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HERBALGRAM

The Journal of the American Botanical Council and the Herb Research Foundation

History of Botanicals in Medicine and Pharmacy

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NUMBER 42

ADVISORY BOARDS

Each issue of *HerbalGram* is peer reviewed by various members of our Advisory Boards prior to publication.

American Botanical Council

Herb Research Foundation

HERBALGRAM

The Journal of the American Botanical Council and the Herb Research Foundation

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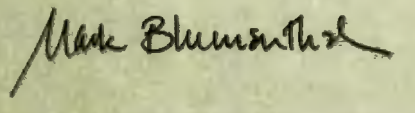
DEAR READER

We have wanted to publish this special History of Herbs issue of *HerbalGram* for several years. I still remember the day in the 1980s when, on the dusty shelves in a used bookstore, I came across two beautiful out-of-print books, sold as a pair. *Great Moments in Medicine* and *Great Moments in Pharmacy* by George Bender with the beautiful paintings by Robert Thom, have been a cornerstone of my medical history shelves ever since. Published by the Parke, Davis pharmaceutical company, these paintings were also printed as posters that graced the halls and labs of probably every school of medicine and pharmacy in the U.S. A few years ago we received the kind permission from Warner-Lambert, now the parent company of Parke, Davis, to reprint our choice of these paintings. Those selected have some relation to botanical medicine. At one time, Parke, Davis, like most pharmaceutical firms in the 1800s and early 1900s, was a grower and processor of botanical medicines.

The history of herbal medicine in western culture is beautifully documented in Barbara Griggs' *Green Pharmacy*, first published in 1981 and recently revised in a new 1997 edition. Griggs traces herbs in medicine from antiquity to the present in a passionate historical narrative. She has graciously consented to our reprinting of the chapter on the "Quack's Charter," aka the "Herbalist's Charter," signed into law by England's King Henry VIII to ensure the right of herbalists to practice the healing arts in the face of mounting monopolistic attempts by other practitioners of the times. The Herbalist's Charter today constitutes an important element in British common law, and has resulted in the flourishing of "medical herbalists" in the UK, Canada and Australia—herbalists who have graduated from a four-year post graduate school (National Institute of Medical Herbalism) and enjoy a quasi-official legal status.

We also present a detailed and masterful account of the history of botanical medicine in the naturopathic medical movement in the U.S. Enjoying a significant resurgence today with increased consumer interest in natural health, naturopathic history includes elements of Eclectic medicine and other medical sects of the 1800s that relied extensively on herbal medicines, whole foods, and hygienic practices. Francis Brinker, the author of this article, is himself a graduate of the National College of Naturopathic Medicine in Portland, Oregon. He is the author of several books and monographs on herbs and phytotherapy.

Herbs have enjoyed a rich tradition as the foundation of medicine, pharmacy, and folk medicine. We regret that space limitations do not allow us to include more about this noble history. Hopefully, we will revisit this topic in future issues.



HERBALGRAM

The Journal of the American Botanical Council and the Herb Research Foundation

Number 42 • Spring 1998

DEPARTMENTS

6 ABC News
ABC Receives Plants Donated by USBG; Commission E Progresses; *HerbalGram* Nominated for Award; Progress at Case Mill, ABC's New Home; Painted Ladies; Contributors to ABC's Capital Campaign; ABC Receives Frontier HerbFest Proceeds; ABC Activities; ABC Establishes Black Cohosh Education Project; Rainforest Update

9 HRF News
New Research Director; South Africa Cultivation Project in Planning Stages; HRF Activities

10 Herb Blurbs
Mint, 1998 Herb of the Year; Illegal Bad Breath

11 Research/World News
AHP News: Marilyn Barrett Joins AHP, AHP Publishes Monographs, Steering Committee Named; Elder of Salish Nation Recipient of Conservation Award; Phase II Study on Saw Palmetto for BPH; Authorization Center for Chinese Herbal Medicines; Listen Up Awards; Cox Named NTBG Director

Passionflower, *Passiflora incarnata.*
Photo ©1997 Steven Foster.
See research information on page 19.

14 Research Reviews
JAMA Study Reports on Positive Results with Ginkgo in Alzheimer's; Echinacea Safety Confirmed; Strong Association Between *Allium* Consumption and Cancer Protection; *Vitex* More Effective Than Pyridoxine in PMS; Nettle Leaf Enhances Effectiveness of Anti-inflammatory Drug; Mahonia Ointment in the Treatment of Psoriasis; Feverfew Effective in Migraine Prophylaxis; Phytotherapy Aids in Benzodiazepine Withdrawal

21 Plant Patents
Hypoglycemic Compounds: Pycnanthus, Cryptolepis, Cryptolepine; Ginkgolide

22 Legal and Regulatory
Canadian Regulatory Update; AHPA Seeks Modification of Herbal Extract Provisions; AHPA's Recommended Label Language for Kava Products

60 Ethnobotany
The New Ethnobotany: Sharing with Those Who Shared, an Interview with Michael Balick and Rosita Arvigo

64 Market Report
Market Report by Peter Landes; Herbal Products are Driving Supplement Industry Growth; OTC Herbal Medicines Worth Millions in UK in1996; Top Selling Herb Supplements in Mass Market—1997

66 In Memoriam
Margaret B. Krieg; Percival Hezekiah Reynolds; Aaron J. Sharp; Adelma Simmons

68 Book Reviews

72 ABC Catalog Top Ten Book Sales

73 Letters

75 Access

76 Calendar

77 Classified

FEATURES

The Herbalist's Charter
Reprinted with permission from *Green Pharmacy* by Barbara Griggs

26

De natura stirpium libri tres, 1536, courtesy of the Hunt Institute for Botanical Documentation, Carnegie Mellon University, Pittsburgh, PA.

The Role of Botanical Medicine in 100 Years of American Naturopathy
by Francis Brinker, N.D.

49

A Pictorial History of Herbs in Medicine and Pharmacy
Paintings and text excerpted from the book published by Parke, Davis & Co.

33

Monastic herb garden. Painting by Robert Thom from *Great Moments in Pharmacy*.

Cover: The history of herbs in medicine and pharmacy and its documentation is not only rich in knowledge, but replete with art as well. All of the images on the cover will be found in articles throughout this issue. For further information on art in herbal documentation, we refer you to *The Illustrated Herbal* by Wilfrid Blunt and Sandra Raphael, published by Thames and Hudson, Inc.

HerbalGram is printed on recycled paper.

ABC Receives Plants Donated by USBG

The United States Botanical Garden (USBG) in Washington, D.C., closed temporarily at the end of September 1997 for remodeling. The Garden is slated to reopen in three years. Since there is so much to be done, the project may take as long as four years. Currently, USBG is giving away many of the plants to various organizations and private collectors, while some will be removed and cared for by the USBG staff until replanted into the refurbished conservatory.

The USBG offered some of the plants to ABC. Our special volunteer dug up a large variety of medicinal, edible, desert, and historically significant plants for planting at ABC's new Herbal Education and Research Center at the Case Mill Homestead. Many of the plants are varieties used in Ayurvedic and Traditional Chinese Medicine. These are native to the U.S.

Dr. Jim Duke's assistant, Andrea Ottesen, was instrumental in the on-site digging and transfer of the material to ABC in Austin. As soon as they arrived all the plants that are hardy in Central Texas were planted by staff and volunteers. ABC has built a greenhouse to house those plants that are not winter-hardy in the Texas climate. —*Gayle Engels*

HerbalGram Nominated for Award

In late 1997 *HerbalGram* was nominated by the editors of the *Utne Reader*—the leading publication reviewing the alternative press—as a finalist in the 9th Annual Alternative Press Awards in the category of Lifestyle Coverage. Other categories included Best New Title (*Herbs for Health* nominated), General Excellence, Reporting Excellence, and coverage of science and the environment, cultural, international, political, social, and spiritual topics. The awards were announced in the January/February issue of the *Utne Reader*. It reached the newsstands December 23, 1997.

Commission E Progresses

In an effort to make the final version of the English translation of Commission E publication as up-to-date as possible, ABC has included the most recent editorial developments. At this point all monographs have been translated and edited. They have been cross-referenced to the appropriate therapeutic, chemical, and taxonomic indices. Our editors are currently working on completing the extensive Introduction (currently over 25,000 words, 40 pages in final layout form). This introduction is an important part of the book and could not be finished until all other aspects of the book were completed. The Introduction gives an overview of the U.S. regulatory situation—the book has, in essence, increased in context and relevance. It also gives an extensive background on the German market for phytomedicines, the legal and regulatory framework for phytomedicines in Germany, the criteria used by Commission E in assessing the herbs, an analysis of the monograph system, comments on specific monographs, and much more.

We have received peer review feedback from three members of Commission E and we are currently revising the Introduction to reflect this feedback. Inclusion of the revisions from members of the Commission will result in a publication with increased usefulness and authority. One reviewer, a member of the Commission for 16 years since its inception, said, "I want to congratulate you on the excellent Introduction to the Commission E monographs in the English language. Your book will be very useful not only for the U.S., but also for the European Community and the World Health Organization."

After we revise the Introduction, we will compile the General Index. The book has now grown to an estimated 665-675 pages, significantly larger than the 450-500 pages envisioned several years ago at the start of the project.

Publication of this book will result in a unique, useful, and highly valuable addition to the reference library of herbal knowledge. — *Mark Blumenthal*

Progress at Case Mill, ABC's New Home

NEW PLEDGE PROVIDES MOMENTUM

Exciting progress has been made on the Capital Campaign for the Case Mill Homestead and on renovations at the site. At the end of January, more than $350,000 in gifts and pledges had been raised toward the first phase goal of the campaign—$660,000. "We are pleased that our supporters have pushed us past the halfway mark of our campaign," said Wayne Silverman, Chief Administrative Officer. "Now we need to all work together to secure the remaining $300,000 required for Phase I." In addition, half of the renovations have been completed in preparation for a move-in date by the end of spring.

Madis Botanicals, a division of PureWorld, pledged $50,000 to the campaign, and has selected the new Annex Building for a name dedication. Madis/Pure World is the second company to contribute at that level. The Annex will be the focal point for the public and professional education functions of the new facility until the permanent Herbal Education and Research Center is built. Paul and Natalie Koether, chairman and president of Madis/Pure World respectively, said, "We wanted to acknowledge the work of ABC by aligning ourselves with a part of the facility that will move ABC into a new and expanded role. This facility will provide a learning environment for health professionals, industry and the general public, and we are proud to help create it."

The first phase consists of renovations to the 140-year-old house that will become the administration building, the carriage house (for storage), the gardens, and the new Annex Building, the first home of the Herbal Education and Research Center.

Last year, Enzymatic Therapy also made a pledge at the $50,000 level. "Key leadership in the herb industry is making lead gifts," commented Mark Blumenthal, ABC Founder and Executive Director. "Although we are expanding the campaign to foundations and corporate giving outside the herbal industry, we hope other key leaders of the herbal and dietary supplement industries will provide funding to quickly move us to our Phase I goal."

The future is taking shape with Phase II in the planning stages. In Phase II, ABC will build an 8,000 square-foot building featuring a library and multimedia resource center, classrooms and staff offices, and a large multi-purpose room. The goal for this next phase is currently $2.5 million. The push for this funding will commence when Phase I is completed and ABC is fully functioning in the new site. — *Lavinia Baumhoff*

Painted Ladies

Plans are in the making to paint the 140-year-old Case Mill facility in the "Painted Lady" style to bring out the character and charm of this beautiful, historic building. The Painted Lady tradition was started in the 1960s with the preservation and painting of Victorian houses in San Francisco using bright, cheerful, tastefully coordinated colors on the ornate wood trim and moldings.

ABC plans to model the exterior color plan after this style using a complex color scheme, creating a work of art from this landmark structure, and involving restoration artists in the planning and execution of the project. Case Mill will then be not only a mecca for students and lovers of herbs, but a compelling and attractive addition to the tour lists for visitors to the Central Texas area.

ABC is looking for an individual, family, or company to underwrite the Painted Lady project with a pledge of $50,000 (which may be paid over one to three years). In addition, ABC seeks broad participation with multiple $1,000 and $500 gifts for this endeavor. The Painted Lady project is a perfect opportunity for people with an interest in historic preservation to participate in the creation of ABC's new home. Contributors may wish to honor or remember a family member or loved one with a beautiful legacy in living color. Contact Wayne Silverman or Lavinia Baumhoff at ABC for information about participation in this exciting project. — *Lavinia Baumhoff*

An example of a Painted Lady, The Steamboat House in Austin, TX. ABC is raising funds to paint the Case Mill Homestead in this fashion.
Photo by Barbara A. Johnston.

Contributors to ABC's Capital Campaign

The following companies and individuals have made and pledged contributions toward Phase I: The Case Mill Capital Campaign

Visionaries - $250,000 and greater

Architects - $100,000 to $249,999

Builders - $50,000 to $99,999

Enzymatic Therapy* Madis Botanicals/Pure World*

Planners - $10,000 to $49,999

Bio Botanica* Pharmaton Capsugel*
Stryka Botanics Co. Nature's Herbs* Whole Foods Market*
Nature's Way

Supporters - $5,000 to $9,999

Mark Blumenthal* Henkel Corp. Cosmopolitan TradingKavaCo.*
Indena USA ExtractsPlus Lichtwer Pharma US Inc.
Fetzer Foundation Nature's Bounty General Nutrition Centers (GNC)

Other Contributors

American Ingredients, Metagenics, Celestial Seasonings, Müggenburg Extrakt, Chai-Na-Ta Corp., New Hope Communications, Chemco Industries, Inc., NOW Foods, ast Earth Herbs, Pharmanex, Euromed, Pharmavite, Flora Manufacturing & Distributors, Pharmline, Inc., Steven Foster, PhytoMed International, Haworth Press, Prince of Peace Enterprises, Healthnotes Online, Pro Pac Labs, Herb Pharm, Pure Gar, Herbs For Kids, QBI–Quality Botanical Ingredients, Hilary's Distribution, Swedish Herbal Institute, Indiana Botanical Gardens, Traditional Medicinals, Interweave Press, Trout Lake Farm, Jason Natural Products*, Tsumura, Dr. and Mrs. Steven R. King, Wakunaga of America, Inc., M.W. International, David Winston, Herbalist & Alchemist, Mark Plotkin, Ph.D.

* Multi-year pledge

Left. Renovation work progessing at the Case Mill Homestead, ABC's new administrative headquarters.
Photo by Joni McClain.

ABC Receives Frontier HerbFest Proceeds

The American Botanical Council was the recipient this year of the profits from the Frontier HerbFest '97, produced by Frontier Natural Products Co-op. The $12,500 was allocated among three ABC programs: the Ginseng Evaluation Program, the production of the German Commission E Monographs, and the new Black Cohosh Education Project, as recommended by Frontier staff.

Designed as a public service, the theme of HerbFest "97 was "Preserving the Balance—Body, Spirit, Earth." The event, attended by more than 1,400 people, was held August 1997 in Norway, Iowa. Frontier decided that net profits from this event should go to enhance the field of herbal education. HerbFest '98 will be August 14-16 in Norway, Iowa. For more information, call 1/800/609-3275.

"We wanted to acknowledge the excellent contribution that ABC makes to the public, professionals, and this industry. ABC's programs enhance the purpose and spirit of HerbFest," said Jeff Tripician, Vice-President of Marketing for Frontier. — *Wayne Silverman*

ABC Activities November '97 - January '98

Highlights of presentations and major papers by ABC Executive Director Mark Blumenthal

Bioneers, San Francisco, CA, "Green Medicine," "Herbal Medicine"; **Massachusetts College of Pharmacy**, Boston, MA, "Herbs and Phytomedicines in Today's Pharmacy: Issues of Safety, Efficacy, Label Claims, and Quality Control"; **DIA Conference on Botanicals**, Washington D.C., "Botanical Interactions with Drugs and Other Products"; **Alternative Care Therapy (ACT) Conference,** Dallas, TX, Focus on Tissue Cleaning/Rainforest; **10th District Dental Society Monthly Meeting,** Austin, TX, "Drug Dis-

continues on page 72

ABC Establishes Black Cohosh Education Project

In an effort to provide the public with educational materials that address new and expanding needs in the area of menopausal symptom relief, ABC has established the Black Cohosh Education Project. This project will consist of a new title in ABC's Botanical Booklet series and an overview of literature related to black cohosh that will appear in *HerbalGram* later this year or early in 1999.

Traditional uses and common knowledge of black cohosh (*Cimicifuga racemosa*) for the relief of menstrual cramps and menopause dates back to American Indians and to American colonists. Research over the past few years has confirmed those benefits and has paved the way for uses to treat other conditions. As a result, new markets for black cohosh are being created. Health practitioners, manufacturers, distributors, retailers, and, ultimately, consumers will benefit from sound, clear, and responsible information on the benefits of black cohosh.

Major funding for this project was provided by Madis Botanicals, a division of Pure World, with additional support from Frontier Natural Products Co-op.

One of the products of this project, the Botanical Booklet on Black Cohosh, will be peer reviewed, scientifically accurate, and timely. The literature review will be produced as a freestanding piece inserted into *HerbalGram*. These materials will be widely distributed through many of the channels available to ABC and the companies and organizations that depend on ABC. They will qualify as "third party literature" in compliance with the Dietary Supplement and Health Education Act of 1994 and will be available to industry, health professionals, journalists, and consumers.

Orders for the Botanical Booklet can be placed with the ABC sales office. Additional support is requested to provide the remaining funding for the literature review portion of the project. Contact Wayne Silverman at ABC, 512/331-8868, for information about underwriting this important review. — *Lavinia Baumhoff*

Pharmacy from the Rainforest, 1998-99 tours

The American Botanical Council, in conjunction with the Texas Pharmacy Foundation, International Expeditions, Inc., and ACEER Foundation, announces the dates for our upcoming ethnobotanical *Pharmacy from the Rainforest* expeditions. Our most popular expedition to date, the fifth annual workshop in the Peruvian Amazon will be October 31 through November 7, 1998. In addition, we are planning to return to Belize in early 1999 (February 21-28).

Each expedition includes accredited workshops and field excursions designed to foster an appreciation for and an understanding of the importance of medicinal plants. These will be led by prominent experts in the fields of phytomedicine, pharmacognosy, and ethnobotanical and ethnobiomedicinal research, including Mark Blumenthal, Executive Director of the American Botanical Council, and James A. Duke, Ph.D., retired botanist from the USDA. Registered pharmacists can earn a full year of ACPE-approved continuing education credit for participation in a *Pharmacy from the Rainforest* expedition.

For further information about these exciting expeditions, please contact: Ginger Webb at 512/331-8868 or via email: <gingerw@herbalgram.org>.

Workshop leader Hardy Eshbaugh at the in situ medicinal plant trail at ACEER during the October 1997 Pharmacy From the Rainforest program. Photo ©1997 Ginger Hudson

NEW RESEARCH DIRECTOR

The Herb Research Foundation is pleased to announce that Stephen Gillespie, Ph.D., has joined the staff as Research Director. Dr. Gillespie comes to HRF from the University of Wyoming School of Pharmacy, where he taught medicinal chemistry and pharmacognosy and developed courses in ethnopharmacology and phytomedicines. He has also served on the chemistry faculties of the University of Iowa and Indiana University's Cooperative Program in Malaysia. His recent research activities include a phytochemical investigation of Wyoming Ligusticum species (including osha root) as well as a pilot study of behaviors, motivations, and patterns of herbal medicine use by consumers.

Dr. Gillespie is the author of numerous articles and has presented papers at a variety of international and national medicinal plant conferences. A registered pharmacist with a keen interest in educating health care professionals about herbs, he has written continuing education lessons on botanicals for pharmacists and conducted seminars on using herbs in clinical practice for nurse practitioners. At HRF, Dr. Gillespie will devote his time to botanical research services, review and updates of information databases, and literature acquisitions.

SOUTH AFRICA CULTIVATION PROJECT IN PLANNING STAGES

The remarkable first-year success of HRF's Malian hibiscus-growing project has laid the groundwork for a similar cultivation venture in South Africa. Under the sponsorship of the Africa Bureau of the U.S. Agency for International Development (USAID), HRF has teamed up with the Agricultural Research Council of the South African Ministry of Agriculture to develop agribusiness opportunities in South Africa for crops for which a market is already well established. The Northern Cape has been targeted as an appropriate area in which to research potential export crops, and test crops are scheduled to be planted in September, 1998 at the beginning of the South African growing season.

At present, there is little or no cultivation of medicinal herbs in South Africa. Sustainable herb cultivation will allow small farmers in South Africa a chance to create a profitable niche for themselves in the highly competitive botanicals marketplace. These farmers are currently at a disadvantage, because they lack the resources to compete in the well-established fruit, flower, and vegetable markets now dominated by large producers. Sustainable herb cultivation offers the potential to bolster local rural economies and improve quality of life for thousands of farming families. Because of its location in the southern hemisphere, South Africa also has the opportunity to become one of the only producers of off-season herbal raw materials, which would be available for sale at a time when world market prices are at their peak.

An additional project goal is to protect and preserve native South African plants and the traditional healing system of South Africa by identifying and cultivating regional medical plants now endangered by overcollection. Currently, at least 60 percent of the South African population relies exclusively on traditional plant-based medicines for primary health care. Most, if not all, of these plant medicines are gathered from the wild. Now, displaced rural people are immigrating to urban areas such as Cape Town and Johannesburg, and no longer have access to the traditional folk medicines which have formed much of the basis of their self-care.

At the same time, the increasing demand for wild South African medicinal plants for export and domestic use has created great environmental pressure on local plant populations. This situation has forced the closing of some areas to collection, further increasing the pressure on other areas. Exhaustion of botanical resources presents a threat not only to the environmental well-being and biodiversity of South Africa, but would result in the elimination of the traditional medicinal system on which such a large proportion of the population depends. Identification and cultivation of threatened plants will reduce demand on wild populations and help preserve the South African traditional healing system by ensuring a continuing supply of native medicinal botanicals.

— *Rob McCaleb and Evelyn Leigh*

HRF ACTIVITIES: SEPTEMBER 1997 - JANUARY 1998

Highlights of presentations and papers by HRF President Rob McCaleb

Press Briefing, Natural Products EXPO, Baltimore, MD, September 19, 1997.

Cost Saving Strategies & Advances in Hormone Intervention Therapy: Long Term Treatment & Prevention. Boston, MA, September 22-23, 1997. Guest Presenter: "Phytotherapy for Menopause."

Natural Products EXPO. Baltimore, MD, September 18-21, 1997. Guest presenter: "Regulatory Update and Good Research Protocols for Botanicals."

Herbal Health Media Seminar, New York, September 30, 1997. Sponsor: Warner Lambert.

Nonprescription Drug Manufacturers of Canada. Ontario, Canada, October 6, 1997. Guest presenter: "Emerging Opportunities for Botanicals in Healthcare."

Columbia University, College of Physicians & Surgeons, Botanical Medicine in Modern Clinical Practice Conference. New York, NY, October 13-17, 1997. Guest presenter: "Botanical Products: Quality, Sources, Resources and Assessment;" and "Botanical Shop: Sampling Botanical Products."

Kaiser Northern California. Vallejo, CA, October 25-26, 1997. Guest presenter: "Botanicals in Natural Healthcare: Clinical Evidence, Information Resources, and Product Sources and Assessment."

Exploding Botanical Medicines Market Conference. San Francisco, CA, October 27-29, 1997. Guest presenter: "Leading Botanicals for Clinical Use."

Seventh on 6th, New York, November 6, 1997. Media seminar sponsor: Warner Lambert.

Second World Congress on Medicinal and Aromatic Plants for Human Welfare. Organized by the International Council for Medicinal and Aromatic Plants, International Society for Horticultural Sciences, and the Sociedad Argentina para la Investigación de Productos Aromaticos. Mendoza, Argentina, November 10-15, 1997. Guest presenter: "Registration of Herbal Preparations as Drugs" and "Technical and Legal Aspects of the Regulation of Phytomedicines."

Botanical Agribusiness in Mali: Focus on Hibiscus. Mali, Africa, November 25, 1997. Sole presenter at day-long workshop for businesses. Sponsored by USAID.

HERB BLURBS

Mint, 1998 Herb of the Year

Pennyroyal, *Mentha pulegium*.
Photo ©1996 Steven Foster.

Mint (*Mentha* x *piperita* L., Lamiaceae) is the International Herb Association's choice for 1998 Herb of the Year. Easily grown in some variety in every region of North America, mint was selected for its adaptability, fragrance, flavor, and use in maintaining health. Mint has long been popular worldwide for its distinctive flavor, essential oil, and as a valuable garden decorative.

