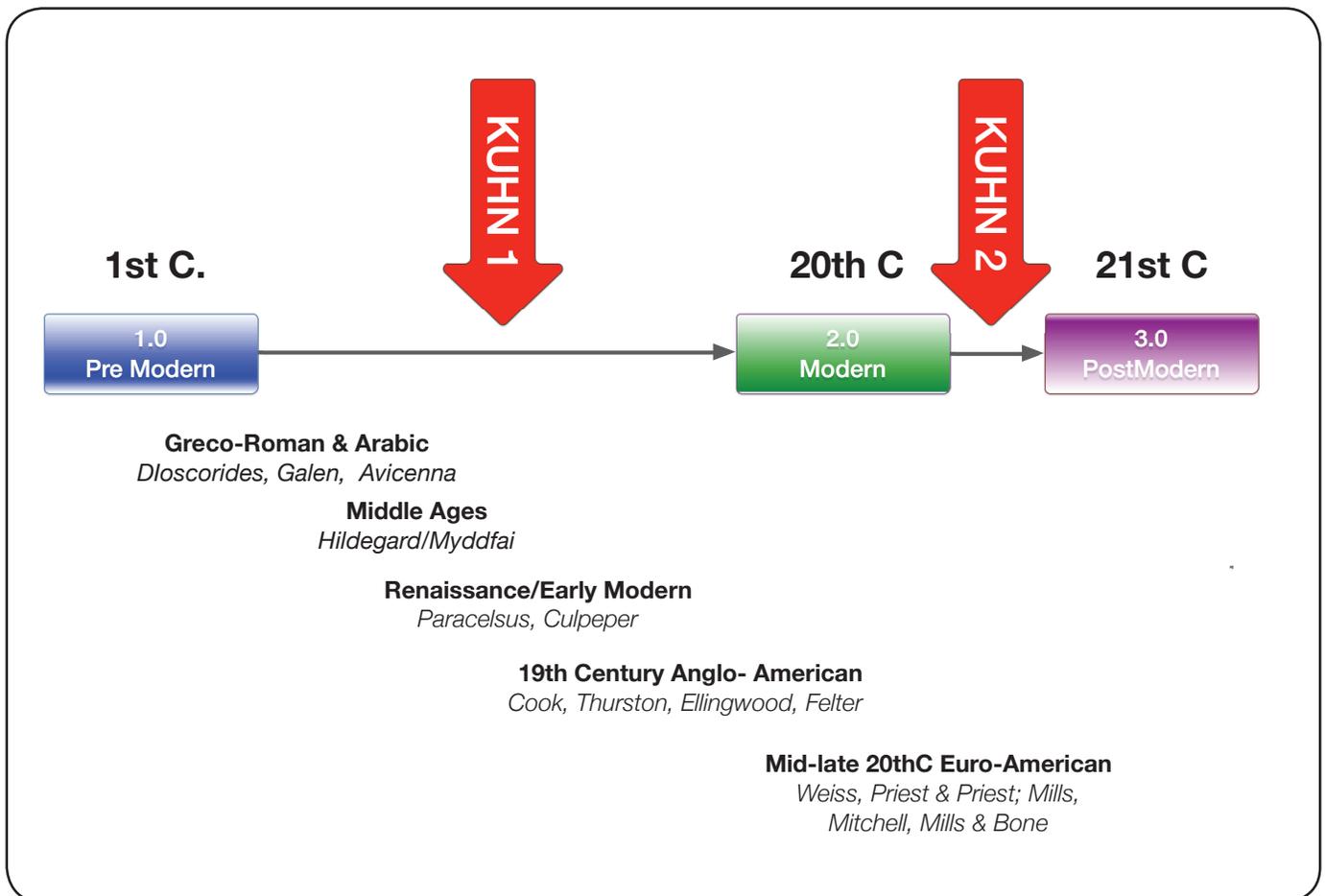
medicine to recognize the impending Kuhnian crisis, because of the globally accelerated speeds of social, technical and medical developments. For my purposes here, this temporal condensation means Herbalism 1.0 begins with Greco-Roman medicine around the first century CE.

Herbalism 1.0—The Herbal

Dioscorides is generally regarded as author of the first definitive herbal—an authoritative original knowledge base of botanical remedies, pharmacy and therapeutics (although he included mineral and animal remedies). His *De Materia Medica* is the archetypal expression of Herbalism 1.0 (hereafter H 1.0) and of the herbal as a description of the materia medica by the expert practitioner-author.

In terms of medical theory, Dioscorides

Fig 2.
Graphic timeline of paradigms in Western herbal history



was more on the empiricist side of the rationalist-empiricist divide that has been identified as a primary animating dialectic of western medical history from the Hippocratic corpus onward, whilst his second-century successor Galen more famously expounded and expanded humoralism – an unreconstructed rationalist in vitalist clothing. However, from the epistemic point of view of herbal medicine, and also of our Kuhnian schema, the medical metaphysics of individual expert-authors are of less significance than the herbal as a scholastic description of their individual expertise and experience with *materia medica*.

In a way, we can say: The Herbal is The Paradigm. Historic expert-author herbals express a specific conception of the nature of an herbal remedy, of what knowledge of an herb is, and implicitly characterize the nature of the herb. Herbals present the *materia medica* in terms of the virtues or capacities of each herb. This means that herbal remedies are the kind of things that have the capacity or tendency to behave in different ways depending on who is using them, how, and in what context. Importantly, an herb is not defined by *what it does*, but by what (an expert author-practitioner says) it has *the power to do*. Knowledge of an herb is knowledge of its capacities or virtues, not of its actions. The picture of any herb is painted differently by different herbals and the virtues of an herb can be compiled as a collective aggregate of all its descriptors. The natures of herbs in this sense correspond to their Aristotelian natures, and the accounts of *materia medica* in herbals owe as much to classical scholasticism as to empiricism.

It is unclear to what extent the authorial content of the landmark historic herbals of H1.0 is truly primary and original as opposed to derivative, or even plagiaristic. In a later example such as [Maud Grieve's *A Modern Herbal*](#) published in 1931, the compilation process is explicit, the sources either acknowledged or at least known; however,

in the primary historic herbals (Dioscorides, Gerard et al) this is not necessarily so and is a proper subject for the new wave of herbal historians. However, the existence or extent of “copycat” descriptions in H1.0 herbals does not undermine the basic features we are focusing on in this argument.

I will argue later that a return to the concept of natures is an essential platform for understanding herbs in any Herbalism 3.0. Although the virtues described in H1.0 herbals correspond to natures, Aristotelian natures were always connected to essences. Essences are intrinsically unknowable; indeed the primary achievement of the Scientific Revolution was to banish natures (as unknowable essences) from modern scientific knowledge and methodology as an explanation of the behavior of things, and replace them by empirically measurable or otherwise knowable indices of what behaviors things exhibit.

In parentheses, from the perspective on history that motivates this text, 17th-century English herbalist [Nicholas Culpeper](#) and 16th-century physician/occultist [Paracelsus](#) are interesting standouts in the pantheon of H1.0 authors. Each in their own way was uniquely anti-establishment, and each of them eschewed humoralism with its replacement of essences by the rationalist cataloging of energetic qualities, suggesting instead that esoteric methodologies were more appropriate. For Culpeper this was astrology and for Paracelsus alchemy. In the context of their radicalism this could be interpreted as a prescient rejection of the inherent conservatism of humoral rationalism albeit replacing it with esoteric placeholders of alchemy and astrology as a means of “getting at” essences; in other words acknowledging the shortcomings of humoralism but recognizing the need to make the invisible visible. Rendering the essences knowable via motifs of “as above so below” and alchemical transformation/transcendence has implications for today

and the “making visible” of the capacities or natures of plant medicines and this will be explored in part two of this text in more detail. A less consequential aside is the double irony involved when western herbalists claim historic continuity with humoralism as a vitalist credential against charges that their system is “inferior” to traditional Asian medical systems due to its lack of comparable energetics of materia medica (or therapeutics).