Mints grow both cultivated and wild throughout the world, with over 600 named species. Mints vary in size from the very tiny, bright green Corsican Mint (*M. requienii*), through the tall, fuzzy, gray-leafed Apple Mint (*M. suaveolens*). Leaf color varies from deep green, to reddish purple, and even silver. Mint is mentioned in the Bible (Matthew 23:23, Luke 11:42), and in mythology, the nymph Mintho—beloved by Pluto—was transformed into a mint plant by Pluto's jealous wife, Proserpine. As a plant, Mintho lost the beauty of a nymph, but continued to attract men by her freshness and lovely scent.

Mint will be spotlighted during the International Herb Association's National Herb Week, May 4-10. National Herb Week is an opportunity to introduce others to the many joys of mints, and to provide educational information about the propagation, history, culture, and use of herbs in everyday living. IHA encourages member businesses and other organizations, garden and herb clubs, nurseries, garden shops, and children's groups to join in celebrating herbs throughout this week.

Information packets, which include fact sheets on mint, recipes, and a source sheet for plants and other products, are available from the International Herb Association. Contact IHA, P.O. Box 317, Mundelein, IL 60060. Ph: 847/949-4372. Fax 847: 847/949-5896. Email <IHAOffice@aol.com>. Website <http://www.HERB-PROS.com>. *—Dawnelle Malone*

Garlic, *Allium sativum*.
Photo © 1997 Steven Foster.

Illegal Bad Breath

While not quite a case of assault with a deadly vegetable, an Australian man has been convicted of breathing on a policeman after chewing garlic.

Local media reported that Jeff Pearce was convicted of assault in a Perth court after admitting he had deliberately chewed a clove of garlic and then breathed into a policeman's face after being pulled over for a traffic offense.

A section of the local criminal code defines assault as the direct or indirect application of force, including gas or odor, in such a manner as to cause personal discomfort.—*Barbara A. Johnston*
[*Commercial Appeal*, Apr. 21, 1997.]

B. C.

BY JOHNNY HART

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AHP News

AHP PUBLISHES MONOGRAPHS

The AHP announces the publication of its first monograph on St. John's wort (*Hypericum perforatum*). Published by the American Botanical Council and distributed as a special insert in *HerbalGram* No. 40, this monograph represents 18 months of work by the AHP staff, its authors, and reviewers. Reviewers include medicinal plant experts from around the world. This monograph is the most comprehensive and accurate review of St. John's wort in English. Copies of the monograph are available directly from the AHP or American Botanical Council with a check or money order for $4.95 U.S. to the address below.

A great amount of consumer interest was stimulated regarding the herb as a result of an ABC-TV *20/20* special which focused on the widespread use of St. John's wort in Europe for the treatment of depression and on studies which concluded that St. John's wort is as effective as standard antidepressant medications for the treatment of mild to moderate depression, with almost no adverse side effects.

AHP has begun the development of monographs for the botanicals Bilberry (*Vaccinium myrtillus* L., Ericaceae) and Ginkgo (*Ginkgo biloba* L., Ginkgoaceae). The process of collecting and translating has begun.

STEERING COMMITTEE NAMED

AHP has also recently established a steering committee of analytical chemists who will guide the AHP in choosing the most appropriate analytical methods for inclusion in the AHP monographs. The committee consists of analytical chemist Glenn Larkin, M.S.C., referee for the Association of Analytical Chemists Botanical Methods Committee, Amitabh Chandra, Ph.D., analytical chemist for Nutraceutical Corp., and Jeffrey Hust, Ph.D., Senior Staff Scientist for Hershey Foods Tech Service.

Contact AHP, Box 5159, Santa Cruz, CA 95063 or ABC, P. O. Box 201660, Austin, TX 78720.

Elder of Salish Nation Recipient of Conservation Award

Indigenous people are custodians of generations of wisdom concerning the management of natural resources. The Seacology Foundation, based in Springville, Utah, seeks to recognize and honor those who have faithfully guarded and protected plant and animal poulations. This year's award goes to Mary Thomas, an Elder of the Secwepemc (Shuswap Interior Salish) Nation of British Columbia, Canada, for her conservation work and vision in founding the Salmon River Watershed Coalition. Paul Cox, Ph.D., of the Foundation, flew from Sweden to present the award. The Seacology Foundation is funded by Nature's Way and NuSkin International.— *Barbara A. Johnston*

Phase II Study on Saw Palmetto for BPH

A Phase II double-blind study of saw palmetto for benign prostatic hyperplasia (BPH), using about 50 patients, will begin shortly at centers in four locations in the U.S. PharmaPrint,™ the company conducting the study, submitted the investigational new drug application (IND) to the FDA in July 1997, the first-ever submission to the FDA for an herbal product based on the PharmaPrint Process. According to Elliot Friedman, Chairman and CEO of PharmaPrint, the start of the Phase II trial marks another important step toward bringing an entirely new generation of herbal medicines to market—creating truly standardized herbal products based on the demonstrable bioactive components in each botanical. An IND for St. John's wort is planned for submission in December of this year.

According to the company, the PharmaPrint Process provides the technology necessary to 1) identify, quantify, and control the bioactive components of an herbal pharmaceutical; 2) determine the activity of each component in a specific bio-assay; and 3) ensure the components are present in predetermined quantities for a given manufactured herbal batch, using chemistry and biology to define specifications for consistent manufacturing. — *Barbara A. Johnston*

[PharmaPrint press release. Sept. 8, 1997.]

Saw Palmetto berries, *Serenoa repens.* Photo © 1998 Steven Foster.

Authentication Center for Chinese Herbal Medicines

The Royal Botanic Gardens, Kew, one of the world's leading botanical institutions, has developed a funding proposal for the establishment of an "Authentication Centre for Traditional Chinese Medicine." The proposal, a collaboration with Guy's Hospital, calls for funding to create a center of excellence for the identification of Chinese medicinal plants in international trade. The center will provide specialist resources and expertise to identify and check the quality of the 400-500 Traditional Chinese Medicine (TCM) herbal species commonly used in the West, where TCM has become increasingly popular in recent years. Kew Gardens, with its long history of plant science and the resources of its vast herbarium, library, living collections and laboratories, is ideally suited to develop such a center. The goal of this collaborative venture is to build a resource that will provide a long-term solution to ensuring a safe and ethically traded supply of traditional Chinese medicinal herbs to all those who wish to use them.

With an almost 6,000-year history of use in China, herbal TCM owes much of its initial popularity in the West to its effective treatment of the chronic diseases eczema and psoriasis, for which Western medicine has been unable to offer effective long-term solutions. A successful "Western-style" clinical trial was reported in the UK in 1992 using a TCM formula for treating eczema. Other medical conditions treated with herbal TCM include arthritis, asthma, HIV, malaria, and rheumatism, along with numerous gynecological conditions, and a variety of minor but common ailments, especially stress, insomnia, and fatigue. In addition to the wide range of conditions treated, the side effects of herbal TCM are few compared to Western medicine. In the UK alone, over one million herbal TCM prescriptions are written every year. Unfortunately, the identity and quality of herbs used can be highly variable. Lack of adequate herbal quality control regulations is a factor, as is the over-exploitation of medicinal plants from the wild. Already in some cases, poor quality, adulterated, substituted, and even fake herbs have penetrated the international market, leading to associated health risks.

The Kew Gardens authentication center would play a key role in addressing these issues, by helping to ensure the identity and quality of the herbs in use, both in the UK and the West as a whole. Scientific documentation of each species will include herbarium specimens, living plants, crude drug samples, chemical and DNA fingerprint profiles, anatomical slides, and supporting literature. Included will be representatives of poor quality herbs (e.g., those with low concentration of active constituents), together with substitutes, adulterants, and fakes. Designed for easy access by a wide range of groups including traders, medical practitioners, regulators, plant chemists, TCM students and other researchers, the center would be an internationally important resource for pharmacognostic identification and documentation of raw materials used in Chinese herbal medicine. Currently no such facility exists in the West. — *Dawnelle Malone*

[Royal Botanic Gardens, Kew. 1997. Funding Proposal. *Traditional Chinese Herbal Medicine: An Authentication Centre for International Use.*]

Listen Up Awards

In January 1998, the audio publication, "The Vegetable Chronicles," was mentioned in the *Publisher's Weekly* roster of 1997 "Listen Up Awards" for best spoken audio publication in the category for health audios, with tapes from the company the top listing in the category. All other awardees were major publishers. In an award for a specific audio publication, *Booklist* cited "The Medicine Garden" by producer David Freudberg, in its "Best of 1997" year-end roundup. The Medicine Garden is a set of audio cassettes, featuring physicians, pharmacy experts, and others who describe the sensible uses—and limitations—of herbal medicine. The project was funded in part by General Nutrition Centers (GNC), Nature's Way, and the Herb Research Foundation. (See article in *HerbalGram* #37, page 8. The Medicine Garden is available from the ABC catalog, #701.)

Cox Named NTBG Director

Dr. Paul Alan Cox, a botanist who has won international recognition for his work in saving tropical rain forests in Samoa, has been appointed Director and Chief Executive Officer of the National Tropical Botanical Garden, directing four tropical botanical gardens and two preserves in the Hawaiian Islands and a small estate, The Kampong, in Coconut Grove, Florida. Dr. Cox has traveled extensively throughout Polynesia for his research in traditional native medicinal uses of plants and ethnobotany—the study of economic and social uses of plants.

His work in preserving the Samoan rain forest was the subject of a film documentary, "Nafanua: Saving the Samoan Rain Forest," produced by Scandinature Films with the Australian Broadcasting Corporation. Dr. Cox also helped gain protective status for the Pacific flying foxes, pollinators and seed disseminators for some rare and important tropical plants.

He has specialized in research with traditional medicines, leading to a patent with the National Cancer Institution for an anti-HIV compound. He shared the Goldman Environmental Prize of $75,000 for his work in Western Samoa and is a prolific writer and international lecturer. He is the author of *Nafanua, Saving the Samoan Rainforest*, just published by W. H. Freeman. — *Barbara A. Johnston*

Paul Alan Cox. Photo © Mark Philbrick, Brigham Young University

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JAMA Study Reports on Positive Results with Ginkgo in Alzheimer's

Results of a multicenter study published in the *Journal of the American Medical Association* (JAMA) indicate that ginkgo extract (*Ginkgo biloba* L. [Ginkgoaceae]) can be of benefit in the treatment of Alzheimer's disease and multi-infarct dementia (LeBars *et al.*, 1997). The authors asserted that the improvement seen in patients with Alzheimer's could be equated with "a six-month delay in the progression of the disease." These results are particularly promising in light of the fact that no satisfactory treatments currently exist for the management of this common and devastating condition.

The placebo-controlled, double-blind study investigated the effects of a standardized ginkgo extract in 309 patients with mild-to-severe dementia associated with either Alzheimer's disease or multi-infarct dementia. Patients were randomized to receive 52 weeks of treatment with placebo or ginkgo extract at a dose of 40 mg three times a day, a total daily dose of 120 mg. At 52 weeks, 202 patients were included in the endpoint analysis, which was based on standard tests of cognitive impairment, daily living and social behavior, and general psychopathology.

The researchers reported that 27 percent of patients who provided data for the 52-week analysis experienced at least a four-point improvement on the 70-point Alzheimer's Disease Assessment Scale-Cognitive subscale (ADAS-Cog), compared to 14 percent in the placebo group. Daily living and social behavior were deemed improved in 37 percent of ginkgo patients, compared to 23 percent of those taking placebo, as measured by the Geriatric Evaluation by Relative's Rating Instrument (GERRI). In contrast, the GERRI showed that 40 percent of patients taking placebo experienced a worsening of their condition, while worsening was seen in only 19 percent of those taking ginkgo.

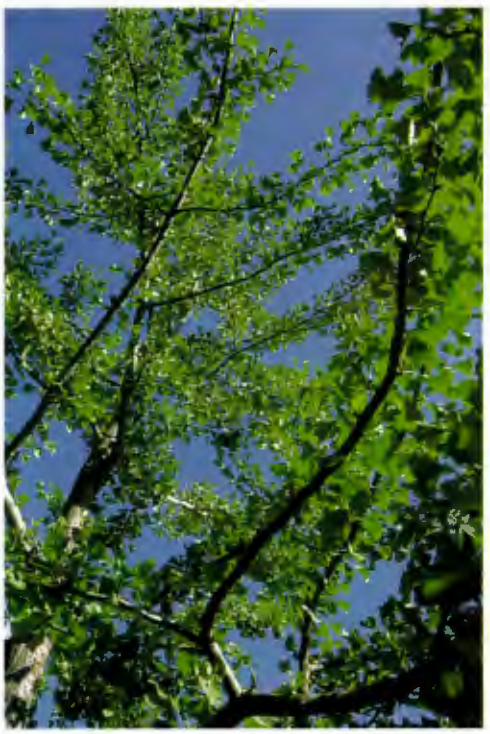
The authors concluded that "EGb appears to stabilize and, in an additional 20 percent of cases (vs. placebo), improve the patient's functioning for periods of six months to one year. Regarding its safety, adverse events associated with EGb were no different from those associated with placebo."

The ginkgo preparation used in the study (EGb 761) is a concentrated leaf extract standardized to 24 percent ginkgo flavonol glycosides and 6 percent terpene lactones, the same extract widely used in Europe for the treatment of cognitive and circulatory disorders and other conditions. This extract, manufactured by Dr. Willmar Schwabe AG in Karlsruhe, Germany, is currently available in the United States under the trade names Ginkgold® (from Nature's Way Products, Inc.) and Ginkoba™ (from Pharmaton Natural Health Products).

The results of the JAMA study are in agreement with other investigations on the efficacy of ginkgo in senile dementia and Alzheimer's disease. Similar results with ginkgo in Alzheimer's were recently reported in the journal *Phytomedicine.* (Kanowski *et al.*, 1997. See "Effectiveness of *Ginkgo biloba* extract in Alzheimer's and multi-infarct dementia," *HerbalGram* 41,17). — *Evelyn Leigh*

[Kanowski S., W.M. Herrmann, K. Stephan, W. Wierich, R. Horr. 1997. Proof of efficacy of the *Ginkgo biloba* special extract EGb 761 in outpatients suffering from mild to moderate primary degenerative dementia of the Alzheimer's type or multi-infarct dementia. *Phytomedicine,* Vol. 4, No.1:3-13.

LeBars P.L., M.M. Katz, N. Berman, M. Turan, A.M. Freedman, A.F. Schatzberg. 1997. A placebo-controlled, double-blind, randomized trial of an extract of *Ginkgo biloba* for dementia. *JAMA*, Vol. 278:1327-1332.]



Ginkgo, *Ginkgo biloba.*

Echinacea Safety Confirmed

This review of published and unpublished research conducted on the squeezed sap of *Echinacea purpurea* (L.) Moench, Asteraceae (Echinacin® Madaus AG, Cologne, Germany) concluded that the herb is well tolerated and appropriate for long-term oral use. The reviewer considered "all articles in which the presence or absence of adverse events of the extract of the flowering coneflower or its constituents was reported." Reviewed studies included oral use of Echinacin® for up to 12 weeks. The reviewer detected no safety concerns, stating that "no adverse reactions other than aversion to the taste have been reported." The review confirms that echinacea is safe when given orally and even by injection to subjects of all ages, "from infants to adults." Significantly, the rare side effects of injection therapy—which can include shivering, headache, vomiting, and fever—are not seen with oral use.

The effectiveness of echinacea "requires further evaluation," but showed a trend toward improvement in those with "slight to moderate depression" of immunity. Little or no effect on normal immune response was observed in healthy subjects.

Some of the reviewed studies demonstrated improvements in health among those using echinacea, including reductions in the incidence and duration of colds. For example, one eight-week double-blind, placebo-controlled study in 109 subjects showed a decrease in the frequency of colds, with the placebo group reporting twice as many "pronounced respiratory infections requiring absence from work or bed rest." (Schöneberger, 1992). In another clinical trial, however, echinacea lozenges (Echinacin®) produced no significant effect in 47 marathon runners. The reviewer comments: "Since the marathon runners were extremely fit physically... all of the subjects [were] equally insensitive to colds."

Although controversial, some sources caution against use of echinacea in autoimmune conditions such as lupus and multiple sclerosis. This contraindication is based on speculation that stimulating an overactive immune system seems ill-advised. There is no controlled study confirming adverse effects in autoimmune conditions. — *Rob McCaleb*

[Parnham, M.J. 1996. Benefit-risk assessment of the squeezed sap of the purple coneflower (*Echinacea purpurea*) for long-term oral immunostimulation. *Phytomedicine* Vol. 3, No. 1, 95-102.

Schöneberger, D. 1992. The influence of immune-stimulating effects of pressed juice from *Echinacea purpurea* on the course and severity of colds. *Forum Immunologie*, Vol. 8, 1-8.]

Echinacea, *Echinacea purpurea.*
Photo © 1996 Steven Foster.

Strong Association Between *Allium* Consumption and Cancer Protection

Regular consumption of *Allium* vegetables is widely believed to confer cancer-protective health benefits. To elucidate the relationship between *Allium* and cancer, the study reviewed 20 epidemiological studies conducted worldwide between 1966 and 1996 (Ernst, 1997). With the exception of one negative study, the consistently positive results strongly support an association between *Allium* vegetables and protection against cancer, particularly cancers of the gastrointestinal tract. The author concludes by suggesting that "the time for randomized controlled trials in high risk populations may be right."

Eight studies focused exclusively on garlic (*Allium sativum* L., Liliaceae) and the remainder on onion (*A. cepa* L.) with or without other *Allium* vegetables. Most of the 20 studies reviewed were case control studies, which, according to the author, are "prone to various forms of bias," such as imperfect recall of dietary habits. Two major studies avoided this shortcoming.

The prospective cohort study known as the Iowa Women's Health Study involved 41,387 women between the ages of 55 and 69. Subjects recorded dietary habits and were followed for five years, during which time 212 women developed colon cancer (Steinmetz *et al.*, 1994). Of all nutrients analyzed, garlic demonstrated the strongest inverse association with risk. No other *Allium* vegetables were included in this study. In the Netherlands Cohort Study of 1996, 58,279 men and 62,573 women aged 55 to 69 years completed a 150-food item dietary questionnaire. (Dorant *et al.*, 1996) During a follow-up period of 3.3 years, stomach cancer was diagnosed in 139 subjects. Statistical analysis demonstrated that onion consumption had a significant, dose-dependent protective effect against cancer of the non-cardia part of the stomach. According to the author of the review paper, the results "imply that the risk of stomach cancer can be halved through consuming one half onion or more per day."

Various mechanisms have been proposed as explanations for the cancer-protective effect of *Allium*

continued on next page

vegetables. The *Allium* compound diallyl sulfide may raise levels of glutathione S-transferase, which contributes to the detoxification of carcinogens. Sulfur compounds in garlic and onion have anti-nitrosating and nitrite scavenging properties. Allicin exhibits antibacterial action, possibly reducing bacterial conversion of nitrate to nitrite in the stomach and limiting the formation of carcinogenic nitrosamines. *In vitro*, garlic has been shown to kill *Helicobacter pylori*, a major stomach cancer risk factor. — *Betsy Levy and Evelyn Leigh*

[Dorant, E., P.A. van den Brandt, R.A. Goldbohm, F. Sturmans. 1996. Consumption of onions and a reduced risk of stomach carcinoma. *Gastroenterology*, Vol. 110, No.1, 12-20.]

[Ernst, E. 1997. Can *Allium* vegetables prevent cancer? *Phytomedicine*, Vol. 4, No. 1, 79-83.]

[Steinmetz, K.A., L.H. Kushi, R.M. Bostick, A.R. Folsom, J.D. Potter. 1994. Vegetables, fruits, and colon cancer in the Iowa Women's Health Study. *Am J Epidemiol*, Vol. 139, 1-15.]

Vitex More Effective Than Pyridoxine in PMS

Good clinical evidence bears out the strong traditional reputation of chaste tree fruits (*Vitex agnus-castus* L., Verbenaceae) in the treatment of menstrual abnormalities, premenstrual syndrome (PMS), menopausal complaints, and even infertility. Recently, a team of German investigators conducted a controlled, double-blind study to evaluate the efficacy and safety of a *Vitex* capsule formulation (Agnolyt®, Madaus AG, Cologne, Germany) compared to pyridoxine (vitamin B6) in 175 women with PMS. Pyridoxine was chosen for purposes of comparison because earlier research indicates that it can be effective in alleviating symptoms of PMS, which may include nervousness, irritability, depression, bloating, breast tenderness, weight gain, and skin and digestive problems.

Vitex (Chaste tree), *Vitex agnus-castus.* Photo © 1997 Steven Foster.

The 175 women were randomized to receive daily treatment with one capsule containing 3.5 to 4.2 mg dried *Vitex* extract (9.58-11.5:1) plus one placebo capsule (n=90) or two 100 mg capsules of pyridoxine (n=85). Duration of treatment was three menstrual cycles. Therapeutic response was assessed with the premenstrual tension syndrome (PMTS) scale, recording of six typical PMS complaints, and the clinical global impression (CGI) scale. Treatment efficacy was assessed by both patients and physicians. At the end of the trial, 127 subjects were eligible for inclusion in the efficacy analysis; all 175 were included in the safety analysis.

In comparison with pyridoxine, *Vitex* was associated with "a considerably more marked alleviation of typical PMTS complaints, such as breast tenderness, edema, inner tension, headache, constipation, and depression." Overall, 77.1 percent of subjects taking *Vitex* reported improvements, compared to 60.6 percent of those in the pyridoxine group. With regard to physician assessments, 80 percent felt that both treatments provided "adequate" efficacy. However, 24.5 percent rated *Vitex* treatment as "excellent," compared to only 12.1 percent with pyridoxine.

Side effects were reported by five women in the pyridoxine group and 12 in the *Vitex* group, including headache, gastrointestinal and lower abdominal complaints, and skin problems. No serious adverse events were seen. Although women wishing to conceive were excluded at the beginning of the study, five women taking *Vitex* became pregnant during the course of the trial. — *Evelyn Leigh*

[Lauritzen, C., H.D. Reuter, R. Repges, K.-J. Bohnert, U. Schmidt. 1997. Treatment of premenstrual tension syndrome with *Vitex agnus-castus*. Controlled, double-blind study versus pyridoxine. *Phytomedicine*, Vol. 4, No. 3, 183-189.]

Nettle Leaf Enhances Effectiveness of Anti-inflammatory Drug

In an open, randomized study, stinging nettle given in combination with a sub-therapeutic dose of an anti-inflammatory drug was as effective as a full dose of the drug alone for arthritis pain relief (Chrubasik *et al.*,1997). Forty patients experiencing acute arthritis exacerbations took part in the study, with half taking the full 200 mg standard dose of the prescription drug diclofenac. The other subjects took 50 mg of diclofenac along with 50 g of stewed nettle leaf (*Urtica dioica* L. [Urticaceae]). All subjects ate the same foods during the study and only those with uncomplicated medical histories

were included, based on very specific criteria. Exclusion criteria included serious liver, kidney, or heart disease, alcoholism, infection, recent surgery, and therapy with certain drugs, including steroids.

Researchers used both objective and subjective tests to measure effectiveness. The objective measure was a reduction in specific blood proteins (elevated C-reactive protein), which are related to joint damage caused by acute arthritis. Subjective measures included scores for physical impairment, pain, and stiffness. The results were impressive: a combination of 50 g nettle leaf with one-quarter of the normal dose of diclofenac was just as effective in relieving pain as the full dose of the drug alone. The authors noted, "50 mg diclofenac is unlikely to produce such a profound effect." Previous research has shown that doses of 75 mg diclofenac are inadequate for arthritis pain relief. The investigators suggest that "further investigations are needed to find out if acute attacks of arthritis may respond to stewed Herba Urticae dioicae only."

According to the author, the results of this study support those of a 1996 study by Ramm and Hansen, in which consumption of a dried powdered extract of nettle leaf was associated with a 50 percent reduction in dosage of a non-steroidal anti-inflammatory drug (NSAID) without loss of efficacy. — *Rob McCaleb*

[Chrubasik, S., W. Enderlein, R. Bauer, W. Grabner. 1997. Evidence for antirheumatic effectiveness of Herba *Urticae dioicae* in acute arthritis: A pilot study. *Phytomedicine*, Vol. 4, No. 2, 105-108.

Ramm, S., C. Hansen. 1996. Brennesselblatter-extrakt bei arthrose und rheumatoider arthritis. *Therapiewoche*, Vol. 28, 3-6.]

Mahonia Ointment in the Treatment of Psoriasis

Oregon grape (*Mahonia aquifolium* (Pursh) Nutt. [Berberidaceae]) is frequently cited in traditional herbal literature as an effective treatment for psoriasis vulgaris, a proliferative skin disorder of uncertain etiology. The chronic nature of psoriasis generally necessitates long-term treatment, and standard therapeutic agents are often associated with safety concerns.

Topical ointments containing *Mahonia* bark extract are now marketed in Europe for psoriasis. Results of recent *in vitro* trials utilizing human keratinocytes suggest that Oregon grape bark extract as well as the constituents berberine, berbamine, and oxyacanthine have antiproliferative, antioxidant, and anti-inflammatory effects relevant to psoriasis (Muller *et al.*, 1995).

Based on this evidence and their own unpublished preliminary findings, the investigators conducted a double-blind, placebo-controlled study to evaluate the efficacy of an ointment containing 10 percent *Mahonia* bark extract in psoriasis of all severity gradings (mild to severe) (Wiesenauer and Ludtke, 1996). Eighty-two patients with psoriasis were instructed to apply the *Mahonia* and placebo ointments two or three times a day, one ointment on the right side of the body and the other on the left, and to wear ointment-soaked bandages at night. Body sides were randomly assigned to *Mahonia* ointment or placebo, which consisted of the ointment base. According to the authors, their chosen trial design is standard in dermatology research.

Median length of treatment was four weeks, after which physicians and patients assessed treatment efficacy utilizing a three-step scale: "symptoms unchanged," "symptoms improved," and "symptoms disappeared completely." Based on patient efficacy assessments, there were some statistically significant differences between the *Mahonia* and placebo ointments, but overall, more than half of both patients and physicians judged the *Mahonia* ointment ineffective. Among treatment responders, *Mahonia* was particularly effective in moderately severe psoriasis, and the investigators concluded that *Mahonia* bark ointment is "a potent and safe therapy of moderately severe cases of psoriasis vulgaris." Side effects, including itching, burning, and allergic reactions, were reported by four patients (approximately six percent of the *Mahonia* group.).

Study shortcomings cited by the authors include unspecific inclusion criteria (allowing inclusion of extremely severe and long-standing cases of psoriasis), a "crude" main effect measurement scale that might not be sensitive to small changes, and possible patient errors, such as confusion about the assignment of body sides and failure to adequately wash hands between applications of the two ointments. The relatively "high number" of treatment nonresponders was attributed to the inclusion of extremely severe cases of psoriasis.

The *Mahonia* ointment used in this study consisted of 10 percent *Mahonia* bark extract in a base of anhydrous lanolin, paraffin, wool wax alcohols, cetyl stearyl alcohol, and white vaseline. The extract and the ointment base were both prepared according to the German Homeopathic Pharmacopoeia. — *Evelyn Leigh*

[Muller, K., K. Ziereis, I. Gawlik. 1995. The antipsoriatic *Mahonia aquifolium* and its active constituents; II. Antiproliferative activity against cell growth of human keratinocytes. *Planta Medica*, Vol. 61, 74-75.

Wiesenauer, M., and R. Ludtke. 1996. *Mahonia aquifolium* in patients with Psoriasis vulgaris — an intraindividual study. *Phytomedicine*, Vol. 3, 231-235.]

Oregon grape, *Mahonia nervosa.* Photo © 1996 Steven Foster.

Feverfew Effective in Migraine Prevention

A recent study utilizing air-dried feverfew leaf (*Tanacetum parthenium* (L.) Schultz-Bip. [Asteraceae]) supports its prophylactic use against migraine (Palevitch *et al.*, 1997). The study, conducted at the Hillel Yaffe Hospital, Hadera, Israel, involved 57 patients (47 female and 10 male), median age 38 (9-65 years), selected at random and treated for two months with daily doses of 100 mg feverfew leaf (two 50 mg capsules a day). Patients were then divided into two groups and examined for an additional two months under a double-blind, placebo-controlled, cross-over regimen utilizing dried parsley leaf capsules as placebo. Significant reductions were observed in pain intensity and the severity of other typical symptoms of migraine headache attacks, such as nausea, vomiting, and sensitivity to noise and light. No mention is made of any effect on the frequency of attacks.

The authors of this report were apparently unaware of the results of the Dutch study using an ethanol extract of feverfew leaves, which yielded no prophylactic effect. (deWeerdt *et al.*, 1996—see *HerbalGram* 41, pp. 16-17.) The authors also incorrectly state in their introduction that feverfew preparations "have long been used as a self-medication in the prevention of migraine...." Actually, such use was only popularized in the 1970s (Johnson, 1984). Palevitch and colleagues also incorrectly assert that "Controlled clinical trials which encompassed feverfew *leaves and extracts* (author's emphasis) have been conducted in England (Johnson *et al.*, 1985; Murphy *et al.*, 1988). Both British studies employed whole feverfew leaf, freeze-dried and air-dried, respectively. No feverfew *extract* had been clinically evaluated before the Dutch trial.

In addition, the researchers erroneously claim that their study "is the first to be conducted among patients who had never taken feverfew before." In fact, the Murphy, Heptinstall, and Mitchell study of 1988 reported on 59 patients, only 17 of whom had previously used feverfew—and only one of the 50 patients involved in the Dutch trial of feverfew extract had ever taken feverfew!

The positive results regarding relief of migraine symptoms are interesting on a number of counts. All the British-grown feverfew used in the earlier British trials was likely quite similar, whereas the feverfew leaf used in the subject study was obtained from plants grown from seeds purchased from the Netherlands and grown in Israel. The moderately high level of the sesquiterpene lactone parthenolide (0.2 percent) in the present study, compared with 0.42 percent, 0.66 percent, and 0.35 percent for the previous trial formulations, suggests that the feverfew was derived from the same chemotype. It also points to the non-sesquiterpene lactone complement of feverfew's chemical profile as the probable source of the therapeutic principle(s) responsible for migraine prophylaxis—ever mindful of the reported ineffectiveness of the Dutch leaf *extract* preparation. The 0.2 percent level of parthenolide present in this last preparation is quite coincidentally exactly the level arbitrarily established by Canada's Health Protection Branch in 1992 as an *identity* criterion for efficacious feverfew leaf.

—Dennis V. C. Awang, Ph.D.

[deWeerdt, C.J., H.P.R. Bootsma, H. Hendricks. 1996. Randomized double-blind placebo controlled trial of a feverfew preparation. *Phytomedicine,* Vol. 3, No. 3, 225.

Johnson, S. Feverfew: A traditional herbal remedy for migraine and arthritis. London: Sheldon Press 1984, 19.]

Johnson, E.S., N.P. Kadam, D.M. Hylands, P.J. Hylands. 1985. Efficacy of feverfew as prophylactic treatment of migraine. *Br Med J,* Vol. 291, 569-573.

Murphy, J.J., S. Heptinstall, J.R.A. Mitchell. 1988. Randomized double-blind placebo-controlled trial of feverfew in migraine prevention. *Lancet,* Vol. 8601,189-192.

Palevitch, D., G. Earon, R. Carasso. 1997. Feverfew (*Tanacetum parthenium*) as a prophylactic treatment for migraine: A double-blind placebo-controlled study. *Phytotherapy Research,* Vol. 11, 508-511.]

Feverfew, *Tanacetum parthenium.*
Photo © 1997 Steven Foster.

Phytotherapy Aids in Benzodiazepine Withdrawal

Based on previous research and the author's own experience at a New Zealand medical detoxification unit that has treated more than 500 patients for drug and alcohol dependency, this well-referenced paper discusses the use of herbs in the management of benzodiazepine withdrawal symptoms. Withdrawal symptoms related to the benzodiazepine class of anxiolytic drugs (such as Valium®) are generally long-lasting and most often include anxiety, insomnia, and irritability. Dizziness, headache, tinnitus, tremor, loss of appetite, gastrointestinal upset, and perceptual disturbances are also common.

Many patients present at this clinic had a "polydrug" history of substance abuse, including combination drug and alcohol addictions. The therapeutic strategy used at the clinic is intended to help alleviate acute withdrawal symptoms while providing supportive treatment for underlying problems such as anxiety, depression, and panic attacks. Most clients receive concomitant treatment with conventional medications. However, according to the author, "in a significant number of cases the need for additional ameliorative orthodox medication (especially diazepam and methadone) is avoided through the introduction of phytotherapy, often after consultation between the phytotherapist and medical practitioner." He states that "relatively large doses of appropriate phytomedicines are often required to produce a significant effect in alleviating acute withdrawal symptoms in [drug] tolerant individuals." Although the paper does not provide long-term follow-up data, the author considers botanicals particularly useful in helping to safely reduce the anxiety and overall nervous system weakness often associated with recovery from benzodiazepine abuse.

The author, a phytotherapist and pharmacist, mentions 28 plants that are effectively used by the clinic for anxiolytic, sedative, muscle relaxant, antidepressant, and/or adaptogenic effects. Seven are singled out for detailed discussion: valerian (*Valeriana officinalis* L. [Valerianaceae]), kava (*Piper methysticum* G. Forster [Piperaceae]), passionflower (*Passiflora incarnata* L. [Passifloraceae]), manuka, a native New Zealand plant also known as broom teatree (*Leptospermum scoparium* Forster & Forster f. [Myrtaceae]), St. John's wort (*Hypericum perforatum* L. [Clusiaceae]), ashwaganda (*Withania somnifera* (L.) Dunal [Solanaceae]), and schisandra (*Schisandra chinensis* (Turcz.) Baillon [Schisandraceae]). Part of the author's rationale for using these plants is that some of them contain constituents shown to act as agonists at the central benzodiazepine receptors in a manner similar to the benzodiazepines themselves. Conventional management of benzodiazepine withdrawal may involve the use of tapering doses of a long-acting benzodiazepine, such as diazepam. Kava, passionflower (*P. incarnata* and *P. caerulea* L.), ashwaganda, *Matricaria recutita* L. [Asteraceae], *Scutellaria baiacalensis* Georgi [Lamiaceae], and manuka are among the plants cited as having demonstrated benzodiazepine receptor agonist actions.

Part II of this article will deal with the use of herbs in alleviating symptoms of opiate drug withdrawal. — *Evelyn Leigh*

[Rasmussen, P. 1997. A role for phytotherapy in the treatment of benzodiazepine and opiate drug withdrawal (Part I). *The European Journal of Herbal Medicine*, Vol. 3, No. 1, 11.]

Valerian, *Valeriana officinalis*
Kava, *Piper methysticum*
Ashawaganda,
Withania somnifera
St. John's Wort,
Hypericum perforatum
Schisandra,
Schisandra chinensis.
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PLANT PATENTS

By Karen Dean

During 1997, Shaman Pharmaceuticals received three U.S. patents on compounds, compositions, or methods for the treatment of Type II diabetes, bringing the company's number of diabetes-related patents to five. The company's in vivo studies have identified, within a little more than two years, more than a dozen orally active hypoglycemic compounds. In 1997, the company filed an Investigational New Drug petition with the Food and Drug Administration, to take its lead diabetes compound on to clinical trials. Phase I clinical trails began on January 20, 1998. Shaman has applied for 19 U.S. and several international patents on hypoglycemic agents. Shaman's Type II diabetes research program serves as the basis of its collaborations with Lipha S.A., a wholly owned subsidiary of Merck KGaA, Darmstadt, Germany, and with Ono Pharmaceutical Co., Ltd., of Japan.

Shaman Pharmaceuticals shares the benefits with local and indigenous people with whom it works through short, medium, and long-term mechanisms. The long-term mechanism involves returning a percentage of the profits to all the cultures and countries it has worked with on all products that Shaman develops. A pilot trust fund was launched in Nigeria this past fall, to test this process, and will be the subject of future *HerbalGram* reports about this process. — *Barbara A. Johnston*

ERRATA

The "Plant Patents" story on ciwujia (*HerbalGram* 40, page 23) neglected to mention the fact that "ciwujia" is commonly known and sold on the American market as Siberian Ginseng or Eleuthero Ginseng. Use of the plant was popularized in this country in the 1960s by Richard Lucas, who coined the name Siberian Ginseng. The herb has long been sold in tea, extract, capsule, and tablet forms. The term "ciwujia" which Pacific Health uses to describe the plant is the Chinese name for this plant. It is not considered the "common or usual name" (which is required by FDA for proper labeling) for Siberian ginseng and does not appear in the American Herbal Products Association (AHPA) list of standardized common names for herbs.

Page 29, second column, line 17, should read "psyllium seed," not "vitamin psyllium seed."

PYCNANTHUS ANGOLENSIS

Terpenoid-type quinones for treatment of diabetes. Invented by Rosa P. Ubillas, Jolad D. Shivanand, Christopher D. Mendez, Diana M. Fort, Joseph L. Evans, and Jian Luo; all of California. Assigned to Shaman Pharmaceuticals, Inc., South San Francisco, CA. U.S. Patent 5,674,900, issued October 7, 1997.

The patent covers novel terpenoid-type quinones obtained from *Pycnanthus angolensis* (Welw.) Warb., Myristicaceae, the processes for obtaining the novel terpenoid-type quinones, and methods for their use as hypoglycemic agents to treat diabetes. The novel terpenoid-type quinones are obtained from the leaves and stems of *P. angolensis* and are useful for lowering the blood glucose levels of insulin-dependent (type I) and non-insulin-dependent (type II) diabetes.

CRYPTOLEPIS

Hypoglycemic agent from *Cryptolepis*. Invented by Jian Luo, Diana M. Fort, Donald E. Bierer, and Reimar C. Bruening all of California. Assigned to Shaman Pharmaceuticals, Inc., South San Francisco, CA. U.S. Patent 5,629,319, issued May 13, 1997.

This patent covers use of extracts from *Cryptolepis* spp., and use of the quindoline alkaloids such as quindoline and cryptolepine contained therein, as hypoglycemic agents, as well as methods for obtaining the hypoglycemic agents. Preferably, the extracts are derived from *Cryptolepis sanguinolenta* (Lindl.) Schltr., Asclepiadaceae. The agents are useful for treating insulin-dependent (type I) and non-insulin-dependent (type II) diabetes.

CRYPTOLEPINE ANALOGS

Cryptolepine analogs with hypoglycemic activity. Invented by Donald E. Bierer of Daly City, CA. Assigned to Shaman Pharmaceuticals, Inc., South San Francisco, CA. U.S. Patent 5,681,958, issued October 28, 1997.

Naturally occurring quindoline and cryptolepine alkaloids, such as those described in Shaman patent 5,629,319, have moved another stage along the product development pipeline. This patent protects novel cryptolepine analogs useful as hypoglycemic agents, methods for their use as hypoglycemic agents, for example, in the treatment of diabetes, and a method for their synthesis. The conversion of the naturally occurring alkaloids into proprietary, modified (synthesized) compounds is the key to successful patenting of a plant or plant-based pharmaceutical.

GINKGOLIDE PAF ANTAGONISTS

Treatment of skin diseases using ginkgolide PAF antagonists. Invented by Ruth Korth, D-80639, Munich, Federal Republic of Germany. Assigned to Ruth Korth, Munich, Federal Republic of Germany. U.S. Patent 5,605,927, issued February 25, 1997.

Treatment and prevention of certain skin disorders, including sclerotic, genetic, and thermic diseases, by the topical or oral administration of an effective amount of natural ginkgolides. The skin diseases that respond are those mediated by lyso-platelet-activating factors (PAFs) that can be inactivated by lyso-PAF antagonists. The inventor has identified ginkgolides as lyso-PAF antagonists. The PAFs play a critical role in the inflammatory process, and therefore in the development of these skin diseases. The bibliographic references cite extensive research on PAF receptors and antagonists, and in vitro and in vivo studies of agents that can interfere with the inflammatory process. The strength of this patent may relate more to the cellular biology research behind it, and to the identification of one possible mechanism of action of *Ginkgo biloba*, than to the patenting of a plant or plant product per se.

Canadian Regulatory Update

Chanchal Cabrera, MNIMH, AHG
Vancouver, BC, Canada

In the late fall of 1997 Health Canada issued a public announcement completely repudiating Codex Alimentarius (see *HerbalGram* #39, page 28), and stating that Canada does not and will not support Codex at any level. Even if Codex does pass the review procedure in the World Trade Organization (WTO), it will not affect the availability of herbal medicines or nutritional supplements in Canada because, if these are taken for therapeutic purposes and are not clearly recognizable as food items, then they are considered to be "therapeutic products" and are not regulated under the food guidelines which Codex affects.

The legal status of herbs in Canada is currently undergoing serious scrutiny. The Advisory Panel on Natural Health Products has been created by the Health Minister and given a wide mandate to review and revise the entire regulatory framework of natural health products and to create new regulatory guidelines that ensure consumer access to safe and effective products. The panel has 17 members with broad representation, including five consumer groups, two Western clinical herbalists, a naturopath, two complementary M.D.s, a pharmacist, a wholesaler, a manufacturer, two Traditional Chinese Medicine practitioners, a representative from the Assembly of First Nations, and an importer. Panel members have been working since June 1996. A preliminary report should be available early in 1998. So far the panel is leaning towards creating a separate regulatory category, within the Therapeutic Products Directorate but distinct from the drugs category, with classification of herbs and drugs being based on four criteria: dose volume, dosage form, claims made, and relative risk.

So far, under the influence of the Panel, a number of concessions have been made by Health Canada and the general tone of the discussions has been conciliatory and cooperative. The Drug Status Manual which restricted over 60 herbs from sale has been scrapped and replaced with the Therapeutic Products Compliance Guide which lists and restricts only six herbs—Gotu kola (*Centella asiatica*), Nux vomica (*Strychnos nux-vomica*), Comfrey (*Symphytum officinal*), Chaparral (*Larrea tridentata*), Germander (*Teucrium chamaedrys*), and Calamus (*Acorus calamus*). These may not be sold in any form. There are 16 herbs listed by the Foods Directorate as posing a possible health hazard if consumed regularly as foods—in other words these herbs would be required to have a Drug Identification Number (DIN) from the Therapeutic Products Directorate before being permitted for sale in Canada. They are Chaparral, Ephedra (*Ephedra sinica*), Germander, Gotu kola, Horsetail (*Equisteum arvense*), Kava kava (*Piper methysticum*), Khat (*Catha edulis*), Senna (*Senna alexandrina*), Cascara (*Rhamnus purshiana*) , Calamus, Comfrey, Yellow jessamine (*Gelsemium sempervirens*), Magnolia (*Magnolia liliflora*), Pleurisy root (*Asclepias tuberosa*), Stephania (*Stephania tetrandra*) and Arnica (*Arnica* spp.).

Any herb or natural health product for which a medical claim is made is still subject to Drug Identification Number (DIN) regulations. The panel is suggesting that structure/function claims and risk reduction claims be permitted on traditional herbal products by using a much simpler notification scheme and not the DIN procedure and placing the burden of proof on Health Canada to prove harm instead of on the manufacturer to prove safety.

The director general of the Therapeutic Products Directorate of the Health Protection Branch has determined that Schedule A (the list of diseases that a patient cannot self diagnose or treat such as impotence, alcoholism, obesity, and menopause) should be scrapped; he will make this recommendation to the Health Minister.

The Standing Committee on Health (a parliamentary group) commenced public hearings in December and is considering the whole issue of natural medicine and how best it fits into the current health care model. The committee looks likely to endorse the recommendations of the advisory panel, made after careful consideration by all interested parties. The committee report should be made by late spring 1998 and then the Health Minister will decide how to proceed.

A recent nationwide poll showing that 70 percent of the population think the health care plan should include herbs and natural medicine is bound to influence his decisions.

It is not beyond the realms of possibility that Canada could adopt and implement a model of regulation that sets a precedent for other countries to have safe, sensible, and cost effective regulations that ensure freedom of choice and consumer safety.❑

[*All the documents pertaining to these discussions may be obtained via the Internet by accessing http://www.hc-sc.gc.ca/hpb-dgps/therapeut/drhtmeng/*]

American Herbal Products Association Seeks Modification Of Herbal Extract Provisions

by Tony Young and Rob McCaleb

When the Food and Drug Administration ("FDA") published final regulations for dietary supplement labeling there were two surprises which would seriously impact on botanicals. First, FDA's final regulation on extracts from which the solvent has been removed[1] would require that the botanical be described with its extract, *e.g.*, "dried extract of ginger." This was immediately criticized for two reasons. First, dried extracts have never before been defined in this fashion. Second, FDA gave no notice it would impose such a requirement. The American Herbal Products Association ("AHPA") and other trade associations challenged this provision as technically inappropriate and unlawful. It is expected FDA will soon withdraw this provision.

The second surprise was the FDA suggestion that for liuid extrects, ingredients should be listed by weight, and with a ration of the weight of the starting material to the solvent, for example, "fresh dandelion root extract, x mg (y:z) in 70% ethanol." This provision[2] affects liquid extracts from which all the liquid has not been removed, including tinctures. This provision reads as follows:

> (B) For any dietary ingredient that is a liquid extract from which the solvent has not been removed, the quantity listed shall be the weight of the total extract with information on the concentration of the dietary ingredient, the solvent used, and the condition of the starting material (i.e. whether it is fresh or dried), e.g., "fresh dandelion root extract, x mg (y:z) in 70% ethanol," where x is the number of mg of the entire extract, y is the weight of the starting material and z is the volume (milliliters) of solvent. Where the solvent has been partially removed (not to dryness), the final concentration shall be stated (e.g., if the original extract was 1:5 and 50 percent of the solvent was removed, then the final concentration shall be stated as 1:2.5).

The American Herbal Products Association (AHPA) has asked that this provision be reconsidered, and that after reconsideration, FDA should adopt technical amendments which AHPA has proposed.

FDA's December 1995 proposal on liquid extracts stated: "For any dietary ingredients that are liquid extracts, the weight shall not include the weight of solvents."[3] FDA requested and received comments on this particular formula. Because the final regulation differed substantially from the proposal, AHPA challenged its legality. However, AHPA appreciates that the agency's intention in promulgating the provision for liquid extracts may have been based on actual and perceived confusion in the labeling of products in the marketplace. AHPA also agreed better controls are needed in the manner in which certain information is quantified on some liquid extracts of botanicals. However, AHPA told FDA this can best be accomplished by establishing standard definitions and calculations for use in presenting meaningful quantification information, rather than by establishing a single form for a ratio statement as a requirement for all products. Indeed, AHPA's standards committee has been and continues to work on definitions and guidelines for herbal extracts.

As an alternative to FDA's final regulation, AHPA proposed that FDA amend the regulations to read as follows:

> (B) For any dietary ingredient that is a liquid extract from which the solvent has not been removed, the quantity listed shall not be the weight but shall instead be the volume of the total extract. If information is included on the concentration of the dietary ingredient in the form y:z, it shall be expressed as a ratio of the weight (in grams) of the starting material to the volume (in milliliters) of solvent. Additionally, the condition of the starting material shall be stated if the starting material is in fresh condition (e.g., "fresh dandelion root extract(y:z)"), and may be stated if the starting material is in dried condition. If a product contains a dietary ingredient that is a liquid extract from which the solvent has not been removed and is labeled in any manner which quantifies or claims to contain one or more specific contained constituents of a botanical, the constituent shall be quantified on the label by weight on a "per serving" basis, in accordance with paragraph (b)(3)(iii) of this section.

There were several reasons for the AHPA proposals.

1. The quantity of a dietary supplement that is a liquid extract should be stated in volume, not in weight.

Weight measures, AHPA argued, are not meaningful to consumers of any food product in liquid form, and may, in fact, be confusing. The Dietary Supplement Health and Education Act of 1994 ("DSHEA") states that the quantity listing requirement for each dietary ingredient shall be complied with "in a manner which is appropriate for the product."[4]. There is no requirement that all quantities be stated by weight. Labeling should use language which creates the least confusion among consumers. Any requirement to state a weight measure for a liquid product would simply confuse people.

continues on next page

2. Solvents that have not been removed from a liquid extract must be included in the ingredient list.

Information about solvents present (such as alcohol) in many liquid extracts is useful to consumers, but solvents which have not been removed from an extract must already be included in the ingredient list. [5]

3. Information on the concentration of a liquid extract in the form y:z should be optional.

FDA's proposed rules did not propose a requirement for stating the concentration of a liquid extract and interested parties to the proposed rules could not reasonably have anticipated that the final rule would require such information.