Herbalism 2.0—The Monograph

The period of crisis in herbal medicine that marked the end of H1.0 spanned the last decades of the 19th century to the first few of the 20th. This transformative time in botanical history was driven by a complex interplay of external socio-political forces that precipitated a Kuhnian crisis period by stressing the already present internal contradictions of the H1.0 paradigm: its inbuilt inability to reparse expertise in materia medica in ways that clearly demarcated both conflicts and compatibilities with the rapidly developing ecosystem of mainstream medicine. The decisive shift was the absolute imperative for herbal medicine to reframe its legitimacy in terms of a medical landscape increasingly dominated by the emerging and bullish pharmaceutical industry in cahoots with a newly confident medical profession whose reductionist thinking underpinned its aggressively expanding socio-economic and clinical hegemony.*

Only Thurston, in his 1900 *Philosophy of Physiomedicalism*, critically encapsulated the entire dynamics of the historical juncture, and laid the theoretical foundations to meet and transcend its challenges. Still, this was too little too late, and Thurston’s text became perhaps the most unread epitaph in herbal history (Thurston 1900). The primary feature of H2.0 became the elimination of the author-expert as subject and object of herbal knowledge. The herbal was replaced by the

monograph; Eminence Based Medicine was replaced by Evidence Based Medicine.

If the monograph first emerged in response to political assaults, it also remained, through successive iterations, the primary go-to means of deflecting or neutralizing legal-regulatory initiatives intended to minimize the credibility and availability of herbal medicines. Internally, botanical monographs vary in emphasis from the analytical and quality-oriented through phytopharmacological to the more therapeutic, but in essence the monographic description of an herb is based on *measurables*, i.e. objective scientific data. Compared to the epistemic model of H1.0, the defining features of medicinal herbs in H2.0 no longer reside in their capacities, nature or their power to do, but in what they do. Virtues were replaced by actions. (The occasionally arcane terminology of herbal “actions” may have its provenance in a less reductionist past, but this is more etymological than substantive.) The primary scaffolding within which the monograph frames herb actions is in the final analysis based upon reductionist biomedical considerations, while even those disciplines with experiential origins such as pharmacognosy gradually became veneers on mainstream analytical chemistry and pharmacology. Meanwhile, features such as safety, toxicology and standardization absent from H1.0 (except rarely in the discussion of potentially poisonous herbs) became obligatory standard elements of every monographic account of an herbal medicine.

Both Sides of the Pond

Historically, there was something of a divergence between developments on different sides of the Atlantic, here covered briefly only to illustrate cultural variations on our theme. In the US, the closure of the last Eclectic Medical School in 1934 marked the definitive end of a two decade-plus debacle following the publication of

Compared to the epistemic model of H1.0, the defining features of medicinal herbs in H2.0 no longer reside in their capacities, nature or their power to do, but in *what* they do.

*See *Mandelbaum in this issue, p. 28.* – Ed.

the [Flexner Report](#), during which North American herbal medicine was effectively destroyed. Transplanted to England, and dogged by initial internecine rivalries, the herbal profession survived, albeit by a slender thread, even as it was eliminated in the US.

Despite finding some refuge in the nascent naturopathy movement, herbalism did not really resurface in America until reignited by the counter-cultural movement of the '60s. Then, in classic pioneer tradition, a handful of entrepreneurial individuals (aka hippies) began making and selling herbal extracts and giving classes on how to use them. Herbal education in the US still largely follows an apprenticeship model. There are dozens of schools and courses, but no generally accepted core curriculum or educational standards, often with ad hoc scientific and minimal if any real medical training (excluding the handful of official naturopathic schools whose mixed menu curricula feature botanicals – amongst other things). This created something of a vacuum in terms of any substantive underlying philosophical and medical underpinnings of herbalism per se which results in some culturally unique curiosities. There is, for example, a tendency in North American herbalism for individuals to feel they have to “invent” herbal “systems” of their own. Notable examples include the late [William Le Sassier's](#) *Triune System*, and southwestern herbalist [Michael Moore's](#) *Clinical Energetics*, and arguably could also include [Michael Tierra's](#) *Planetary Herbalism*, or more recently [Donnie Yance's](#) *Eclectic Triphasic Medical System (ETMS)*.

The same vacuum underscored the translation and publication of the Complete Commission E monographs by the popular herb advocate group The [American Botanical Council](#) in 1998, which represented a high water mark of what could be called “monograph madness” (Blumenthal et al 1998). That importing these irrelevant regulatory documents from Germany could

possibly be justified by suggesting they constituted a definitive model for the future foundation of US scientific herbal medicine, speaks volumes about the persistent subterranean aftershocks that followed the seismic destruction of H1.0 in the US.