AHPA argued, however, that while the use of such information may provide meaningful information to consumers, a requirement to state the concentration as described in the final rules is potentially misleading. The weight of the herbal ingredient at the beginning of the extraction process is only one of several factors which effect the quality or concentration of a liquid herbal extract. A requirement that emphasizes the weight of the starting material and the solvent to the exclusion of all other information, neglects every other element of the manufacturing process, such as time, temperature, pressure, or the quality of the raw materials, and essentially denies, on the label, the value of any current or potential proprietary advances in liquid extract manufacturing technology.

At the same time, AHPA believes that the inclusion of such information may, if properly calculated, provide useful information to consumers. AHPA essentially agrees with the definition of a ratio expressed in the form y:z that is included in the final rule, i.e. that the calculation for a labeled concentration ratio which is stated in the form y:z must be standardized as the ratio of the weight (in grams) of the starting material to the liquid volume (in milliliters) of the solvent, and that the condition of the starting material (i.e., whether it is fresh or dried) must be stated if the starting material is in fresh condition.

AHPA's objection to FDA's regulation is that it is mandatory. By mandating this information, FDA creates an incentive for manufacturers to create high ratios when other factors may be important to the quality of the extract. This would create competitive pressures related to a false and potentially misleading premise. By making this form of declaration optional, FDA will not disadvantage those companies marketing their products on a premise different than this ratio.

4. Quantification of stated constituents of a liquid extract should be stated on a per serving basis.

Some supplement labels claim that the product contains one or more specific constituents of an herb and/or quantifies the amount of the constituent(s). These ingredients are represented both in the form of liquid extracts from which the solvents have not been removed and in the form of extracts from which the solvents have been removed. The inclusion of such information is a fairly

A Brief History Of Pharmacognosy

One chimp to another "I have a tummy ache..." (In "chimpanzeese," rubbing tummy)

4,000,000 years ago: "Here, eat these bitter herbs!" (In chimpanzeese)

2,000,000 years ago: "Here, eat these bitter herbs and leave some for the Leakey's to find!" (in humanoid sign language)

2,000 B.C. - "Here, eat these bitter herbs!!" (in Arabic and Hebrew).

0 B.C. - "The saviour is borne! Faith alone can heal, but eat the bitter herbs as Food Farmacy, just in case!!"

1,000 A.D. - "Those bitter herbs are heathen. Here, say this prayer!"

1,850 A.D. - "That prayer is superstition. Here, drink this potion!"

1,900 A.D. - "That potion is snake oil. Here, swallow this pill!"

1,985 A.D. - "That pill is ineffective. Here, take this antibiotic!"

2,000 A.D. - "That antibiotic is artificial and toxic, and all the microbes are resistant. Here, eat these bitter herbs. And pray they will help you."

— from an unknown source via email.

recent innovation in the labeling of dietary supplements containing these ingredients. This is very meaningful information—when it is presented accurately.

AHPA therefore suggested, as a means to technically correct liquid constituent disclosures, that if a product is labeled in a manner which quantifies or names one or more specific contained constituents, compounds, or group of compounds of a botanical, such quantification be stated on the label by weight on a "per serving" basis. ❑

REFERENCES

1. (21 C.F.R. § 101.36(b)(3)(ii)(C), 62 Fed.Reg. 49825, 49851 (Sept. 23, 1997))
2. (21 C.F.R. § 101.36(b)(3)(ii)(B), supra)
3. 60 Fed. Reg. 67194, 67216 (Dec. 28, 1995) (to be codified at 21 C.F.R. § 101.36(b)(3)(ii))
4. 21 U.S.C. § 343(q)(5)(F)
5. 21 C.F.R. § 101.4(a)(1)(g)

AHPA's Recommended Label Language for Kava Products

The American Herbal Products Association (AHPA) Kava Committee commissioned the Herb Research Foundation to conduct an extensive safety and peer review of Kava. One of the purposes of the *Kava Safety & Peer Review* was to determine what, if any, dosage limitations and cautionary labeling language was needed. The AHPA Board of Trustees approved the following on September 17, 1997, at the Baltimore meeting.

1) Products containing kava should be formulated and labeled to limit consumption of total kavalactones to 300mg per day'

2) Labels of all products containing kava bear the following statement:

Caution: Not for use by persons under the age of 18. If pregnant, nursing, or taking a prescription drug, consult health care practitioner prior to use. Do not exceed recommended dose. Excessive consumption may impair ability to drive or operate heavy equipment.

The *Kava Safety & Peer Review* is available from the AHPA office for $59.95 plus $3.50 for shipping and handling. Also available from the ABC Catalog #422. $59.95 For an article on this review, see *HerbalGram* No. 40, p. 14.❑

erbalist's CHARTER

"Take violet leaves, night shade, of eche ij. handfull, chamomell (flowres), one handful mallowes ij. handful rose leaves one handful swete appuls iiij, a manchet; Boyle all thse to guether in swete mylke tyll they be tendre ..." begins the recipe for Henry VIII's poultice, "devised by the Kinges Matie at hampton court."[1]

ke many a monarch before him, Henry VIII (1491-1547) had a en amateur interest in medicine: he was "a great dabbler in physic d offered medical advice on all occasions which presented themlves ...."[2] He found the actual preparation and compounding of he plasters and ointments particularly fascinating, and no doubt had is own Royal set of apothecary's equipment which went with him on his travels.

A manuscript preserved in the British Museum, written in beautiful Tudor script, records a royal collection of 114 favourite recipes for "plastres" and "cataplasmes", for "balmes...waters, lotions and decoctions". Thirty-two of these are noted as being of "the Kinges Maties devise", and there seems no reason to doubt that they were composed by the King himself, sending his servants scurrying for two ounces of finely powdered red coral or another pint of rose-water, and consulting his personal apothecary Thomas Babham on a fine professional point from time to time, while he pored over his herbals and his antidotaries.

Many of the medicaments devised by Henry must have been for his personal use. His leg with its obstinate ulcerous sore began to bother him fairly early in his reign, and he experimented with a plaster which, the manuscript note claims, "resolves humoures which there is swellynge in the legges", and another one intended "to ease the payne and swelling abowt the ankles". There were other remedies designed perhaps for the same trouble: "a grane oyntement devised by the Kinges highnes to take awaye heat and Indurations", and still more "to resolve and ease Payne", "to heal ulcers without pain", and "to cool inflammation".[3]

His strenuous sexual life appears to have brought its own problems: the "King's Grace's oyntement" was invented at St James's, "to coole and dry and comfort the Member", and another soothing ointment "to dry excoriations and comforte the membre" was devised at Cawood. ("Was not that an episcopal palace? How devoutly was the Head of the Church employed!" commented Horace Walpole waspishly, two centuries later.)[4]

The ingredients Henry used probably reflect fairly accurately the standard medical practice of his time. Most of them were herbal—plants and flowers known since Dioscorides for their soothing, cooling, healing, and softening properties, such as plantain *(Plantago major),* linseed (*Linum usitatissimum*), fenugreek, (*Trigonella foenum-graecum*), and marguerite (*Chrysanthemum leucanthemum*).

He used marshmallow (*Althaea officinalis*), highly thought of by the Arab pharmacists as a poultice for inflammations, and the leaves of the sweet-scented violet (*Viola odorata)* which, as Gerard noted later, were commonly "used in cooling plasters, oyles and comfortable cataplasms or poultices".[5]

Henry also used the sweet yellow flowers of the tall weed melilot (*Melilotus officinalis*), which the country people called King's clover. Tudor farmers hated it because it took over their pasturelands and ruined their corn, but country herbalists found it very useful: a poultice of melilot "boiled in sweet wine" with "the yollk of a rosted egge, linseed, marshmallow and hog's greece" was the very thing, said Gerard, for assuaging inflammation.[6] Appropriately for a Tudor monarch, Henry also used plenty of "oyle of roses" and rose-water, probably as much for its sweet smell—perhaps concealing others less pleasant—as for its medicinal value.

As well as plants, he used lead and turpentine for his plasters; more exotic ingredients such as silver or powdered red coral in which he seems to have had great faith; positively fabulous articles such as unicorn horn; and the occasional repellent animal substance—but carefully prepared for him—such as "the pouldre of long wormes well washed and dryed". All of these were heated, stirred, and pounded together, and given the necessary body by contribution from the royal kitchens such as manchet or fine wheat bread, freshly laid eggs, capon fat, or veal suet.

There was nothing uncommon in this herbal expertise. Henry VIII was merely doing for fun, and in grand kingly style, what every housewife in his kingdom did from necessity. Shakespeare's plays are stuffed with knowledgeable allusions to herbs: "give me mandragora and let me sleep". It was part of every gentleman's breeding to be familiar with them. Every good library in the kingdom possessed one of the fine new Latin herbals then in print, and in 1526—the year that Henry's eye first strayed to Anne Boleyn—the *Grete Herbal*, the first English one, was published with the object, like the French work from which it was translated, of "enformyng how men may be holpen with grene herbs of the gardyn and wedys of the feldys as well as by costly receptes of the potycaryes prepared".[7]

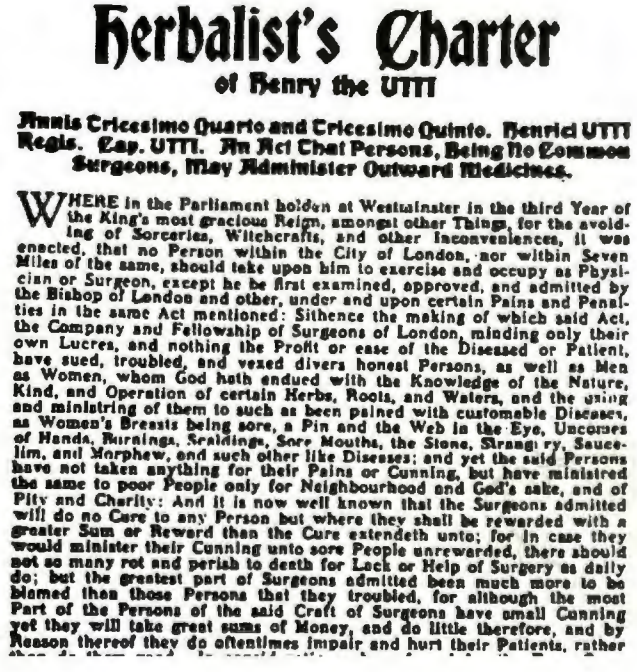
Not all the herbals published in this and the following century were intended for home consumption, however. On the contrary, the vast majority were the work of physicians, surgeons, or apothecaries—men professionally involved with medicinal plants, and anxious to have available in clear concise form all the most important information to be found in the works of Greek, Latin or Arab authors.

Authoritative and complete texts of Dioscorides—as opposed to the scrappy and unreliable extracts the medieval doctor had had to rely on—were considered essential, and Latin translations of the West's first herbal, often running alongside the Greek original, were among the earliest works on medicinal herbs to be printed. Other standard classic and Arab authors followed, while a French physician, John Ruellius, produced early in the sixteenth century the complete reference work *De natura stirpium*, in three fat volumes, "wherein he hath accurately gathered all things out of sundrie writers, especially the Greekes and Latines".[8]

But as time went by, it became clear that the great task of clarifying and collating, so far from being nearly complete, was hardly begun; that confusion was, if anything, being made worse by so many different attempts to impose some kind of order; and that the world was full of plants which Dioscorides had never seen and about which he had not a word to say—a situation that at least one writer, Petrus Andreas Matthiolus, found so unnerving that he actually falsified the figures of some of these alien growths "to make them agree with Dioscori".[9]

We may suspect, too, that many of the physicians who wrote so happily and knowledgeably about medicinal plants were pursuing an academic hobby rather than adding to the general knowledge of their profession. Conrad Gesner (1516-1566), whose leisure for years was absorbed by "the great and general worke of plants" he planned, was professionally far more fascinated by the exciting possibilities of the new chemical medicine, and wrote a book strenuously advocating it as early as 1552.

Another well-known writer on plants, the youthful prodigy Valerius Cordus (1515-1544), spent much of his brief life collecting and improving pharmaceutical formulae. When the physicians of Nuremberg enquired if they might see the result of all his researches, they were so impressed that the Senate ordered a collection of his



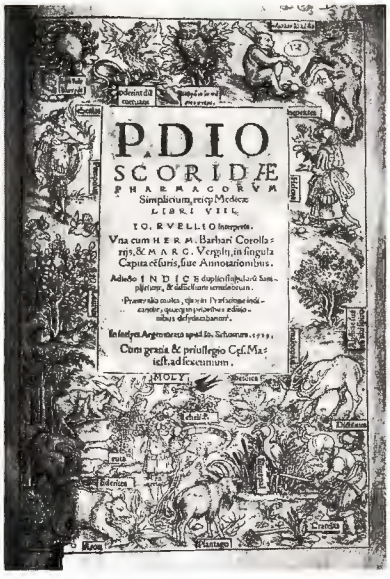
Herbalist's Charter

of Henry the VIII

Annis Tricesimo Quarto and Tricesimo Quinto. Henrici VIII Regis. Cap. VIII. An Act that Persons, Being No Common Surgeons, May Administer Outward Medicines.

WHERE in the Parliament holden at Westminster in the third Year of the King's most gracious Reign, amongst other Things, for the avoiding of Sorceries, Witchcrafts, and other Inconveniences, it was enacted, that no Person within the City of London, nor within Seven Miles of the same, should take upon him to exercise and occupy as Physician or Surgeon, except he be first examined, approved, and admitted by the Bishop of London and other, under and upon certain Pains and Penalties in the same Act mentioned: Sithence the making of which said Act, the Company and Fellowship of Surgeons of London, minding only their own Lucres, and nothing the Profit or ease of the Diseased or Patient, have sued, troubled, and vexed divers honest Persons, as well as Men as Women, whom God hath endued with the Knowledge of the Nature, Kind, and Operation of certain Herbs, Roots, and Waters, and the using and ministring of them to such as been pained with customable Diseases, as Women's Breasts being sore, a Pin and the Web in the Eye, Uncomes of Hands, Burnings, Scaldings, Sore Mouths, the Stone, Strangury, Saucelim, and Morphew, and such other like Diseases; and yet the said Persons have not taken anything for their Pains or Cunning, but have ministred the same to poor People only for Neighbourhood and God's sake, and of Pity and Charity: And it is now well known that the Surgeons admitted will do no Cure to any Person but where they shall be rewarded with a greater Sum or Reward than the Cure extendeth unto; for in case they would minister their Cunning unto sore People unrewarded, there should not so many rot and perish to death for Lack or Help of Surgery as daily do; but the greatest part of Surgeons admitted been much more to be blamed than those Persons that they troubled, for although the most Part of the Persons of the said Craft of Surgeons have small Cunning yet they will take great sums of Money, and do little therefore, and by Reason thereof they do oftentimes impair and hurt their Patients, rather

Herbalist Act, 1542, U.K. from *Natural Healing and Common Law Contracts* by John M. Willis



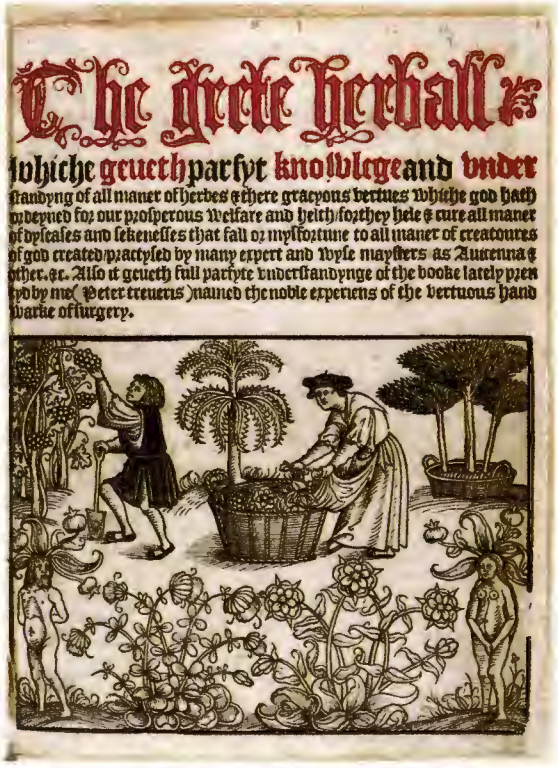
Left to right: John Ruellius; a work by Dioscorides translated by John Ruellius both courtesy of the Lloyd Library, Cinncinati, OH; *De natura stripium libri tres,* 1536 courtesy of the Hunt Institute for Botanical Documentation, Carnegie Mellon University, Pittsburgh, PA..

Aromatics and Opiates, Confections and Conserves, Cerates, Syrups and Electuaries to be printed as the first official pharmacopoeia, and it caused a stir in medical circles throughout Europe. "Disgusting polypharmacal messes", comments a modern pharmacist. "If the physicians and Senate were so favorably impressed with the superiority of this work, one cannot but wonder what must have been the character of the formulae that had previously been used."[10]

As for master surgeon John Gerard (1545-1607), whose very name is almost synonymous with herbal in England—who can doubt that if he had lived today, he would no more have thought of going in for medicine than of apprenticing himself to a plumber? He would have been a landscape gardener, a Peter Coats, a Harry Wheatcroft. Every line of his enchanting *Herbal or General Historie of Plantes,* published in 1597, betrays the keen eye, the skill, the patience, and the enthusiasm of the born gardener. "Talke of perfect happinesse or pleasure, and what place was so fit for that as the garden place where Adam was set to be the Herbarist?"[11]

The fact was that apart from a few botanizing enthusiasts, most physicians in the sixteenth and seventeenth centuries were not interested in pursuing the study of medicinal plants other than on paper, in elegant herbals, and within the straitjacket confines of the humoral approach with its endless categories and subdivisions. It seems to have occurred to few of them to investigate for themselves the action of the abundant home-grown medicinal plants that were available in fresh, reliable form, to test them singly on patients instead of in the combinations of dozens of herbs that doctors usually prescribed, and to make notes of the results.

Both indifference to and ignorance about their native medicinal plants seems to have been almost universal, confirming Paracelsus's angry conviction that physicians and apothecaries were only impressed by exotic imported herbs, while scorning those in the local hedgerow. In the preface to his 1542 work on medicinal plants, the German physician Leonhart Fuchs (1501-1566) took his colleagues severely to task:

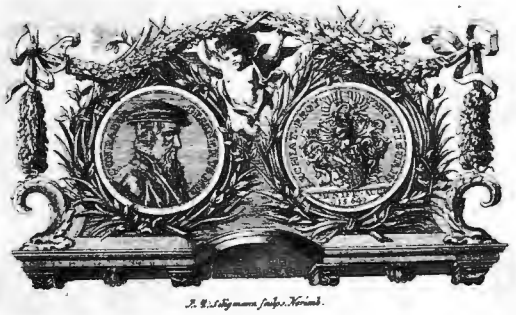


"by immortal God, is it to be wondered at that kings and princes do not at all regard the...investigation of plants, when even the physicians of our time so shrink from it that it is scarcely possible to find one among a hundred who has an accurate knowledge of even ...a few plants?"[12]

William Turner (1520-1568), himself a physician and a distinguished graduate of Cambridge, made the same point in his preface to the Herbal he published in 1551: in his student days, he said, he had found it impossible to learn the names—Greek, Latin, or English— "amongst the Phisicions of any herb or tre, suche was the ignorance in simples at that tyme".[13]

Professional snobbery is the most likely explanation of this attitude. Perhaps at no time in history had the physician's training been so completely theoretical, with its emphasis on classical studies. The full degree course at Oxford or Cambridge lasted up to fourteen years (Thomas Linacre, Henry VIII"s personal physician, was thirty-two by the time he graduated), and included a solid grounding in the classics. Many of the wealthy young men who took up medicine went abroad to take their degrees, rounding off their education in the widest possible sense at Paris, Montpellier, Salerno, or Basel. Linacre himself was a Padua man, and a meticulous classical scholar, who had delved in Italian libraries for obscure early Greek medical texts to add to the canons of received knowledge, and published his own recension and translation of them.

The sheer length of his training must have convinced the sixteenth-century physician that all available medical knowledge was now at his fingertips. To men like these—a



Left to right: Valerius Cordus; Leonhart Fuchs, Conrad Gesner. Photos courtesy of the Lloyd Library, Cincinnati, OH. Bottom of page 28: *The Grete Herbal* by P. Treueris, 1526, courtesy of the Hunt Institute for Botanical Documentation, Carnegie Mellon University, Pittsburgh, PA.

well-bred and exclusively educated elite—it was unthinkable that anyone less well-trained than themselves should dare to describe himself as a doctor. It was even more unthinkable that the home-grown herbs used by amateurs and by vast numbers of illiterate quacks might possibly be more effective than the grand compounds taken from Avicenna or Mesue which they prescribed for their wealthy patients.

And in the reign of Henry VIII these quacks and amateurs represented real competition to the physicians. It was bad enough that, as a result of the flood of herbals, doctoring with simples had become a fashionable amateur pastime:

"for now [say they] every man without any study of necessary artes unto the knowledge of Phisick; will become a Phisician ...every man nay every old wyfe will presume, not without the mordre of many, to practyse Phisick."[14]

But as well as these presumptuous amateurs, England—and London in particular—was running over with self-styled medical practitioners of every kind.

There were, first, the surgeons, who had been making rapid strides professionally, since the invention of printing began adding to their knowledge and resources. Theoretically, surgeons were supposed to stick to surgery and leave internal medicine to the physicians, but many of them had quietly been developing into general practitioners under the very noses of the physicians. The brand-new scourge of syphilis had brought them plenty of profitable business, as well as a new class of customer, since syphilis cases were commonly referred to them: "upon the cure of Venereal disease ... alone", it was reckoned, "the subsistence of three parts in four of all Surgeons in town depended".[15]

Hard on the heels of the surgeons proper, who had neither Guild nor Charter, came the barber-surgeons, a proud and independent City company who had obtained a Royal Charter in 1462; but they, in turn, were expected to confine themselves only to the lower reaches of surgery—cupping, bleeding and tooth extraction, activities advertised to this day by the bloodred stripes of the barber's pole.

Next in actual importance came the apothecaries, who learned their craft as apprentices. The English apothecaries fancied that they knew quite as much about simple and compound medicines as any grand physician. Many of them probably did, but in hard fact, they were a mere cog in the wheel of the great and powerful Grocers' Company, who had received their Royal Charter even earlier than the barber-surgeons.

The apothecaries were expected to keep on hand stocks of all the drugs commonly used in medicine, from agrimony to unicorn's horn. But since their most profitable lines—the sugar confections, spices, syrups and electuaries which kept for months—were always being creamed off their business by the grocers, leaving them with deteriorating supplies of costly perishable drugs, many had no choice financially but to do a little prescribing on the side, and drum up extra business in that way.

Below these ranks of skilled or semiskilled practitioners there swarmed, according to the preamble in the Letters Patent which gave Linacre his College of Physicians,

"a great multitude of ignorant persons, of whom the greater part had no insight into physic, nor in any other kind of learning; some could not even read the letter on the book, so far forth, that common artificers, smiths, weavers and women, boldly and accustomably took upon them great cures, to the high displeasure of God, great infamy of the faculty and the grievous hurt, damage and destruction of many of the King's liege people."[16]

It was, one suspects, those illiterate smiths and weavers who particularly stuck in the physicians' gullet. But all the same, there was an obvious need for some form of supervision or control over this seething mass of practitioners, many of them foreigners. And although everyone could see it was unrealistic to insist on over-rigid lines of distinction in the country at large—where people simply tended to call on whatever form of medical aid happened to be available—London was another matter altogether, and its exploding population, which climbed from 30,000 to 200,000 during this century, made it particularly vulnerable to exploitation by quacks.

So it was with the full backing of both Henry and his minister Wolsey that the physicians pressed for legislation which would give them authority to deal with these abuses, and in 1512 Parliament passed the first of a series of acts designed to regulate the practice of medicine in London and the provinces. This Act dealt chiefly with London, restricting the practice of medicine within a seven-mile radius of London in the future to graduates of either Oxford or Cambridge, unless they had been licensed by the Bishop of London on the recommendation of four physicians.

The title plate of Gerard's *The Herball*. First edition, 1597. Courtesy of the Bodleian Library at Oxford, U.K.