In England, on the other hand, political pressures, always more muted (or perhaps just deceptively genteel), nonetheless impacted developments in the monograph “ecosystem.” The rather short [British Herbal Pharmacopoeia](#) (BHP) therapeutic monographs that the Scientific Committee of the British Herbal Medicine Association (BHMA) started publishing in 1971 were largely a response to Parliament's Medicines Act of 1968, and the herbs included were described with the predictable focus on safety, quality and efficacy. However, the short therapeutic sections of the early BHP monographs were insightful commentaries based on shared educational and clinical experience of the herb amongst UK professional practitioners rather than lists of scientific studies. The earlier BHP is a quite refreshing read today compared to the encyclopedic compilations of citations that pass for more recent monograph collections (BHMA 1983).

Internationally, regulatory imperatives increasingly supervened and came to dominate the herbal landscape toward the end of the 20th century, especially in the EU. The response, once again as political reflex, was the weighty [European Scientific Cooperative on Phytotherapy](#) (ESCOP) [monograph series](#), a formidable compilation intended to create a pan-European scientific rationale for herbal medicines that remains a showpiece and archetype of the strengths and limits of monographic herbal explication and of the gulf between a scientific and more tradition-oriented phytotherapy (ESCOP 2003). In retrospect, European phytotherapy straddled the divide as best it could, with emeriti such as Rudolf Fritz Weiss attempting the increasingly difficult task

of riding two horses simultaneously. Weiss should be singled out as an authoritative advocate for a theoretically coherent and unified (not integrative) concept of phytotherapy. Born in the 19th century, by 1985 already retired, he added a warning chapter to the sixth edition of his seminal *Lehrbuch der Phytotherapie* in which he painted a clairvoyant but detailed picture of the dangers of importing reductionist biomedical thinking into the phytotherapy that he had represented with nuance, deftness and refinement for so long. Weiss' essay, together with much of Thurston's 1900 *Philosophy of Physiomedicalism*, are arguably the most prescient and articulate theoretical contributions to the herbal literature (Weiss 1988, Thurston, 1900).

Straw Man Dates Aunt Sally³

Returning to our theme of the epistemic basis of the different paradigms, it was inevitable that the imperatives of the scientific monograph to reduce knowledge of the complexity of herbal therapeutics to pharmacologic actions and prescriber indications, while ignoring even the existence of underlying theoretical and philosophical assumptions involved, would sooner or later bite back. In various publications and other forms of herbal discourse, the initial uneasy tension between clinical expertise and scientific approaches increasingly became framed as an adversarial conflict between "traditional knowledge" and reductionist biomedical science.

The actual definition of traditional knowledge (TK) approaches is likely to set the fur flying in debates among herbalists; in the interests of brevity, here I will list some of its generic features. TK tends to advocate and adhere to a "whole plant" approach which is associated with several related core beliefs and principles of practice. Hence, TK pharmacy involves the use of whole herb, full spectrum extracts from fresh or dried herb material, usually as

aqueous or hydroethanolic extracts. This is related to the belief that phytopharmacology is characterized by synergy between the multiple constituents of a plant, which in turn implies that isolated and concentrated "active principles" are not "true medicines"⁴ but in reality ersatz pharmaceutical drugs. Whole plant ideology is often accompanied by a more "earth-centered" or naturalistic worldview in which separation from nature and from folk knowledge of natural remedies is seen as the inevitable by-product of the defects in advanced technological culture. The "whole plant" view tends to be associated with espousal of "wholism" in general (for example as in the "whole person") as a credential. Further, it often places unnecessarily high (or politically correct) value on indigenous or ethnobotanical information, "folk" traditions, and indeed shamanistic and spiritual approaches in which the plants are described as "teachers"; the "vitalist" epithet is often a short-hand descriptor identifying one or more of these proclivities.