Page 31 Left to right: title plate of Gerard's *The Herball*, 1633 edition, courtesy of the Lloyd Library, Cincinati, OH. *The New Herbal*, by W. Turner, 1551, courtesy of the Hunt Insititute for Botanical Documentation, Carnegie Mellon University, Pittsburgh, PA; John Gerard, courtesy of the Lloyd Library, Cincinati, OH.

Six years later, in 1518, the College of Physicians was set up by Letters Patent, as the formal regulatory body which such legislation obviously called for; and in 1523 the existence and authority of the College were not merely confirmed by Parliament but actually extended—at least in theory—over the whole country.

Neither Wolsey nor Linacre can have supposed for a moment that this system of control, however sweeping in theory, could be made effective in practice. What it did, however, was set up administrative and legal machinery, lacking until then, by which the worst abuses mentioned in the first Act—those practitioners threatening "grievous hurt, damage and destruction" to their victims—could be dealt with. And this appears to have been the intention of Parliament.

It was not, however, the first object of the physicians, who following the very first Act of 1512 had almost immediately set in motion the first of a series of demarcation disputes which eventually touched off a sort of domino effect throughout the medical hierarchy: the physicians suing the surgeons for practising medicine, the surgeons rounding on the barbers for practising surgery, and both of them occasionally falling on the apothecary.

In another attempt to straighten out medical matters, Parliament passed two more acts in the early 1540s, the first of which reconfirmed the authority of the physicians, and gave them control over both surgeons and apothecaries; and the second of which formally united the Surgeons and Barber-Surgeons into one grand new Company, and gave them control over surgical matters in an area extending one mile around the City. As a sop to the surgeons, however, the barbers were now strictly forbidden to practise surgery.

These Acts, far from keeping everybody happy, simply produced a fresh crop of victims, since the surgeons, smarting under their new subjection to the physicians, but at least secure in their own rights, fell mercilessly upon some of the simple, unlicensed practitioners they felt were poaching in their preserves—women who had been giving medicine "for helyng of womens papes" or "giving water to young children to heal cankers in their mouths", and a brewer named Margetson "for giving water to cleanse men's yeese [eyes]".[17] But it turned out that far from being the docile victims the surgeons had imagined, at least one of them—the brewer—had friends in high places, and the retribution of Parliament was swift and severe.

In an Act worded with biblical eloquence, it castigated the surgeons who

> "minding onely their own lucre, and nothing the profit or ease of the diseased or Patient, have sued, troubled, and vexed divers honest persons, as well men as women, whom God hath endued with the knowledge of nature, kind and operation of certain Herbs, Roots and Waters, and the using and ministring of them, to such as has been pained with customable diseases, as Womens Breasts being sore, a Pin and the Web in the Eye, Uncomes of hands, Scaldings, Burnings, Sore mouths, the Stone, Strangury, Saucelim and Morphew, and such other like diseases: and yet the said persons have not taken anything for their pains or cunning, but have ministered the same to poor people onely for neighbourhood and God's sake, and pity and charity.

This behaviour, the Act continued, was in contrast to that of the surgeons who allowed many to "rot and perish to death for lack of help" because they could not pay; furthermore, "the most part of the persons of the said Craft of Surgery have small cunning, yet they will take great sums of money and do little therefore, and by reason thereof they do oftentimes impair and hurt their patients".

Since the greed and ignorance of the surgeons left a void in medical care for the poor, therefore, the Act proceeded to legalize an entirely new class of practitioners:

> "it shall be lawfull to every person being the King's subject, having knowledge and experience of the nature of Herbs, Roots and Waters, or of the operation of same, by speculation or practice within any part ... of the King's dominions, to practise, use and minister in and to any outward sore, uncome, wound, apostemations, outward swelling or disease, any herb or herbs, oyntments, baths, pultes and amplaisters, according to their cunning, experience and knowledge in any of the diseases, sores and maladies before said, and all other like to the same, or drinks for the Stone and Strangury, or Agues, without suit, vexauon, trouble, penalty, or loss of their goods".[1]

The final words of the Act were a warning to the physicians, in turn, that they could not invoke any powers granted to them under previous legislation to meddle with the newly legalized herbalists: "the foresaid Statute in the foresaid third year of the King's most gracious Reign, or any other Act, Ordinance or Statute to the contrary hereof made in any wise notwithstanding". [18]

To schoolboys and doctors this Act has been known ever since as the Quacks' Charter. Modern herbalists, however, have called it the herbalists' charter, since the insolent greed of a handful of Tudor surgeons not only ensured the survival of their profession, but provided a flimsy legal roof under which it has sheltered and flourished to this day in Britain.

Three things are immediately remarkable about this Act. The first is its plain implication that outside the ranks of professional physicians, traditional medicine still flourished, and there were numbers of honest people—women as well as men—who were skilled and knowledgeable about herbs, and perfectly capable of providing a much-needed medical service for the poor.

The second is the quite astonishing range of diseases which these practitioners were to be allowed to treat—a range far wider than that of the surgeon, in fact, since not only could they supply dressings, plasters, and ointments for "outward sores" and other disagreeable skin afflictions, but they could also give drinks—which was internal medicine, the physician's province—for three diseases. Any one of these three ailments would be serious enough in our time, and two of them were in Tudor days life-threatening: the stone, strangury (or pain and difficulty in urinating), and agues. Few remedies suggested by sixteenth-century physicians were effective against the agonies of the stone (literally, small calculi trapped in the kidney or bladder); patients who had been treated to no avail could choose either to continue suffering, or to undergo the surgical operation of lithotomy, or being cut for the stone—an ordeal which even two centuries later, when it had been developed into a highly skilled, swift and routine operation, the diarist Evelyn's brother died rather than undergo. There are, however, highly effective plant remedies for the stone—an insignificant creeping plant called pellitory-of-the-wall *(Parietana officinalis)* being one of them—and some of the City practitioners may have built a reputation for cures of the stone by using them.

Several herbs, usually with a marked diuretic action, have been found useful in urinary problems: the herbalists probably prescribed butcher's broom *(Ruscus aculeatus),* recommended by Dioscorides for such cases; horsetail *(Equisetum arvense);* or the tiny creeping scarlet pimpernel *(Anagallis arvensis).*

Ague in Tudor times was almost synonymous with malaria, which was then endemic in northern Europe. Although it was the milder of the two forms of malaria, caused by the parasite *Plasmodium vivax,* it was a debilitating disease, characterized by bouts of tertian, or recurrent, fever, which often led to chronic anaemia, and none of the classic treatments for it were very effective in the days before quinine. Plenty of country wise women claimed to have a cure for it, though; the nineteenth-century Dr. Thornton in his herbal tells the story of an old man who performed wonderful cures of ague and other diseases with the herb tormentil *(Potentilla erecta),* and became so celebrated for them locally that Lord William Russell gave him a piece of land on which to cultivate his miracle herb.[9]

The third point, and perhaps the most striking, to be made about this Act is that it makes plain that however contemptuous physicians and surgeons may have been of the herbalists with their simples, they had powerful friends in high places (Henry VIII included) who had a very considerable opinion of their skills, and thought that they deserved protection and encouragement—and possibly patronage too.

The offhand way in which Parliament, by this Act, legalized the practice of scores of illiterate nobodies shook the College to its foundations, and although the Act had seemed to be directed entirely against the surgeons, many of them actually took advantage of its deplorably vague phrasing to extend their practice.

What was threatened by the Act, moreover—as the doctors could see only too well—was the authority of the proud physicians: how could it be otherwise if any old woman with a glimmering of knowledge or skill should be allowed to take on diseases by which distinguished scholars and gentlemen, with years of training behind them, were defeated?

More than a century later Dr. Charles Goodall (1642-1712), a Fellow of what had by then been raised to the dignity of Royal College of Physicians, wrote a long account of its gallant struggles against "Empiricks and unlicensed Practisers". Largely an exercise in pub-

Title page of *Paradisi in Sole*, 1629. Photo courtesy of the Lloyd Library, Cinncinati, OH.

lic relations, Goodall's book was intended to prove that the College had been devoting its energies for decades to the extermination of unscrupulous and restless quacks, even when these were protected by the highest in the land, as an extraordinary number of them in fact appear to have been; and some fairly horrific accounts of mercurial excesses and backstreet abortion rackets emerge from it.

What is also clear is how seriously the College took the challenge to their professional status represented by the Quacks' Charter, and how savagely they hounded down the modest practitioners of traditional herbal medicine.

In 1581, for instance, the College pounced on "one Margaret Kennix, an outlandish, ignorant, sorry woman", whose practice in ministering to her neighbours and charging for her services too was stopped by the College.[20] It turned out they had caught a tartar: this sorry woman boldly complained to no less a person than the Queen. Now Elizabeth, as it happened, was just as much interested in medicine as her father Henry VIII, and just as much given to dabbling in pharmacy, having once composed a tonic for heart and brain containing amber, musk, and civet dissolved in spirit of roses, which she sent to the Emperor Rudolf II.

Elizabeth may have felt an amateur's sympathy for another amateur, she may have suspected that the physicians were needlessly tiresome and overbearing, or she may simply have had a flicker of fellow feeling for another woman struggling to keep her end up in a man's world. Whatever the reason, Elizabeth took a personal interest in this case, inquired carefully into the circumstances, and being satisfied that Margaret Kennix was no threat to her subjects' lives, directed her Secretary of State, Walsingham, to write to the physicians. It was, he duly wrote:

> "her Majesty's pleasure that the poore woman shoold be permitted by you quietly to practice and mynister to the curing of diseases and wounds, by the meanes of certain Simples, in the application whereof it seemeth God hath gieven her an especiall knowledge."

There followed a courteous threat:

> "I shall therefore desire you...to take order amongst yourselves for the readmitting of her into the quiet exercise of her small talents least by the renewing of her complaint to her Majesty through your hard dealing towards her, you procure further inconvenience thereby to your selfe."

The College was not inclined to take this lying down: they could not possibly reconcile it with their conscience, they wrote firmly back, to "allow either her [or any other person not qualified accordingly] to intrude themselves into so great and daungerous a Vocation ... to the evident daunger of the life and health of such her Majesties most loving subjects, as shall be abused by their notorious and wilful ignorance".[21]

The College had their revenge on Walsingham for meddling when five years later, in 1586, he wrote again on behalf of an Empirick, asking them to have released from prison a man named Not, "forasmuch as both my self have heretofore used him, and divers other Gentlemen have also received good by him". In their reply, the College mentioned tongue in cheek that Not "protesteth openly (and that most infamously as we think and offensively to the credit and good name of such as admit him to their persons) that he dealeth with none but onely for the Pocks".[22]

By the end of the sixteenth century, however, the question of the unlicensed practitioner, though still a nagging preoccupation, was no longer foremost in the minds of the College physicians. The burning issue of the day—an issue which split the College itself into two violently opposed factions—was whether or not they could bring themselves to approve the new chemical medicine, which was rapidly making converts among professional physicians all over Europe.❑

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A Pictorial History of Herbs in Medicine and Pharmacy



Excerpted from

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Robert A. Thom

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Before the Dawn of History

From beginnings as remote and as simple as these came the proud profession of Pharmacy. Its development parallels that of humankind itself. Ancient peoples learned from instinct, for observation of birds and beasts. Cool water, a leaf, dirt, or mud were their first soothing application. By trial, they learned which served them best. Eventually, they applied this knowledge for the benefit of others. The wise man or woman of the tribe, whose knowledge of the healing properties of herbs and plant had either been gathered from experience or handed down by word of mouth from progenitors, was called on to attend the sick or wounded and prepare the remedy. It was from the methods of preparing the substances thus employed for the treatment of an injury or a disease that the art of the apothecary originated. Recorded history as it pertains to the art of the apothecary takes us back forty to forty-five centuries. Though the cavepeople's methods were crude, many of today's medicines spring from sources as simple and elementary as those which were within reach of early humans.

Pharmacy in Ancient Babylon

Babylon, jewel of ancient Mesopotamia, often called the cradle of civilization, provides the earliest known record of practice of the art of the apothecary. Medical treatment was similar to treatments found in the Egyptian papyrus but their documents, written in cuneiform, date from an earlier period than those found in Egypt. Some practitioners of healing of this era (ca. 2600 B.C.) were priest, pharmacist, and physician, all in one. Also there were separate priest-physicians who treated some diseases with religious incantations and psychosomatic remedies whereas there were some secular physicians who employed drugs and what we would call rational therapies. Medical texts on clay tablets record first the symptoms of illness, the prescription and directions for compounding, then an invocation to the gods. Among the drug substances which they used were oils of cedar (*Cedrus* spp.) and cypress (*Cupressus sempervirens*), myrrh (*Commiphora* spp.), licorice (*Glycyrrhiza glabra*), honey, poppy juice (*Papaver somniferum*), nutgalls—all of which are still in use. Early Babylonian science of drugs, their preparation and combination, spread far from the Tigris and Euphrates basins, and influenced Pharmacy's beginnings for many centuries.

Pharmacy in Ancient China

Chinese Pharmacy, according to legend, stems from Shen Nong (ca. 2000 B. C.), emperor who sought out and investigated the medicinal value of several hundred herbs. Also known as the Blazing Emperor, he is reputed to have tested many of them on himself, and to have written the first *Ben Cao*, or native herbal, recording 365 drugs. Still worshipped by native Chinese drug guilds as their patron god, Shen Nong conceivably examined many herbs, barks, and roots brought in from the fields, swamps, and woods that are still recognized in Chinese Pharmacy today. Among the herbal drugs Shen Nong is reputed to have discovered is Ma Huang, or Ephedra (*Ephedra sinica*). In the background is the "Ba Gua," a mathematical design symbolizing creation and life. Medicinal plants include rhubarb (*Rheum* spp.), ginseng (*Panax ginseng*), cassia bark (*Cinnamomum cassia*), and, in the boy's hand, Ma Huang. Shen Nong is a symbol of belief in empirical knowledge, which has been so characteristic an aspect of China's pharmaceutical practice through the ages.

Days of the Papyrus Ebers

Though Egyptian medicine dates from about 2900 B.C., the best known and most important pharmaceutical recorded is the "Papyrus Ebers" (1500 B.C.), a collection of 800 prescriptions, mentioning 700 (mostly plant) drugs. Formulas for gargles, snuffs, inhalations, suppositories, fumigations, enemas, poultices, decoctions, infusions, pills, troches, lotions, ointments, and plasters are included with beer, milk, wine, and honey as common vehicles for most of the compounded drugs. Pharmacy in ancient Egypt was conducted by two or more echelons: gatherers and preparer of drugs, and "chiefs of fabrication," or head pharmacists; a special room in the temple, the *asi-t,* was provided for the head pharmacist's work. They are thought to have worked in the "House of Life" or a medical training center. In addition, it appears that there were individuals known as "conservators of drugs," responsible for proper storage of medicinal substances. In a setting such as this, the Papyrus Ebers might have been dictated to a scribe by a head pharmacist as he directed compounding activities in the drug room.

A Pictorial History

Theophrastus — Father of Botany

Theophrastus (ca. 300 B.C.), among the greatest early Greek philosophers and natural scientists, is called "the father of botany" due to the completeness of his work. He most definitely and systematically fought the superstitious ideas and dogmatism rife in his time, replacing them in his writings on botanical and other subjects with his own observations and logical inferences. Thus scientific observers began to take the place of, or to question the infallibility of, the school of philosophers whose utterances were based upon purely speculative or theoretical musings. His observations and writings dealing with the medical qualities and peculiarities of herbs are unusually accurate, even in the light of present knowledge. In his *History of Plants* he deals especially with the medical qualities and peculiarities of herbs. He also knew of and made use of the ability to change the character of plants by cultivation, transforming, for instance, wild mint (*menthrastrum*) to tame mint (*mentha*). He lectured to informal groups of students who walked about with him, learning of nature by observing her treasures firsthand. He immortalized himself to Pharmacy for having put the sciences of pharmacology and pharmacognosy on a rational basis. In his hand in the picture he holds a branch of belladonna (*Atropa belledonna*). Behind him are pomegranate blooms, senna, and manuscript scrolls. Slabs of ivory, coated with colored beeswax, served students as "slates." Writing was cut into the surface with a stylus.

The Royal Toxicologist— Mithridates VI

Mithridates VI, King of Pontus (ca. 100 B.C.), though he battled Rome for a lifetime, found time to make not only the art of poisoning, but also the art of preventing and counteracting poisoning, subjects of intensive study. The science of toxicology had in Mithridates one of its early promoters. Unhesitatingly, he used himself as well as his prisoners as "guinea pigs" on which to test poisons and antidotes. A formula for "Mithridatum," his famed formula of alleged pan-antidotal powers, alleged to have been found by the Roman general Pompey among the possessions of Mithridates, gradually gained a reputation as an antidote against all kind of poisons, and later as a cure-all. Whether the reputation was true or not, it remained great. The most important modification made was during the first century A.D. by the physician to the Roman Emperor, Nero Andromachus, who added vipers and increased the portion of opium (*Papaver somniferum*). It was this form that was approved by Galen (130-200 A.D) and became the model of the class of compounds known as *theriac* in later pharmaceutical literature. This formula was popular for over a thousand years. Behind Mithridates in the picture are rhizotomists, offering fresh, flowering aconite (*Aconitum apellus*), ginger (*Zingiber officinale*), and gentian (*Gentiana lutea*). At lower right is a crater—a two-piece forerunner of the champagne bucket.

Terra Sigillata — An Early "Trademarked" Drug

People learned early of the prestigious advantage of trademarks as a means of identification of source and of gaining customers' confidence. One of the first therapeutic agents to bear such a mark was Terra Sigillata (Sealed Earth), a clay tablet originating on the Mediterranean island of Lemnos before 500 B.C. One day each year clay was dug from a pit on a Lemnian hillside in the presence of governmental and religious dignitaries. Washed, refined, and rolled to a mass of proper thickness, the clay was formed into pastilles and impressed with an official seal by priestesses, then sun-dried. The tablets were then widely distributed commercially. From a modern point of view, the ingredients (silica, aluminum, chalk, magnesia, and traces of oxide of iron), indicate that this clay might be expected to act as an adsorbent. In the early days, and even up to the early nineteenth century, Terra Sigillata was used as an antidote for poisons as well as in the treatment of dysenteries, internal ulcers, hemorrhages, gonorrhea, pestilential fevers, complaints of the kidneys, and eye infections. The most striking feature of this drug, however, was the way in which it was marketed, and the method of identifying it and warranting its origin from a definite source. The great demand for Terra Sigillata and the good business that the sale of these troches brought caused people in almost every country in Europe to look for similar earths. This trademarking to protect the rights of seller and buyer today has behind it the sanction and approval of some 2,500 years of man's experience in world commerce.

Galen and Drug Compounding

Of the men of ancient times whose names are known and revered in both the professions of pharmacy and medicine, Galen (130-200 A.D.), a top-flight scientist in his day, undoubtedly, is the foremost. He practiced and taught both pharmacy and medicine in Rome; his principles of preparing and compounding medicines ruled in the Western world for 1,500 years. He is remembered for his extremely complex prescriptions, sometimes containing dozens of ingredients. He prepared his medicaments himself, and his treatises dealing with the preparation and use of drugs contain a profusion of formulas. Formulas of this type make up the class of pharmaceuticals compounded by mechanical means—*galenicals*. His formulas indicate a most intelligent use of opium, hyoscyamus, hellebore, grape juice, wine, and cold compresses. To further his knowledge of the action of drugs, and to assure more dependable and accurate results form his treatments, Galen developed many methods for mixing, extracting, refining, and combining drugs. These ideas carried over into the late eighteenth century, and have their counterparts today in compounding, both at the retail pharmacy and in the large manufacturing laboratory.

He was a pillar of medicine; the first important pillar in the millennium of Greek domination of the medical world. Physician to the emperor as well as commoners in the Roman empire, he traveled extensively, lectured widely, and wrote prolifically. Among his many and varied publications are no less than 30 books touching on pharmacy. The great Greek was a shrewd observer who gained much experience through experimentation. His theories were not called into question until the more realistic approaches of the sixteenth, seventeenth, and eighteenth centuries. He was the originator of the formula for a cold cream essentially similar to that known today.

Dioscorides—

A Pictorial History

In the evolution of all successful and enduring systems of knowledge there comes a time when the observations of many people, or the intensive studies of one person, transcend from the level of trade of vocation to that of a science. The Greek physician, Pedanios Dioscorides (first century A.D.), contributed mightily to such a transition in pharmacy. In order to study materia medica, Dioscorides accompanied the Roman armies throughout the known world. He recorded what he observed, promulgated excellent rules for the collection of herbs, their storage, and use. His texts were considered basic science as late as the sixteenth century. Of a keenly scientific turn of mind, he recorded what he observed, as he observed it, without compromise with or deference to the persistent myths and wrong guesses of the day. The highly critical Galen (130-200 A.D.) stated, "In my opinion, he is one among the various authors who has presented the most perfect discussion of the drugs." Many authors consider him to be the most important representative of the science of herbal drugs in antiquity, the greatest of all the men concerned, and a genuine natural scientist who observed and examined the reports conveyed to him. He described the herbs exactly and arranged his descriptions methodically, becoming the accepted teacher of pharmacognosy.

A Scientist Looks at Drugs

Monastic Pharmacy

During the Middle Ages remnants of the Western knowledge of pharmacy and medicine were preserved in the monasteries (fifth to twelfth centuries). These sciences are known to have been taught as early as the seventh, eighth, and ninth centuries in cloisters in England, Ireland, France, Switzerland, and Germany. The first attempt at systematizing this endeavor was made by Marcus Aurelius Cassiodorus (490-585), Chancellor to the Ostrogothic King Theodoric and his successors at Ravenna. The materia medica of the monastic apothecary was mainly drawn from the vegetable kingdom. At first, the neighboring woods and fields furnished most of the herbs and simple remedies. The monks gathered such herbs and simples in the field, or raised them in their own herb gardens. These they prepared according to the art of the apothecary for the benefit of the sick and injured. Gardens such as these still may be found in monasteries in many countries. To the monk-apothecaries, who linked healing of the soul with healing of the body, who preserved the records of the past and carried forward the light of learning and investigation, pharmacy indeed owes much.

The First Apothecary Shops

The Arabs separated the arts of apothecary and physician, establishing in Baghdad late in the eighth century the first privately owned drug stores. Destruction of many libraries and schools, which had begun in the conflicts between the Romans and the Christians, and was later carried on by invading Vandals, Longobardi, Visigoths, and Ostrogoths, had reduced Western knowledge of the sciences largely to that remnant preserved and kept alive in the seclusion of the monasteries. The Arabs preserved much of the Greco-Roman wisdom, added to it, developing with the aid of their natural resources syrups, confections, conserves, distilled waters, and alcoholic liquids. Persian, Indian, and Chinese herbs unknown to the Greco-Roman world, such as camphor, cassia, cloves, cubeb, musk , nutmeg, rhubarb, sandalwood, senna, and tamarind, were described in the treatises of authors writing in Arabic; and in crude form or in preparations compounded therefrom, filled the shelves and drawers of the newly established apothecary shops. Sugar cane grew in the areas occupied by the Arabs, and sugar was produced at a reasonable price, giving rise to a number of new types of pharmaceutical preparations requiring the skill of the experts: syrups of all kinds, confections, and conserves. Distillations of aromatic waters and alcoholic preparations became almost a monopoly of the Arabian pharmacists. In the picture the apothecary is examining logs of sandalwood offered by a traveling merchant, while children indulge their taste for sweets with stalks of sugar cane. When the Moslems swept across Africa, Spain, and southern France, they carried with them a new pattern of Pharmacy which western Europe soon assimilated.

Avicenna — the "Persian Galen"

Among the brilliant contributors to the sciences of Pharmacy and Medicine during the Arabian era was one genius who seems to stand for his time—the Persian, Ibn Sina (ca. 980-1037 A.D.), called Avicenna by the Western world. Pharmacist, physician, poet, philosopher, and diplomat, Avicenna was an intellectual giant, a companion of Persian princes and rulers. He wrote in Arabic, often while secluded in the home of an apothecary friend. During his 58 years, he traveled extensively, studying, teaching and writing about 200 books and treatises while administering for the state as a Vizier. It was his main medical work, his *Canon Medicinae*, which can be regarded as "the final codification of all Greco-Arabic medicine." A large part of this *Canon*, so important to Pharmacy, was written after his escape from political imprisonment. In this, he paid much attention to the right ways of preparing drugs. His pharmaceutical teachings were accepted as authoritative in the West until the 17th century; they still are dominant influences in Asia, where reliance on tradiitonal "energetics" concepts precede Galen.