Typically, the more strongly these positions are held, the more sharply are they opposed. In extremis, the hostile or negative views of biomedical science in this context tend toward a coloring book parody of science, wedded to ideological claims about science, ranging from it being an irrelevant and bankrupt materialist-reductionist delusion, through to conspiracy theories of science as a malefic tool of Big Pharma and corporate capitalism whose agenda is social control, including suppression of grass roots access to herbs – the science straw man. At the same time, traditional knowledge morphs into subcultural movements of a self-proclaimed "folk" herbal renaissance that fights the good fight against the evils of professionalism, scientism and other "very-bad-things" as Winnie the Pooh might say.

Metaphorically, we now have to get down with, not only the Straw Man, but with the Straw Man dating Aunt Sally. I

Herbal medicine and modern biomedicine may have a shared phylogeny, but the key to understanding this was always the plants themselves.

would venture their best bet for a long-term relationship and future happiness is therapeutic transformation of their caricature identities to transcend their otherwise historically limited estimated life span – or in what might here be dubbed a “psychokuhnian” check-in in light of the increasingly obvious anomalous and incommensurable data that threaten to intrude on their frivolities. Detailing this process in depth will have to wait until the second part of this article.

Here, I have proposed a conceptual foundation for articulating the historical trajectory of western herbal medicine based upon the premise that its current paradigm is in a ‘Kuhnian’ crisis. The core of clinical herbal *medicine* is defined by its view of herbal medicines. The metaphysics of materia medica are the foundation of our medicine, as Thurston and Weiss both clearly saw. Herbal medicine and modern biomedicine may have a shared phylogeny, but the key to understanding this was always the plants themselves. Today, preclinical and clinical science has progressed to a point well beyond its own “2.0,” but herbal medicine appears, like Gatsby, to be fighting for a future that tragically recedes into the past. Having set out some preliminary conceptual foundations here, a variety of lenses and tools will be employed in the next installment, from literary criticism and integral philosophy to complexity theory, bioinformatics and network pharmacology. In Part 2, I will use this potpourri of approaches to argue in detail how a viable future Herbalism 3.0 requires restoring the primacy of materia medica by retooling the H1.0 concept of *natures* or *virtues* of herbs with the insights of 21st century life sciences. ■

REFERENCES

- BHMA 1983. *British Herbal Pharmacopoeia*, Bournemouth, UK, British Herbal Medicine Association.
- Blumenthal, M., Busse, W., Goldberg, A., Gruenwald, J., T Hall, Riggins, C. & Rister, R. (eds.) 1998. *The Complete German Commission E Monographs*, Austin: American Botanical Council: Integrative Medicine Communications.
- ESCOP 2003. *ESCOP Monographs*, Exeter, UK, Thieme & European Scientific Cooperative on Phytotherapy.
- Foster Wallace, D. 2009. *This Is Water: Some Thoughts, Delivered on a Significant Occasion, about Living a Compassionate Life*, Little, Brown and Company
- Francia, S., Stobart, A. 2014. *Critical Approaches to the History of Western Herbal Medicine*, NY, London, Bloomsbury.
- Tobyn G., Denham A., Whitelegg M., 2011. *The Western Herbal Tradition: 2000 years of medicinal plant knowledge*, Edinburgh, Churchill Livingstone.
- Griggs, B. 1981 *Green Pharmacy*, Healing Arts Press.
- Kuhn, T. 1962. *The Structure of Scientific Revolutions*, Chicago, University of Chicago Press.
- Thurston, J. 1900. *The Philosophy of Physiomedicalism*, Richmond, IA, Nicholson Printing and Manufacturing.
- Weiss, R. 1988. *What is Herbal Medicine?* in *Herbal Medicine*. 6th ed. Beaconsfield, UK: Beaconsfield Publishers Ltd.

Notes

- 1 I was first inspired by the profound utility of this field by leftist philosophers Mary Hesse and Bob Young at Cambridge in the 1960s, but more recently have found the works of the feminist philosopher of science Evelylyn Fox-Keller, and the Stanford School authors Nancy Cartwright and John Dupre invaluable in formulating my thoughts on H3.0 here, and beyond.
- 2 Paraphrased from the definition of a true conservative attributed to W. Buckley.
- 3 For US readers, Aunt Sally is a metaphorical English term, like Straw Man, denoting a fair ground game figure deliberately set up by someone in order to knock it down.
- 4 Thurston’s terminology for herbal medicines (true medicines) as opposed to pharmaceutical drugs which he classed as poison.