Louis Hébert, Apothecary To New France (Canada)

Nowhere is the intrepid spirit of self-sacrifice and service to fellow humans which has marked the lives of many pharmaceutical pioneers better exemplified than in the life of Louis Hébert—first pharmacist in Canada, and probably the first to practice his profession on the North American continent.

Young Parisian Apothecary Louis Hébert answered the call of the New World in 1605, when he helped de Monts and Champlain build New France's first settlement, the Habitation, at Port Royal (Nova Scotia). Hébert looked after the health of the pioneers, cultivated native drug plants, and supervised the gardens. At the waterfront, he examined specimens of drug plants offered by friendly Micmac Indians. These included *Eupatorium* (Boneset), *Verbascum* (Mullein), *Arum* (Jack-in-the-Pulpit), and *Hydrastis* (Golden Seal). When the Habitation was destroyed by the English in 1613, he returned to his Parisian apothecary shop. The lure of Canada was strong, however, and in 1617, he and his family returned with Champlain to Quebec where Hébert's "green thumb" gained him lasting fame as the first successful farmer in what is now Canada. He provided free medical attention to the settlers and employees of the Association of Merchants, but was enjoined from entering into trade either with natives or colonists—so his days in an apothecary shop were ended.

The First Official Pharmacopeia

Medieval Italy owed its economic blossoming mainly to the circumstance that the wares of the Orient had to pass through Italian hands before they reached other European countries. It was particularly Florence, Genoa, and Venice which dominated the European trade in oriental herbs and spices. The confusion of different views and varying interpretation on compounding drugs brought about demands for some standard that would warrant uniformity in kind and strength of drugs prescribed by physicians and dispensed by pharmacists. The idea of a pharmacopeia with official status to be followed by all apothecaries originated in Florence. The *Nuovo Receptario*, originally written in Italian, was published and became the legal standard for the city-state in 1498. It was the result of collaboration of the guild of Apothecaries and the Medical Society—one of the earliest manifestations of constructive interprofessional relations. The professional groups received official advice and guidance from the powerful Dominican monk, Savonarola (seated, foreground), who, at the time, was the political leader in Florence. The content of the *Nuovo Receptario* was based entirely on the Greco-Arabic drug therapy of the time. Some 50 years were to elapse before the example of Florence was followed and official pharmacopeias began to appear in other political jurisdictions.

Sertürner—First of the Alkaloid Chemists

Swedish pharmacist Carl W. Scheele paved the way for isolating organic plant acids; but it remained for a young German apothecary, Friedrich Wilhelm Adam Sertürner, hardly having finished his five years of apprenticeship, to probe opium's secrets, to give the world opium's chief narcotic principle, morphine; and to recognize and prove the importance of a new class of organic substances: alkaloids. His first announcements challenged, Sertürner in 1816 conducted a new series of bold, startling experiments in his apothecary shop in Einbeck, including a series of physiologic tests on himself and three young friends. Recognition and fame followed. Relocating in an apothecary shop in Hameln, Sertürner continued organic chemical experimentation and discovery throughout his life. His greatest tribute, however, lives in today's highly developed field of alkaloidal chemistry, for which he laid the basis.

Caventou, Pelletier, and Quinine

Taking their cue from Sertürner's alkaloidal experiments, two young French pharmacists, Pierre-Joseph Pelletier (1788 -) and Joseph-Bienaimé Caventou (1795-), isolated emetine from ipecac root (*Cephaelisip ecacuanha*) in 1817; strychnine and brucine from nux vomica (*Strychnos nux vomica*, ignatia bean) in 1818. Then in their laboratory in the back of a Parisian apothecary shop, they tackled the problem that had baffled scientists for decades—wresting the secrets of the Peruvian barks that were so useful against malaria. In 1820 Caventou and Pelletier announced the methods for separation of quinine and cinchonine from the cinchona barks (*Cinchona* spp.); prepared pure salts, had them tested clinically, and set up manufacturing facilities. Many other discoveries came from their pharmacy-laboratory, and high honors were accorded them. But in making known his methods of preparation of quinine, and especially of its sulfate, Pelletier refused, for the sake of humankind, to exploit this discovery as a monopoly. The research activities of this pair of pharmacists did not stop with their success with quinine. They went on, as a team, individually and in collaboration with others, to make further discoveries; but it is for quinine that they are best remembered.

The Shakers and Medicinal Herbs

The most unique of American sectarian ventures into drug plant cultivation, and by far the most important, was undertaken by the Shakers. Begun about 1799, and commercially important by 1830, the medicinal herb industry flourished, hit its peak in the 1860s, then waned at the close of the century. The medicinal herb industry was a natural outgrowth of the Shakers' early interest in gardening and agriculture, necessary to the self-sufficiently of their communities. The "physics garden" at New Lebanon, New York by 1850 occupied about 50 acres, given over chiefly to cultivation of henbane (*Hyoscyamus niger*), belladonna (*Atropa belladona* L.), dandelion (*Taraxacum officinale* G. H. Weber ex Wigg.), aconite (*Aconitum carmichaelii* Debx.), poppy (*Papaver sommiferum* L.), lettuce (*Lactuca sativa*), sage (*Salvia officinalis* L.), summer savory (*Satureja hortensis* L.), marjoram (*Origanum majorum* L.), dock (*Rumex crispus* L.), burdock (*Arctium lappa* L.), valerian (*Valeriana officinalis* L.), and horehound (*Marrubium vulgare*). Extract of taraxacum was an important product. Nearly 200 varieties of indigenous plants were collected, and 30 or 40 varieties were brought from the South, West, and Europe. The Shakers gathered or cultivated 248 varieties; dried, chopped, and pressed them into "bricks"; wrapped, labeled, and sold them to pharmacists and physicians the world over. Tons of solid and fluid extracts also were produced. The Shaker label was recognized for reliability and quality for more than a century.

Henry Hurd Rusby — Wresting the Jungle's Secrets

Expeditions in search of new medicinal plants probably are as old as Pharmacy. Scientific adventurers, such as Henry Hurd Rusby (1855-1940), opened vast new horizons for the advancement of Pharmacy and Medicine late in the nineteenth century. Sent by Parke, Davis & Company in 1884 to Peru for supplies of coca leaves, Dr. Rusby crossed the Andes and journeyed down the Amazon to the Atlantic amid incredible hardships. He returned with 45,000 botanical specimens. Among them were many new drug plants, including cocillana bark, pharmaceutical preparations of which are still important to medicine. Dr. Rusby later became Dean of the College of Pharmacy of Columbia University. (See *HerbalGram* No. 39, pages 57-61 for a related story.)

George Bender (l.) and Robert Thom (r.)

The Artist – The Concept

Robert Thom, painter and illustrator, spent nearly 20 years in collaboration with writer George A. Bender and the American Institute of the History of Pharmacy in researching and developing the two series, *Great Moments in Pharmacy*, and *Great Moments in Medicine*. He estimated that he and Dr. Bender traveled nearly a half-million miles in seeking information and rechecking paintings and stories for the 85 subjects in the pharmacy and medicine series.

For example, when researching in the Oriental Institute (University of Chicago) for production of the painting on the beginning of Chinese pharmacy, it was suggested by an advisor that the pair consult with a Dr. Eliza Veith, recently arrived from Germany, who was knowledgeable on early Chinese medicine. The advisor did not know where she lived, but sent them to a building where they might find her, since she had a class scheduled that afternoon.

According to Dr. Bender, "Since historical research is much like doing detective work, Thom and I set about the task locating a good-looking German blonde on a campus populated by thousands of students and faculty. At the appointed hour, we entered the building, and its elevator. A lady approximating the description given us also entered. She got off at the right floor, and entered the right room. As the class had not yet started, Thom entered and asked her if she would good enough to step out into the hall. She came—her eyes round with fear. 'How did you find me?' was her first question. It took a couple of minutes to reassure her that this was not a Gestapo operation, and that all we wanted was to make an appointment to consult with her at a convenient time."

When Thom contacted a prominent rug merchant in Detroit for possible backgrounds for the painting of Avicenna, they were stuck with his resemblance to the portraits furnished by the Iranian Embassy, so he became Thom's model in costume for reference photos for the painting.

"One day I discussed my dream project with Bob," said Bender. "In a way characteristic to him, Bob took off for Chicago and the Field Museum, which had a series of dioramas of mankind, beginning with the cave period. A few weeks later, Thom came in with the caveman painting—the first one in the history of pharmacy series. We took the caveman painting and our outlines to the APhA [American Pharmaceutical Association] Convention in 1949. There, at a private dinner Thom and I unveiled our painting and our ideas. From that meeting came sufficient encouragement for us to continue our efforts. Little did we realize that it would be two years before the first story and picture would be reproduced!"

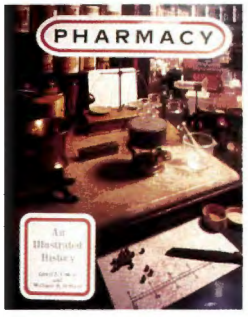
The original material is devoid of binomials and footnotes since, according to Bender, "It was our aim to tell our story through the eyes of as many people as possible—not to try to hide it behind folds of style. I was not writing for historians, but for the broadest possible reading audience."

Robert Thom and his wife Nelli, while visiting their two sons, were killed in an automobile accident in southern Michigan during the Christmas holidays in 1980.

Professor George Bender, author of the original text, was a pharmacist, editor, advertising executive, author, and teacher. Historical work had been a major interest for him since the late 1940s, culminating in the two volumes, *Great Moments in Pharmacy* and *Great Moments in Medicine*. This work earned for him the 1976 Edward Kremers Award of the American Institute of the History of Pharmacy. After presumably retiring to Arizona, he launched into academic work at the University of Arizona, as Professor (teaching the history of pharmacy) and as Administrative Aide to the Dean of the College of Pharmacy from 1970 to 1974. He died at eighty, in September 1985.

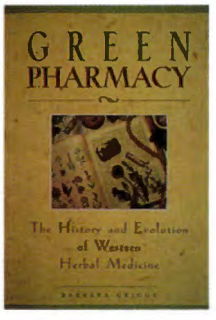
Books of Historical Interest

Available from the American Botnical Council's Herbal Education Catalog



PHARMACY:
AN ILLUSTRATED HISTORY
by David Cowen and William Helfand. 1990. 300 illustrations, 151 in full color, which vividly portray pharmacy's varied and intriguing artifacts and paraphernalia, its shops, laboratories, heroes, curiosities, foibles, and triumphs. Includes aspects of pharmaceutical lore and history. Hardcover. 272 pp. $75. #B107

KREMERS AND URDANG'S
HISTORY OF PHARMACY
by Glenn Sonnedecker. Revised 4th edition. 1976. Comprehensive history and leading textbook in U.S. colleges of Phormacy. Originally published in 1940, Softcover. 571 pp. $20. #B073



GREEN PHARMACY
by Barbara Griggs. 1991. A fascinating account of the ideas, personalities, advances, and vicissitudes that have shaped the course of herbal medicine and pharmacy. Focuses with candor and clarity on the professional, economic, and social forces that have periodically consigned herbal medicine to near oblivion, and presents a strong case for the cyclical emergence of alternative medicine at times when some conventional methods of treatment have lost their safety and efficacy. Softcover, 379 pp. $19.95. #B187

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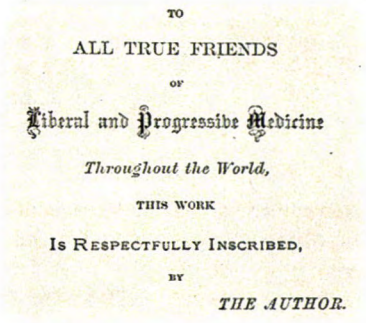
The Role of Botanical Medicine in 100 Years of American Naturopathy

by Francis Brinker, N.D.


TO
ALL TRUE FRIENDS
OF
Liberal and Progressive Medicine
Throughout the World,
THIS WORK
IS RESPECTFULLY INSCRIBED,
BY
THE AUTHOR.

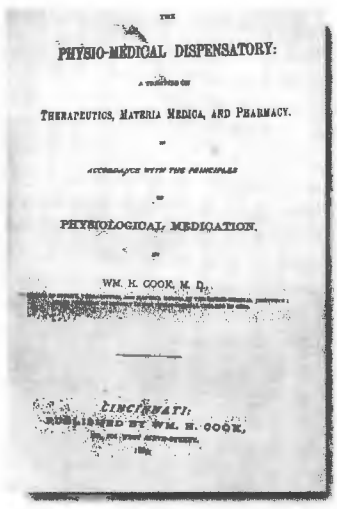
FROM HYGIENICS AND PHYSIOMEDICALISM TO NATUROPATHY

The introduction of naturopathy into America was a development of the German nature cure in a new land where it succeeded similar hygienic and herbal systems. The combination of water cure and other natural methods was not unfamiliar in America. The American hydropathic movement of using water in the treatment of disease was centered in New York in the mid-19th century. Its major practitioners and teachers included Dr. Joel Shew, Dr. Russel Trall, Mary Gove and her husband Dr. Thomas Nichols, and Dr. James Caleb Jackson. Hydropathy evolved into hygeiotherapy when Dr. Trall incorporated popular health reform ideas such as temperance, vegetarianism, and avoidance of drugs from such promoters as Sylvester Graham, Samuel Thomson, and others. The *Water Cure Journal,* established in 1846 by Shew, was renamed the *Herald of Health* by Trall in 1863. The momentum of the hydropathic and hygienic movements dissipated with Trall's death in 1877.[1,2] John Harvey Kellogg (1852-1943) had been a student of Trall's who afterwards pursued a conventional medical education. He practiced and taught "biological living" in his books, the Seventh Day Adventist magazine *Health Reformer*, and in his sanitarium at Battle Creek, Michigan. Dr. Kellogg was largely responsible for the eventual acceptance of rational hydrotherapy and electrotherapeutics in conventional physiatrics.[2] Meanwhile, empirical water cure experienced a resurgence in the 1890s due to the influence of the German priest, Fr. Sebastian Kniepp (1824-1897), and his book, *My Water Cure*.[1,3,4]

Samuel Thomson (1769-1843) had initiated a rebellion against depleting, "heroic" medical practices in America in the early 1800s by combining simple herbal remedies with steam baths and enemas. His system placed heavy reliance on two chief herbs: cayenne (*Capsicum* spp.) and lobelia (*Lobelia inflata*). A botanic medical reform movement of Neo-Thomsonian doctors developed which in 1852 came to be known as physiomedicalism, a term denoting "nature's medicines." This group was founded in 1838 by Dr. Alva Curtis, who established its first school in Ohio the next year. Its basis of practice was epitomized by Dr. William Cook's *Physio-Medical Dispensatory* published in 1869. The physiomedicalists emphasized the use of sanative, or nonpoisonous, botanical remedies to balance functions and enhance vitality.[5,6,7] They promoted nutrition of tissues and excretion of waste, restoration and maintenance of proper tone of diseased tissues, and removal of obstacles to vitality. Obstructions to health were perceived as irregular action of the nervous and/or circulatory systems. These deranged functions led to a loss of equilibrium and chemical destruction of tissues, manifesting as disease symptoms. Physiomedicalists used combinations of herbal remedies to assist in the correction of these pathological imbalances.[8] However, with the death of Alva Curtis in 1881 physiomedicalism began its decline in America.[5]

Benedict Lust (1872-1945) was a German immigrant to America in 1892 when he contracted tuberculosis. After being cured in Germany by Kniepp's treatments, Lust returned to the United States in 1896, commissioned by Fr. Kniepp to spread his methods of water treatment combined with herbs and simple lifestyle changes.[1,3,4] Lust established a sanitarium, store, and the magazine *Amerikanische Kneipp-Blatter* in New York. He had also examined other nature cure institutions in Germany and had obtained an osteopathic degree in New York in 1898. He com-

Above, dedication plate of *King's American Dispensatory* from the American Botanical Council Library. Left: Samuel Thompson, photo courtesy of the Lloyd Library, Cinncinati, OH.



Left: Sebastian Kneipp, courtesy of the National College of Naturopathic Medicine, Portland, OR. Center: *Physio-Medical Dispensatory,* by William Cook, 1869. Courtesy of the Lloyd Library, Cinncinati, OH. Right: Benedict Lust, Courtesy of the National College of Naturopathic Medicine, Portland, OR.

bined all natural methods together under the distinctive term naturopathy. Thus, his English-language magazine *The Kniepp Water Cure Monthly* was renamed *The Naturopath & Herald of Health* in 1902. That same year Dr. Lust established the Naturopathic Society of America and the American School of Naturopathy, functioning as president of both (prior to, and following, name changes) until his death.[1,4]

Contemporary and complementary to the establishment of naturopathy, an elaborate explanation of the principles of natural healing, *The Philosophy of Physiomedicalism* by Dr. J. M. Thurston, was published in 1900. The enhancement of vitality was paramount for physiomedicalists, and herbs were only used to draw out potential vitality, not produce it. The human organism was perceived as essentially a realm dominated by vital force expressed as functional actions. In disease conditions its nature is inherently resistive, eliminative, and restorative. For instance, vital action of the body was seen as the most powerful antiseptic; so while fever was controlled, it was not subdued. Cleansing the cellular environment by assisting elimination was deemed necessary before nutritive processes and restoration could begin. While herbs could assist healing, overprescribing by amount or number of remedies was considered counterproductive, since the body responds better to being coaxed than driven. Various botanicals were condemned as neural poisons in any amount. These included aconite, belladonna, cannabis, conium, datura, digitalis, hyoscyamus, nux vomica, opium, physostigma, strophanthus, tobacco, and veratrum.[9]

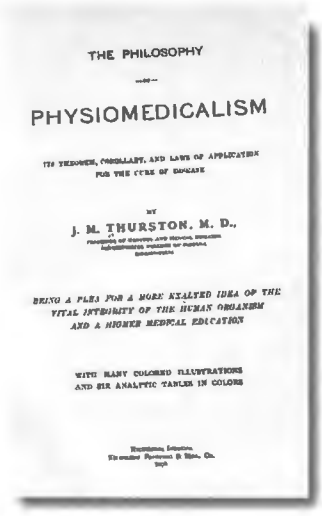
In 1910 the only physiomedical college remaining in America was the College of Medicine and Surgery in Chicago, Illinois,[10] which by 1912 had merged with a regular medical school.[11] A 1902 graduate of this college, Dr. Swinburne Clymer, after acquiring an osteopathic degree practiced for sixty years in Pennsylvania.[12] His book *Nature's Healing Agents*, written in 1905, describes nonpoisonous herbal remedies being used by what he called the "natura physician." In his natura system, or newer science of medicine, diet and plant remedies supply the chemical needs of the body that, when unmet, lead to disease. He also utilized the steam bath, wet packs, and enemas from the old Thomsonian system.[13] The philosophical and practical connections between the former physiomedicalism and emerging naturopathy were evident.[8]

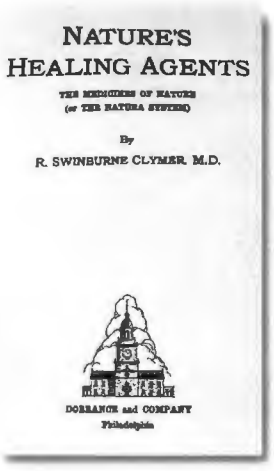
HERBS IN EARLY NATUROPATHY

The first issue of the first volume of *The Kneipp Water Cure Monthly,* begun in 1900 and edited by Benedict Lust, included an article entitled "Herbs and their Healing Power." It stated, "As a first help in all diseases, herbs should be in every household; and once there, they will be valued very highly." Over 20 herbs were specifically mentioned (camomile, chickweed, coltsfoot, common elder, dwarf elder, juniper, peppermint, bilberries, anise, fennel, aloes, fenugreek, blackthorn, nettles, eyebright, ribwort, rue, shavegrass, St. John's wort, yarrow, chicory, and violets).[14] In 1902 certain of these and other herbs were described in *The Naturopath* in the article "Kniepp's Popular Healing Remedies and Their Application."[15] The medicinal importance of small amounts of nonpoisonous plants in mixtures was described in Lust's 1908 article "Science of Herbo-Therapy." The plants were grouped according to organ system or activity. He emphasized that plant cure is not a separate system but is "supplemented by the other factors of nature cure, as light, air, water, gymnastics, massage and mental influence." Lust stated that plant cure is more rapid and radical because it supports the healing power in the body more than any other method, and it eliminates from the body substances that produce disease.[16] Dried herbs or "teas" made from them were the only forms recommended.[14,15,16]

A guest article by Dr. Karl Kahut of Berlin entitled "Phyto-Therapy (Plant Cure)" was included in the same 1908 volume of *The Naturopath*. He told how the old physiatric nature cure used only external applications of physical agents without medicines. He insisted that if medicines are not poisonous and contain only substances similar to those in the body, then they agree with the nature of the body. He thereby defended plant cure as part of nature cure. However, he noted that some natural substances such as arsenic, mercury, and strychnine can be poisonous and destructive, and these are not used by nature cure.[17]

In 1916 *The Naturopath* began a regular Phytotherapy Department (subtitled "The American Herb Doctor"). It was edited by





Left: *Philosophy of Physiomedicalism* Center: *Nature's Healing Agents*
Right: John Uri Lloyd. Photos courtesy of the Lloyd Library, Cinncinati, OH.

M. G. Young and discussed human ailments and medicinal herbs.[18] So it was in 1921 that an editorial was deemed necessary to address the concern in a profession claiming to be drugless as to whether herbs are drugs. It stated: "The principle behind the use of these simple remedies is quite different from the administration of poisonous and metallic drugs which contain no vital principle and cannot be metabolized by the animal body.... It is not therapeutic substances or treatments that cure but the forces of the body through its natural power of reaction. Cure is brought about through the elimination of encumberance [sic] and the raising of vitality.... Herbs supply the different glands of the body with vital, organic material to so chemicalize the accumulated wastes that they are readily eliminated.... If "medicine" has extracted their active principles and concocted therefrom poisonous, life-destroying drugs, shall we condemn the herbs? Reason is all that is required in this matter."[19]

Another important spokesperson for naturopathy had a different view. Dr. Henry Lindlahr was also an American immigrant from Germany whose midlife treatment by Fr. Kniepp for diabetes reportedly saved his life and restored his health. Lindlahr then spent a year at other nature cure establishments in Germany before returning to America. In Chicago he studied osteopathy and received a license in drugless healing in 1902 before obtaining his medical degree in 1904 from the National Medical University. There he ran a sanitarium, started the Lindlahr College of Nature Cure and Osteopathy, and wrote a number of influential books on natural therapeutics.[1,4,20] A staff member at his sanitarium wanted to sell a number of German herb teas in the supply department, but Dr. Lindlahr replied, "No, I will not agree. Though I am in sympathy with the use of these preparations in many cases, my great aim is to emancipate people from the dope idea, and we will never do that so long as we give or sell medicine to any extent."[21]

Even Lindlahr's students did not necessarily share this attitude. Dr. Anna Abrahams Bingesser was a graduate of Lindlahr's college.[22] Her husband Carl, also a naturopath, was director of the best known sanitarium in Kansas, located at Waconda Springs.[23,24] They had worked there together since their marriage in 1907 and provided naturopathic care typical of their own German heritage.[24] They were also respectful of the native American traditions associated with this famous mineral springs that was sacred to tribes throughout the Great Plains. Anna incorporated into her practice the use of herbs which she learned from a local healer known as "Indian John."[22] Naturopaths respected Indians' knowledge of herbs, including the ability to counterbalance toxic botanicals given internally. The similarities in Indian usage of American plants compared with Old World uses of herbs of the same genera were noted approvingly.[25] Naturopaths also learned innovative native American applications of indigenous plants.[26]

In an ongoing association of herbs and vegetables as naturopathic remedies, a series entitled "Food Remedies" by Florence Daniel appeared in the magazine *Nature's Path* beginning in 1927. This publication was started and edited by Benedict Lust as an outreach to educate the public. Among the food remedies described were apple, asparagus, celery, cresses, cinnamon, coffee, fig, garlic, grape, lavender, lemon, nettle, nutmeg, olive, onion, orange, parsley, pineapple, plum, prune, radish, rhubarb, sage, spinach, thyme, tomato, and turnip. In the same volume after Lust condemned the use of pharmaceutical medicines advertised for ordinary ailments, the use of wild spring herbs as food and medicine was advocated. Dandelion, horseradish, mustard, dock, leek, wild turnip, burdock, cowslip, catnip, sarsaparilla, peppermint, wintergreen, and wild ginger were discussed.[27] In response to the question, "Are herbs drugs?" the early naturopathic belief was, simply stated, "Herbs are vegetables."[19]

FROM DRUGLESS PRACTICE TO HERBAL MEDICINE

Naturopaths began identifying with herbs and expanding their herbal repertoire more in the mid-1930s. One of the first articles to document medicinal herbs of the Southwest used by Indians and Hispanics appeared in *Nature's Path* in 1933. It discussed hierba cota (*Thelesperma gracile*), mastranza (*Mentha rotundifolia*), ocotillo (*Fouqueria splendens*), hierba de la piedra (grey lichens or "rockweeds"), contra hierba (*Kallstroemia* spp.), mariola (*Parthenium incanum*), gobernadora (*Larrea tridentata*), and canutillo (*Ephedra* spp.) among others, and described teas made from them.[28] In 1935 a

Far left and left: herbal preparations created by the Lloyd brothers. Photos courtesy of the Lloyd Library, Cinncinati, OH.

column entitled "Herbs" became a regular monthly feature in this magazine, but it covered only their use as teas internally and for poultices, salves, and baths externally. Articles on "Nature's Herbs and their Remedial Values"[29] and "Herb Foods and the Kingdom of Life"[30,31] appearing in *The Naturopath* from the mid- to late-1930s illustrate a contrast in ideas about how herbs are considered. While teas are mostly recommended, a few tinctures began to be mentioned in the context of remedies, as distinct from foods.[29]

Dr. William Turska recalled beginning his naturopathic practice in Oregon after graduation in 1933 from the Seattle College of Chiropractic and Naturopathy. "Naturopathic physicians were using crude drugs and making tea out of them and calling it herbology. I introduced Lloyd's tinctures which I had been studying for years. Since 1925 at age 15, I had been studying herbs and tinctures and eclectic medicine. These Oregon naturopaths said, "Oh no, we can't use tinctures or fluid extracts, those are drugs. They constitute medical practice." A tincture and an herb—they're still the same thing? Well, they finally "evolved" and considered that tinctures were an herbal form and a drugless form of practice so that was adopted."[32] An article on echinacea in *The Naturopath* in 1936 recommended the use of Specific Echinacea.[33] Specific Echinacea was a pharmaceutical extract produced by the Lloyd Brothers, Pharmacists, Inc., Cincinnati, Ohio, a company associated with Eclectic medicine.[34] By the end of the decade, continuing the use of the term "drugless" to describe naturopathy was even being questioned by an official in the American Naturopathic Association.[35]

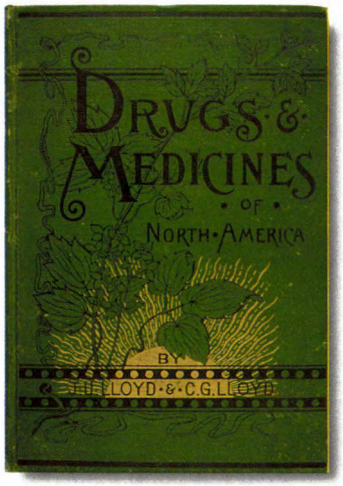
In the 1940s it was stated in *Nature's Path* that "herbalists were the original nature cure practitioners." The ingesting of anything had generally been opposed on the grounds that most people would prefer to swallow a remedy rather than exercise or work constructively on their health. Though nature cure taught that medicine was unnecessary, many difficult cases responded well to nonsuppressive herbs. Herbal simples encouraged elimination of waste through gentle stimulation of excretory organs, and also supplied cells and glands with nutrition in small doses that could readily be assimilated.[36] The fundamental difference between the medical and naturopathic approach to using herbs lay in their preparation. Conventional medicine used preparations made by laboratory methods, extracting the most active constituents, which could transform many relatively safe herbs into toxic drugs. Naturopaths used herbs or their simple extracts in their natural, whole state.[25]

Articles identifying poisonous herbs began to appear in *The Naturopath*. *Taxus baccata* (yew), *Hyoscyamus niger* (henbane), *Atropa belladonna* (deadly nightshade), *Conium maculatum* (hemlock), *Helleborus niger* (black hellebore), and *Solanum dulcumara* (bittersweet) were listed as dangerous in 1940.[37] However, the next year articles by Dr. Norman Budove outlining the use of *Solanum dulcumara, Gelsemium sempervirens* (yellow jessamine), and *Crocus sativus* (saffron), potentially toxic plants, also appeared. He described the preparation of teas from these dried herbs.[38,39] Articles on "medical herbalism" taken from presentations by Drs. Enoch and Carroll Mather to the National Association of Naturopathic Herbalists of America were published in 1942.[40,41] For hepatic dysfunction such potent remedies as *Chelidonium majus* (greater celandine), *Podophyllum peltatum* (mayapple), *Veronica virginica* (leptandra), *Iris versicolor* (blue flag), *Euonymus atropurpureus* (wahoo) and *Sanguinaria canadensis* (bloodroot) were recommended along with the more gentle *Chionanthus virginicus* (fringe tree), *Carduus marianus* (milk thistle, syn. *Silybum marianum*), *Taraxacum officinalis* (dandelion), and *Berberis vulgaris* barberry).[40] These plants, potentially toxic or otherwise, were all characteristic Eclectic medicines.[34,42,43]

ECLECTIC MEDICINE

Eclectic medicine developed from the medical reform movement begun by Dr. Wooster Beach (1794-1868), a contemporary of Samuel Thomson. Beach, in contrast to Thomson, believed in medical colleges and hospitals and the use of all effective botanical remedies, but opposed patent medicines. The basis for his approach to medicine had been delineated in his *American Practice of Medicine* in 1831.[5,44] Beach stated, "The reformed or American Practice combines everthing useful of every other system, and maintains that the physician is to act as the servant of nature."[45] While rejecting devitalizing practices and medications of his day such as bleeding and calomel, he credited "root and Indian doctors" with possessing valuable remedies. By the mid-19th century the movement became known as Eclectic medicine, and its motto was "sustain the vital forces." Discoveries by Dr. John King (1813-1893) led Eclectics to develop concentrates of their medicines, designated as resinoids. However, most of these were either found relatively ineffective or too harsh.[5,7,44,46]

King was a colleague at the Eclectic Medical Institute in Cincinnati of Dr. John Scudder, who devised a method of prescribing single botanical medicines in small amounts according to particular empirical indications. This practice became popular with the publication of Scudder's *Specific Medication* in 1871. King and Scudder



Left: *Drugs and Medicines of North America*, part of a series produced by the Lloyd brothers, from the American Botanical Council library. Center: John Scudder. Right: Wooster Beach. Photos courtesy of the Lloyd Library, Cincinati, OH.

looked to a brilliant young pharmacist named John Uri Lloyd to develop top quality preparations of their botanical extracts. These were then produced by the Lloyd Brothers Pharmacists under the designation Specific Medicines. With an innovative method of prescribing and state-of-the-art medicines, Eclecticism prospered into the 20th century. The publication of *King's American Dispensatory* in 1897, revised by Lloyd and Dr. Harvey W. Felter, was a milestone in scientific and clinical scrutiny of indigenous American plants.[5,7,46] Benedict Lust, the founder of naturopathy, himself obtained a medical degree from the Eclectic Medical College of New York in 1914.[1,4] However, the Eclectic profession declined following the harsh criticism of its medical schools in the Flexner report of 1910. Flexner had depicted the profession as "drug mad" due to its emphasis on botanical medicine. All but one of its colleges, the Eclectic Medical College in Cincinnati, had closed by 1920. In spite of extensive financial support from the Lloyd Brothers, Pharmacists, it followed suit in 1939.[5,7,46]

The evolution of Eclectic remedies had been through clinical experimentation in human diseases (not on healthy animals) with native American plants. It furthered the empiricism of the past by refining extracts of herbs but still viewing and using them as whole remedies. According to John Uri Lloyd, the greatest number of organic remedies had no one dominating chemical structure that could be isolated, so single fragments did not adequately represent the action of the herbal drug as a whole.[47] After their history with the inadequate resinoid concentrates, excepting podophyllin, Eclectic physicians' clinical experience validated the use of whole extracts of good quality. The superiority of refined tinctures or extracts of properly cultivated plants such as homeopathic mother tinctures or Eclectic Specific Medicines over the active constituents of plants like digitalis, cannabis, or bryonia was evident to the experienced prescriber. The major active constituent typically provided only partially the activity found in its established parent plant medicine. However, Eclectics became increasingly more attracted to isolated alkaloids as time went on and commercial manufacturers aggressively promoted them.[48]

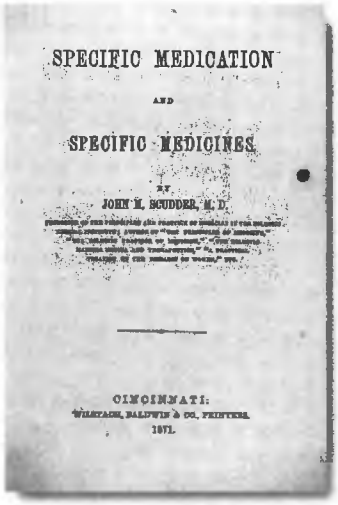
Eclectics clung to their belief in the superiority of natural medicines over mineral or synthetic medicines. Organic matter from plants, they believed, had converted the inorganic crystalline forms of chemicals into colloidal substances that were more compatible with the living cell. The plant was seen as a bridge between the mineral and animal natures, making the elements of one more assimilable by the other.[49] "The plant remedies or nature's remedies all cooperate with nature and aid her in restoring the correct working of all the vital processes of the human body, and the synthetic, chemical or artificial remedies all obstruct and hinder nature, slow up, or stop entirely Mother Nature's vital house-cleaning processes of elimination."[50] While differing in emphasis, Eclectism and naturopathy shared many principles.[45]

FROM NATUROPATHY TO NATUROPATHIC MEDICINE

With the death of Benedict Lust in 1945, the trend toward divergent approaches to practice became apparent in the naturopathic profession. The naturopaths in the Eastern group sought to retain traditional limits on the profession in opposition to the more progressive Western faction.[4] By 1951 the American Naturopathic Association (ANA) succeeded in changing the official naturopathic definition in the Dictionary of Occupational Titles published by the U.S. Department of Labor. The old definition had been: "Doctor, Naturopathic. A Healer. Treats patients with a system of physical culture and drugless treatment of disease by methods supposed to stimulate or assist Nature." The new definition was: "Doctor, Naturopathic. Naturopath. A Healer. Diagnoses and treats patients to stimulate and restore natural bodily processes and functions using a system of practice that employs physical, mechanical, chemical, and psychological methods: Utilizes dietetics, exercise, manipulation, chemical substances naturally found in or produced by living bodies, and healing properties of air, light, water, heat, and electricity... Naturopathy excludes the use of major surgery, X-ray and radium for therapeutic purposes, and use of drugs with exception of those substances which are assimilable, contain elements or compounds which are components of bodily tissues, and are usable by body processes for maintenance of life."[51]

As part of the evolution of the profession, the ANA had appointed a committee in April, 1947, chaired by Dr. A.W. Kuts-Cheraux to investigate, compile, and edit a compendium of natural remedies common in naturopathic practice. The divergence of views proved to be confusing and non-collaborating. Naturopathic knowledge of herbal remedies at that time varied widely among practitioners, many using only common names to identify plants. With the help of pharmaceutical chemists and other qualified persons, scientifically accurate information was accumulated and organized. After two years 310 botanical entities were covered according to composition, preparation, physiological action, and therapeutic uses. Incorporation of toxicology information was also planned.[52] It took five years to complete the manuscript which was published in 1953

Right: Title page of *Specific Medication* by John M. Scudder. Far right: *King's American Dispensatory* by John King, 8th edition, 1870. From the American Botanical Council library.


SPECIFIC MEDICATION

AND

SPECIFIC MEDICINES

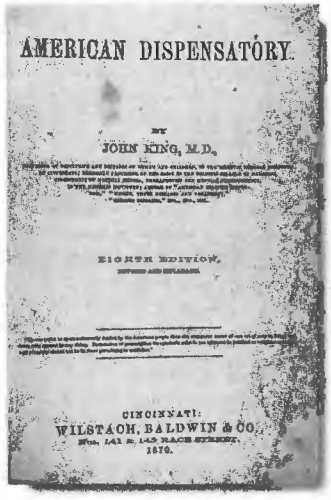
BY

JOHN M. SCUDDER, M. D.

CINCINNATI:

WILSTACH, BALDWIN & CO., PRINTERS.

1871.


AMERICAN DISPENSATORY.

BY

JOHN KING, M.D.,

EIGHTH EDITION,

CINCINNATI:

WILSTACH, BALDWIN & CO.,

1870.

and also included vitamins, minerals, and hormones. According to Dr. H. Riley Spitler, the text, *Naturae Medicina and Naturopathic Dispensatory,* was destined to be the Magna Charta of the profession, presenting the uses of natural medicines "with the naturopathic philosophy of the laws of cure in mind."[53]

In *Naturae Medicina* some of the most potentially toxic medicines known and used by the Eclectics were included. Preparations from *Aconitum napellus, Amanita muscaria, Atropa belladonna, Conium maculatum, Datura stramonium, Delphinium staphisagria, Digitalis* spp., *Gelsemium sempervirens, Strychnos nux-vomica, Physostigma venenosum, Pilocarpus jaborandi, Strophanthus* spp., and *Veratrum* spp. were listed. However, the dosage given for these preparations was extremely small, often less than one drop for liquid extracts, following the clinical practice established by the Eclectic doctors rather than conventional medical prescriptions. Even more interesting is the inclusion of several isolated compounds such as the alkaloids atropine and quinine and the volatiles camphor, menthol, and thymol.[54] Notable medicines excluded were the opiates and antibiotics.[54] The absence of antibiotics is surprising, since their use had been addressed positively by Dr. John Bastyr in an ANA journal article in 1950. He discussed in detail penicillin, streptomycin, aureomycin, bacitracin, polymyxin, neomycin, terramycin, and others. These products were considered by Dr. Bastyr to be appropriate, since they were organic in origin, being derived from lower plant life forms according to the classifications of that time.[55]

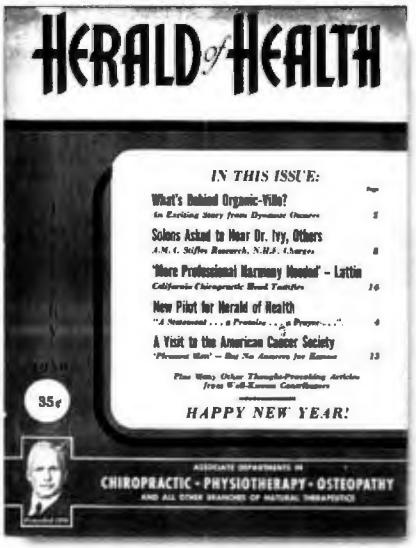
By 1955 only two schools approved by the renamed American Association of Naturopathic Physicians (AANP) remained: Central States College of Physiatrics in Eaton, Ohio, and Western States College School of Naturopathy in Portland, Oregon.[56] That year the Western States College enrollment was 41% naturopaths and 59% chiropractors. Following two years of basic sciences, the naturopathic students were taught an intensive course in phytotherapy beginning in the third year. Tinctures, elixirs, powders and tablets were used in the clinic. Stress was placed on correct dosage and combinations of herbs. The natural substances used were administered orally, topically, or by rectum, but injections were not taught at the college.[57] The teaching of herbology was the only distinction between the school's broad scope chiropractic and naturopathic curricula.[58] Political pressure from the chiropractic profession had begun in the late 1940s to force chiropractic schools to relinquish programs granting naturopathic degrees. After threatening loss of accreditation, the National Chiropractic Association finally forced Western States College to drop its School of Naturopathy in 1956, and it became exclusively Western States Chiropractic College.[4,32,58]

The naturopathic doctors in the Northwest were determined to establish a new naturopathic school, but a debate ensued over the name. Drs. Martin Bleything, William Turska, and other progressives insisted on the inclusion of the word "medicine" in the name to describe the education and the profession. Former graduates from Lindlahr's school and others from the "drugless" tradition opposed this. (The Lindlahr College of Natural Therapeutics eventually became part of the National College of Chiropractic in Chicago which granted its last naturopathic degrees in 1952.) The progressive faction won out, and the National College of Naturopathic Medicine (NCNM) was established in Portland, Oregon, in 1956 and opened a Seattle, Washington, branch in 1959.[4,32,58]

In the mid-1950s Dr. William Turska, who had taught at Western States College, held and communicated strong views on the advancement of naturopathic practice.[58] "Naturopathy as living science is subject to evolution and change of application and advancement.... The modus operandi of application and administration of healing agents has altered slightly from that as it was practiced 50 or 20 or in some instances even two years ago; but the tenets and concept of the philosophy is the same. The progress of science in the understanding of chemistry and physiology necessitates this variance from the practices of former years.... This evolutionary process is an indication of progress.... Today we are embarked upon a new phase of administration of old principles, modern research has opened natural potencies for us, in order to realize the maximum benefits from these potencies and healing agents, they must be administered in the manner best suited in the particular instance.... In the administration of parenteral therapy when indicated, there is no effective substitute."[59] Some naturopathic doctors went so far as to advocate the use of purified active principles such as alkaloids and glucosides as the preferred means of accurate prescribing.[60]

NATUROPATHIC BOTANICAL MEDICINE

In contrast to some of his more medically oriented views, Dr. Turska did not approve of exchanging herbs for alkaloids or medication for wholistic treatment. "We cannot discard botanic medicine, it is natural medicine, it is our forte; botanic medicine is a time honored method of treating and curing the ills of mankind. Their proper usages have been lost in the shuffle of the medical arts by those who became separatists like...the towel and bucket brigade on one hand, and the eclectics on the other who were the fore-runners of present day allopathy as it is, in an attempt to isolate the alkaloids. I dare say if it were not for this 'alkaloidism,' the present farce of chemotherapy, ... naturopathy or any of the cults and isms of healing would



Left: *Herald of Health*, January 1958, Courtesy of Bastyr University, Seattle, WA. Right: John Harvey Kellogg, Courtesy of the National College of Naturopathic Medicine, Portland, OR.

never have gained a foothold. Let it be stated, botanic medicine is only an adjunct to the practice of naturopathy. Do not forget your auxiliaries and corollaries and other adjuncts. You are treating the body—the constitution—not the symptom of or the particular member of the organism. This is basic constitutional naturopathic medicine."[61]

In the late 1950s and early 1960s a regular column, "Botanical Medicine (Phytotherapy)," appeared in the *Journal of Naturopathic Medicine* featuring articles on this aspect of practice. One such article compared the effects of crude botanical drugs such as powders, infusions, decoctions, and tinctures with isolated substances derived from the plants. Medicinal components are released more slowly from crude preparations which helps prevent side effects encountered with the sudden release of purified substances. So-called "inert" material plays a part in the therapeutic activity due to its effect on active principles, and so the complex mixture of substances acts differently as a whole than as isolated ingredients. Many of the active components in vegetable drugs such as enzymes may defy chemical analysis yet are indispensable in their own regard. Minute quantities of associated mineral components can also be of great importance. Standardization of botanical drugs to contain a specified percentage of active principle is the safe way to prescribe toxic botanicals precisely. Otherwise, unrefined botanical preparations should be preferred to chemically manipulated ingredients or synthetic equivalents.[62]

The most appropriate handling and use of botanicals depended on each individual plant. Harvest times for particular plants, appropriate preservation, and the optimal form for administration all require study. Digitalis should only be given in standardized, calculated doses because of the danger of overdosage. Since certain botanicals need to be given in liquid form, water and alcohol or glycerine were considered the most appropriate and useful solvents for extractions. Certain plants were preferably used green, while others needed to be dried.[63] Homeopathic tinctures made by macerating fresh plant parts in solvent were often found more effective when drying a botanical caused some loss of value. The method of using the fresh plant in tablets or pills was believed to warrant more investigation.[26] One naturopathic approach to botanical treatment was administration of solutions via the rectum or colon.[64]

Dr. Turska advocated an approach to botanical medicine prescibing which combined physiomedical-type formulas with a potent Eclectic activator. "We will treat the crude botanic substances in tincture form.... At all times when prescribing a certain so-called innocuous medicant, to hasten the action desired it is necessary to add a synergist of a more active botanical to obtain a desired end result.... It will be noted that some of the botanics are "toxic" in large doses, but their usage is condoned due to the fact that here lies the key to open the door of innocuousness into action, the activation of the potential which lies dormant in most of the innocuous medicines.... It shall also be noted the toxics are never used specifically, nor are they ever used in doses that would bring about anaphylaxis or any untoward reactions.... The enlightened botanic medicalist uses the toxics (so-called) only in minute doses and then only as synergists to activate the more inactive ones to achieve a particular action in a given instance."[61] Such formulas had been a part of later Eclectic medical practice.[65]

Naturopaths treated many infectious diseases without the use of antibiotics. This was not due primarily to the development of bacterial resistance to these wonder drugs, but because of the disruptive effect these powerful medicines had on helpful bacteria in the intestines. In preference naturopaths used other natural methods of destroying germs and stimulating natural immunity that did not disturb the natural flora. Horseradish (*Armoracia cochlearia*) and fresh watercress or garden cress (*Nasturtium* spp.) were found to be effective antimicrobials.[66] In 1950 Dr. John Bastyr noted the antibacterial efficacy of allicin from garlic (*Allium sativum*) and extracts of sagebrush (*Artemisia tridentata*), juniper (*Juniperus communis*), buttercups (*Ranunculus* spp.), and California Spanish moss (*Ramalina reticulata*), if antibiotics were inadequate or a change of therapy was required.[55] Echinacea (*Echinacea angustifolia*) was long considered one of the best naturopathic remedies for infections and septic conditions both locally and systemically because of its inhibition of staphylococcus and stimulation of the glandular system.[33,67]

FALL AND RISE OF NATUROPATHIC MEDICINE

The precipitous decline in interest in naturopathic medicine is evidenced by the small number of graduates from NCNM during the period following its establishment. From 1956-1973 a total of 29 degrees were awarded.[58] Many practitioners felt that the money invested in the college had been completely wasted. However, the existence of the school was enough to keep naturopathic legislation alive in a number of states.[68] During this time Kuts-Cheraux's *Naturae Medicina and Naturopathic Dispensatory* was the required text for the botanical medicine course at NCNM. Dr. John Bastyr functioned as executive director of the college and as one of the lecturers at the Seattle campus during this period.[69]

In 1973 following a greater number of applications for admission, NCNM associated with regular accredited colleges to provide

Right: William Turska (left) and Francis Brinker (right) Photo courtesy of the author.
Far right: John Bastyr, courtesy of National College of Naturopathic Medicine, Portland, OR.

the first two years of basic science instruction.[58] *The Herb Book* by Dr. John Lust, nephew of the founder of naturopathy, became a popular reference text when it was released in 1974, covering over 500 herbs and their use as teas and tinctures.[70] In 1975 NCNM established a clinic in downtown Portland, and a four-year campus was re-established by 1978.[58] During these years Dr. William Turska had taught clinically at NCNM, and in 1978 upon retiring from the school, Dr. Turska was given the honorary title of Professor Emeritus of NCNM. The next year Dr. Bastyr was similarly bestowed the title President Emeritus of NCNM for his contribution to the school in Seattle.[32] (These two former classmates from the Seattle College of Chiropractic and Naturopathy both passed away in 1995.) From 1973-1979 110 Doctor of Naturopathic Medicine degrees were awarded at NCNM. In the meantime John Bastyr College of Naturopathic Medicine was established in Seattle in 1977 by recent NCNM graduates Dr. Joseph Pizzorno (President) and Dr. William Mitchell. The Ontario (now Canadian) College of Naturopathic Medicine was begun in 1978.[58] The healing crisis for the profession was beginning to resolve.

RECENT BOTANICAL DEVELOPMENTS IN NATUROPATHIC MEDICINE

The naturopathic colleges continued to develop their botanical medicine texts and curricula. In 1979 Dr. John Sherman compiled *The Complete Botanical Prescriber* from Eclectic and naturopathic sources used in his education at NCNM. It provided a therapeutic index with prescription indications and dosages and a Toxicology section added by Dr. Bruce Canvasser.[71] Dr. Bill Mitchell wrote *Naturopathic Applications of the Botanical Remedies* in 1982, documenting knowledge he had acquired from Dr. Bastyr and was passing on to new naturopathic students in Seattle.[72] In the early 1980s both NCNM and John Bastyr College (JBC) were offering special electives in Chinese/Oriental medicine which covered the use of herbs in these traditions.[73,74] By the late 1980s JBC had developed a degree program in Oriental medicine, including extensive study of herbs used in traditional Chinese medicine.[75]

In the late 1980s both NCNM and JBC were involved in ongoing original clinical research involving botanical medicine. The NCNM research on freeze-dried nettles (*Urtica dioica*) for allergic rhinitis was accepted for publication by the prestigious European journal *Planta Medica*.[76,77] At this time referenced review articles by Dr. Michael Murray, botanical medicine instructor at JBC, documenting positive clinical results from herbs and their chemical components began appearing in naturopathic and natural medical literature.[78,79,80] Some of these were excerpted from *A Textbook of Natural Medicine*, co-authored by Dr. Murray and Dr. Pizzorno, a landmark comprehensive review of naturopathic philosophy and diagnosis, botanical pharmacology, and the application of naturopathic therapeutics.[81]

Important support for the schools and the profession came from corporations producing botanical medicines that were founded and run by naturopathic physicians. Foremost among these in the 1980s were Naturopathic Formulations (NF) and Eclectic Institute (EI).[82,83,84] NF popularized the practice of adding complementary vitamins and minerals to botanical products. Dr. Bruce Canvasser, a 1977 graduate of NCNM and President of NF, had been director of the teaching clinic, instructor in botanical medicine, and board member at NCNM and a member of the Oregon Naturopathic Board of Examiners. NF provided the re-organized professional association, the AANP, with thousands of dollars of funding for public relations outreach.[83,85] Founded in 1982 by Dr. Edward Alstat, R. Ph., NCNM pharmacy director, and Dr. Michael Ancharski, NCNM clinical director, EI contributed over $250,000 to NCNM prior to 1990, and played an active role in the school's success. It supported the profession in numerous other ways, such as financing clinical studies of botanical medicines.[46,84] EI has also made important contributions to the larger herbal community in the area of botanical publishing. A subsidiary company, Eclectic Medical Publications, reprints classic Eclectic texts to perpetuate their valuable information.[46] In addition to older texts, in 1989 Dr. Alstat compiled recent writings of Dr. Wade Boyle, herbalist Christopher Hobbs, and this author on the history of American botanical medicine, traditional clinical uses, toxicology, and modern scientific botanical research, all of which were published in the first volume of *The Eclectic Dispensatory of Botanical Therapeutics*.[86]

A number of other natural products companies were founded and are owned by physicians who graduated from NCNM and JBC. By the early 1990s these companies also supported the naturopathic profession monetarily and educationally while providing botanical medicinals for doctors. Tyler Encapsulations co-founder Dr. Cory Resnick served on the Board of Directors at NCNM for over ten years. Combining nutritional and botanical ingredients in many of their products, the company motto is "Science and Art in the Service of Health."[87] Bezwecken Transdermals is owned by Dr. David Shefrin who is also part-owner of Tyler Encapsulations and is active in naturopathic politics, teaching, and practice. Bezwecken develops topically applied women's health care products.[88] Among other projects the company contributed $15,000 for NCNM and JBC re-

Far left: Joseph Pizzorno, Left: William Mitchell, photos courtesy of Bastyr University, Seattle, WA.

search on a phytoestrogen herbal formula for menopause[89] and $30,000 to the Institute for Naturopathic Medicine.[90] Botanical Pharmaceuticals founder Dr. Silena Heron has taught botanical medicine at four naturopathic colleges over many years including six years at JBC. Her company provides consultations and customized formulations.[91]

Still other botanical companies and their naturopathic physician owners have supported the naturopathic professional association while developing their own product line niche. Scientific Botanicals founder Dr. Ed Madison, who has been a clinical instructor at JBC, produces botanical concentrates based on pharmacologic investigation of the scientific literature.[92] Wise Woman Herbals founder Dr. Sharol Tilgner served as pharmacy director at NCNM. She now manufactures an extensive line of her own botanical extracts.[93] Pure Encapsulations, owned by the married team of naturopathic doctors Jacqueline Germain and Enrico Liva, also a registered pharmacist, produce nutritional supplements and standardized, concentrated botanical extracts without fillers for doctors.[94] Dr. Elizabeth Burch, co-founder of Earth's Harvest with her herbalist husband Dan, is a leader in the naturopathic profession in obstetrics. The company provides topical botanical products and specializes in rectal and vaginal suppositories.[95]

Many other botanical products companies not owned by naturopathic doctors have maintained a supportive association with the profession and contributed to naturopathic education and research. Those funding specific services and national or state initiatives in support of naturopathic medicine include Phyto-Pharmica, Herb Pharm, Gaia Herbs, Thorne Research, Metagenics, and Murdock Pharmaceuticals. Other contributions have involved the companies Yerba Prima, Progena, Amazon Herb Company, Bioactive Nutritionals, Ayush Herbs, Frontier Cooperative Herbs, Nutri-West Pacific, and Standardized Botanical International. [87,88,92-96]

CURRENT CONTRIBUTIONS TO BOTANICAL PROGRESS

Botanical research at the naturopathic colleges continued apace. A small, preliminary placebo-controlled menopause study using a formula with licorice (*Glycyrrhiza glabra*), burdock (*Arctium lappa*), dong quai (*Angelica sinensis*), motherwort (*Leonurus cardiaca*), and wild yam (*Dioscorea villosa*) in capsule form for the treatment group showed a reduction in symptom severity and an increase in symptoms affected over the placebo group.[97] A controlled trial of the horse chestnut (*Aesculus hippocastanum*) saponin escin in the treatment of contusion was conducted at JBC, while botanical bronchodilators in aerosolized form were tested at NCNM. Naturopathic physicians in private practice also participated in research such as a clinical study on plants containing anti-HIV alkaloids.[98] The latter trial was conducted by Dr. Peter D'Adamo and published in the *Journal of Naturopathic Medicine* of which he was editor. He observed that a freeze-dried (*Helidonium majus*) and greater celandine bloodroot (*Sanguinaria canadensis*) combination together with *Glycyrrhiza glabra* solid extract resolved persistent generalized lymphadenopathy (swollen lymph nodes) in eight of eleven subjects.[99] This re-established journal also published original research on the use of botanical medicines in HIV infections and AIDS-related-complex patients. These studies featured botanical treatment (*Glycyrrhiza glabra, Lomatium dissectum* isolate, *Hypericum perforatum* [St. John's wort], and the Chinese patent medicine formula "Astra 10") in the context of naturopathic therapy, and the effects of glycyrrhizin and bitter melon (*Momordica charantia*).[100,101,102] Extensive literature reviews have regularly been published by the *Journal of Naturopathic Medicine* on the application of botanicals in the prevention and treatment of conditions such as hyperthyroidism, respiratory allergies, and cancer.[103,104,105]

The recent publication of books on botanical medicine written by naturopathic instructors at the American colleges have contributed to the scientific examination of the subject. Clinical review articles including those noted above were also incorporated as part of the second volume of the *Eclectic Dispensatory of Botanical Therapeutics* by this author. These were compiled with scientific research summaries on individual herbs and discussions of plants used historically by indigenous peoples and pioneers in the American West. The portion entitled *Formulas for Healthful Living,* also published separately, puts herb use in the context of holistic naturopathic treatment of systems.[106] Calling for future development and regulatory reform, Dr. Don Brown presents the scientific validation of 18 important botanical remedies commonly prescribed in European medicine in his text *Herbal Prescriptions for Better Health.* He expands on these core herbs in categorizing various herbal remedies by both activities and applications.[107] Dr. Michael Murray, in addition to his many other texts on natural therapeutics, has added a second edition of *The Healing Power of Herbs.* Following the German Commission E model for evaluating efficacy, like fellow JBC graduate Dr. Brown, he emphasizes the use of phytomedicinals standardized to a particular active constituent content whose specific applications have been verified in controlled scientific studies.[108] Dr. Jill Stansbury, botanical chair at NCNM, has written her book, *Herbs for Health and Healing,* to help educate the public on basic naturopathic uses of herbs.[109]

PROGRESS CONTINUES

The naturopathic profession continues to grow and advance natural therapeutics in the context of a holistic philosophy. After many naturopathic practice laws had been sunsetted in the decades of the 1950s and 1960s, three states passed new licensing laws in 1996 (Utah, Vermont, and Maine),[110,111] totaling five in the last five years (Montana in 1991 and New Hampshire in 1994).[112,113] With federal recognition of an accrediting agency for naturopathic colleges in 1987[114] full accreditation was achieved by JBC in 1987[115] and NCNM in 1991.[116] As a consequence, applications/freshman enrollment have increased annually at NCNM from 94/50 in 1991 to 243/90 in 1995, 263/106 in 1996 and 307/113 in 1997.[117] Accomplishing a crucial step in the accreditation process, candidacy status was awarded to the newly established Southwest College of Naturopathic Medicine & Health Sciences in Scottsdale (now Tempe), Arizona, in 1994, under the impetus of its founding president, Dr. Michael Cronin.[118] Following international acceptance of applicants for accreditation, the Canadian College was granted candidacy status in 1995 following the re-organization efforts of its president, Dr. Don Warren.[119] In 1995 Bastyr University (formerly JBC) received national accreditation for its MS program in Acupuncture/Oriental Medicine[120] and NCNM developed a degree programs in classical Chinese medicine.[121] The courses in Oriental and botanical medicine at Southwest College have offered an introduction to the use of Chinese and Ayurvedic herbs from the inception of the school.[122] In 1995 Bastyr University was further approved nationally as a provider of continuing pharmaceutical education.[123] As the naturopathic profession had assisted in efforts to pass the Dietary Supplement Health and Education Act,[124] it now promotes passage of the Access to Medical Treatment Act as a means of bringing greater freedom of medical choice to Americans.[125]

In 1996 a group of naturopathic physicians formed the Botanical Medicine Academy as an inclusive organization offering different levels of membership for all serious students and practitioners of phytotherapy. Board certification will be available to qualified naturopaths, other licensed practitioners, and herbalists. The purposes of the Academy are, among other goals, "to establish and uphold the highest standards of excellence in the practice of phytotherapy. . . to promote the knowledge and use of botanical medicines of all traditions and cultures . . . to foster cooperation and integrity among its membership, botanical organizations, experts, scientists, other institutions, groups, the public and various health care professions, with the ultimate aim of optimizing the relationship between plants and humankind to promote human and ecological health."[126]

The growth and development of naturopathy in America over the last century has bridged a number of philosophical, political, and semantic gaps. Aligned early on with American developments in physiotherapy, osteopathy, and chiropractic, naturopathic medicine has come to incorporate Oriental systems of practice and other holistic approaches that complement its emphasis on the healing power of nature. Opposed in the beginning to all varieties of drugs, naturopaths eventually found themselves to be beneficiaries of the Eclectic physicians as the major professional prescribers of botanical medicine in America. This development helped secure for naturopathy an identity as a medical profession. Naturopathic doctors have evolved from the exclusive empirical use of crude herbs and their teas to providing botanical medicines with pharmaceutical elegance whose effects and uses are being confirmed and refined by research. Yet naturopathic medicine has not abandoned what was previously effective to embrace only the fashionably new. Just as naturopathic physicians continue to use water treatments, manipulation, and fasting, so powdered herbs and teas remain a part of their nutritional and medicinal therapies. In addition, modern sophisticated approaches and products take their place alongside the time-tested traditional forms of natural therapy. The German/American roots in nature cure and phytotherapy have grown and branched to develop the umbrella of naturopathic medicine under which all forms of holistic natural therapeutics can come together, complementing one another as well as conventional medical options.

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The New Ethnobotany: Sharing With Those Who Shared:
An Interview With Michael Balick And Rosita Arvigo

HerbalGram's Managing Editor, Barbara Johnston, recently interviewed Drs. Michael Balick and Rosita Arvigo about their ethnobotanical studies in Belize, specifically about their book, *Rainforest Remedies: One Hundred Healing Herbs of Belize*, and the program they have developed for supporting traditional healers from the proceeds of their book.

HG: What does the work of the ethnobotanist, who studies the relationship between people and plants, involve?

Balick/Arvigo: In the past, ethnobotany frequently focused on exploration — a scientist paddled up a remote river to visit a tribe, and gathered information on plants that the people said they used. Today, there is much more of a mutual exchange between the ethnobotanist and their indigenous teachers and more often the work is with people who have been exposed to outside civilization, to varying degrees. Both partners need to receive something substantial out of the research that is being carried out. So, the dynamic of the interchange is much more balanced than ever before. When we began the Belize Ethnobotany Project in 1986, we really committed to developing a project that would give back as much or more than we would receive in exchange, and help strengthen the community of traditional healers in Belize, as well as help the individual healers and bushmasters (persons quite knowledgeable about the rainforest) that we worked with achieve their own goals. And rather than deciding on their behalf what would help bolster their profession and help them individually, we asked them to help us develop some of the objectives of this project. We also were completely open in informing them of the implications of this work, e.g., what would happen to the information and materials that would be collected during this project.

HG: You work from the bottom up rather than developing your program from the top down?

B/A: We met a number of traditional healers and learned that there was a common theme in many of their requests—to produce a book that could be used by them for teaching their children and also serve as a reference that would in some way help support the validity of traditional healing and help reestablish its importance in the contemporary world. There had not yet been a definitive book done on the medicinal plants of Belize detailing uses, common names, Latin names, research results and illustrations. A well produced record of their home remedies as recorded by ten traditional healers seemed a good contribution to make to the development of this nation.

HG: But the outside world, the "modern" world, how was traditional healing viewed by that group of people?

B/A: Many in local communities in Central America and elsewhere are not convinced that this ancient healing art has a place in

How Traditional Healers Use Their Royalty Payments

A Commentary by Rosita Arvigo

Antonio and Juana Cuc: Both are 80-plus "grannie healers" who raised 15 children; they are the primary care providers for up to 200 family members including children, grandchildren, great- and great-great-grandchildren as well as countless nieces and nephews. The last check was spent on new farming tools for Mr. Antonio and a new dress and kitchen supplies for Miss Juana. The next check will be spent on the rethatching of their house.

Miss Barbara Fernandez: 65, the most well-known traditional healer of the Creole culture in Belize. Aunt Barbara, as she is known, has a herb stall in the Belize City Market where she administers to the entire country at one time or another. Her only daughter, Blossom, died four years ago and left Aunt Barbara with five school age grandchildren to raise and educate. Aunt Barbara's royalty money goes towards clothing, food, and books for her grandchildren.

Mr. Thomas Green: 90-year-old bushmaster, dorry maker and village healer of Duffy Bank, Cayo District, is now too old to work as a canoe guide which was his only source of income for a decade. His royalty payments go toward his personal needs such as food and clothing.

contemporary society. Therefore, our commitment to the healers was to produce a simple, inexpensive, carefully written book with information on the use of plants in the context of the local beliefs, but also containing clinical information, where available, on the efficacy of the plants. In this way, we hoped to establish greater understanding of the work and importance of the traditional healers of Belize.

HG: How did you go about producing the book they wanted?

B/A: In 1987, we began to gather information from 10 traditional healers who chose to work with us during the early years of the project. These included: Dona Juana Cuc and Sr. Antonio Cuc of San Antonio, Cayo, patriarchs who have cared for many generations using traditional plant remedies; Miss Barbara Fernandez of Belize City, who has an herb shop in the Belize City market that is well known and respected throughout the country and who has authored *Medicine Woman: The Herbal Tradition of Belize*, a book on medicinal herbs; Mr. Thomas Green, of the Cayo District, who learned his trade in the chicle, rubber, and mahogany camps, and is an accomplished canoe craftsman as well; Mr. Winston Harris, of Cristo Rey, Cayo District, known as a master of jungle survival (bushmaster), as well as a snake bite healer; Don Eligio Panti, originally from the Peten of Guatemala, former resident of San Antonio, Cayo District, now deceased but who was the most famous of all traditional healers in Belize; Mr. Andrew Ramcharan, Ranchito, Corozal District, known as the most accomplished snake bite healer in all of the north of Belize, a crucial skill in an area covered with sugarcane fields that harbor many snakes; Miss Hortense Robinson, of Ladyville, Belize District, who has been a midwife for over 50 years, and works as a general practitioner specializing in ailments of women and children; Mr. Polo Romero, an accomplished snake doctor and bushmaster who learned his craft while working in rubber, mahogany, and chicle camps; and Dona Juana Xix, of Sukkotz Village, Cayo District, who is a primary health care specialist and midwife to residents of many of the surrounding villages.

We also worked with a very talented artist, Laura Evans, who drew black and white illustrations for the book. One of our colleagues, Norman Farnsworth, provided us with information from the NAPRALERT data base which helped us track down clinical information that might be available for the book. Jim Duke provided us with information on chemical composition of the plants from his data base. In addition, we searched The New York Botanical Garden Library and other sources of information on traditional clinical uses of some of these plants, such as from other cultures, and this was all included in the book. We then approached Mark Blumenthal for advice on how best to get the healers' message out to an audience that went beyond the Belizean community. Mark introduced us to our publisher, Santosh Krinsky, of Lotus Press and he became very excited about this effort and agreed to publish *Rainforest Remedies: One Hundred Healing Herbs of Belize*, and help support our work through its publication.

HG: The people that you wrote the book for—the healers and their students and patients, as well as other people in Belize—are they using this book?

B/A: Belize is a country of high literacy. It is also a country where English is the primary language, as a former English colony. We decided to make the first publication in English. We have had numerous requests for a Spanish version from traditional healers and primary health care providers from many Central American countries, and we are in the process of translating it and are looking for a publisher for that version. The book is to be found in many households—we were delighted to find that it is so widely used by local people in Belize. Interestingly enough, both German and Dutch publishers picked up the book and it has been translated into these two languages. We also hope it will be published in Spanish .

HG: What is the crossover of this book with other regions in Central America?

B/A: That is an interesting question. We found that many of the plants used in traditional healing in Belize are also found in areas such as Mexico, Nicaragua, Honduras, Guatemala, Panama, and elsewhere in the Caribbean. What is fascinating is the cross-cultural comparisons of the uses of plants in traditional healing in other

Winston Harris: 55-year-old renowned bushmaster of Belize, uses his royalty to feed and educate his 12 children in the village of Cristo Rey. Mr. Winston's only source of income is from his work as a bushmaster. Being named in the book has given him prestige in his village—now he and the others have been elevated by their community to healers, doctors, and experts in their field.

Don Elijio Panti: 103 years old when he died in 1996. This was the only source of income other than our monthly stipend for him so it meant that he was not a charity case in his last years. The royalties were paid to his grandson who was able to purchase the basic needs of the aging healer until he died. For Don Elijio it was a great source of pride that he was able to provide for himself up until the end. The healers voted to allot his royalty payments to Miss Beatrice Waight.

Mr. Andrew Ramcharan: 90-year-old snakedoctor and village healer who lives alone but close to his family in the village of Ranchito in Corozal. He has a great-granddaughter whose mother died a year ago. She requested to stay with Mr. Andrew and his royalty check helps to keep her in high school. Without this money either she wouldn't be able to go or he would have to rely on a member of his family to help him. He has independence and self-reliance at the age of 90 because of these payments.

Miss Hortense Robinson: A 67-year-old herbal midwife and traditional healer of Ladyville. She has been trying to build a birthing center for 20 years with no success because of the lack of finances for materials and labor. She takes only what her clients can afford to pay and most of the time has a household of up to eight persons to provide for by herself, since she has no husband. So, her roy-

countries both in the region and elsewhere. For example, working with one of the healers, Mr. Andrew Ramcharan, who is of East Indian descent, we found that a number of the plants that he uses are also used in traditional Ayurvedic medicine in India. So, a significant percentage of these plants can be found used elsewhere around the world, thus helping to show their efficacy.

Dr. Jim Duke found that a vine used for birth control in Belize was used for the same purpose with the exact same dosage in Peru. A good 25 percent of the plants in *Rainforest Remedies* can be found throughout the Americas—such as roses, lemon grass, ginger, banana, mango, avocado, and many more. So, this makes it a very useful book for people in many different countries and cultures. Americans who study herbs have been fascinated to find some very uncommon uses and names for their own common plants. For instance, the red hibiscus, (*Hibiscus rosa-sinensis* L., Malvaceae) is thought of mostly as a decorative plant wherever it grows in gardens or pots. Few are aware of its use in traditional healing to staunch the flow of post partum hemorrhage, to heal skin conditions, and its fame as a food to replace iron in the blood.

HG: If the reader wants to delve more deeply into the lives of some of the traditional healers that have provided information in this book, is there a reference that they can go to?

B/A: Yes, Rosita Arvigo recently published the story of her apprenticeship with one of the most distinguished of the healers we have worked with, Don Eligio Panti. *Sastun: My Apprenticeship with a Maya Healer*, is available through the ABC Catalog (#B087. $14.00) Also in the ABC Catalog is *Plants, People and Culture: the Science of Ethnobotany* (#B196, $32.95), co-authored by Michael Balick and Paul Alan Cox. The book includes much additional information on traditional healing and ethnobotany.

HG: How did you actually publish and distribute *Rainforest Remedies*?

B/A: Basically, we took loans secured by our homes to pay for its publication. This might seem a bit risky, but we had a reason — to use our own funds rather than go to a foundation or other source, in order to have more say in how the book royalties are distributed. As a result, a significant percentage of the royalties derived from this book have gone directly to a fund to support the traditional healers who so graciously collaborated with us in Belize. They did not ask us for this kind of long-term financial support at the beginning of the project, but this is one of the aspects of the "new ethnobotany" where traditional peoples receive benefits from the work as well—after all, it is *their* information. Benefits should be afforded one's collaborators at several levels. In this project, there are immediate benefits, including job creation, development of a community of healers, educational opportunities, travel and attendance at symposia, to name a few.

Benefits at the second level of benefits are mid-term, such as the traditional healers fund that is supported by royalties from the book. By early 1998, $16,754 had been raised for these 10 people who used the money in various ways (see box). We have structured the royalty payments as follows: 15 percent of sales in Belize—not profits—go to the healers fund. This is an important distinction. Each of the healers has been assigned a certain number of shares—one, two, or three shares, depending on how much time, effort and knowledge they contributed to the project. From books sold in the U.S. at our lectures, 10 percent of sales goes to the healers fund. Lotus Light, the publisher, has pledged 10¢ per book sold to the fund. The healers are paid by check every 6 months—in June and December.

The third level is the long-term benefits, such as any income that might come from a drug discovery program. This is a possible outcome through our collaboration with the U.S. National Cancer Institute and other groups, such as Shaman Pharmaceuticals, Inc., who have made reciprocity an important part of their way of conducting business.

HG: Would you call this the new paradigm of ethnobotany?

B/A: Yes, we consider this a new type of relationship with the people who teach us ethnobotanical knowledge. Traditionally, such books might be published with a press run of a few hundred and the books might be priced in a way that they were not be accessible to the people who actually needed them the most and were interested in using them. What we tried to do with this book was to make a

alties have greatly assisted the building process. Each check goes to a special aspect of her new birthing center—a washroom, a set of windows, part of the roof, the septic tank, etc. One of her adopted children recently ran up a clothing bill at a store where she worked and the owner threatened to slap a lien on Miss Hortense's property, so her last check actually went to pay off that bad debt to keep her land title clear or she might have lost all! She told me last year that if she couldn't get this birthing center finished, she would stop delivering babies. For the past 50 years she has birthed them *all* on her own bed and slept on the floor next to them.

Mr. Leopoldo Romero: "Polo" as he is widely known, is a 55-year-old accomplished bushmaster and snake collector of medicinal plants. Using the royalty paymeeents over the past few years he has constructed a new home, one step at a time, using one payment, for example, to buy cement blocks, another to build the roof.

Miss Juana Shish: Village healer of Sukkotz in Cayo District. She raised 15 children and has one disabled daughter still living at home —and her youngest who is about to be married. Her royalty checks have helped her start a business. With this money and the help of her sons she has set up a restaurant and one guest cottage known as Las Palmeras. Visiting seminar groups spend a few hours with her and enjoy her wonderful cooking. So the royalty payments have given her financial security and a future in the growing tourism market of Belize.

single inexpensive publication with as large a print run as possible, in order to make the information accessible to teachers and practitioners of traditional healing, as well as the academic community. Often we see beat-up, dog-eared copies of the book in the hands of students, healers, housewives, and teachers. That is a most gratifying experience.

HG: What was the print run?

B/A: The first print run was 10,000 copies which sold within a couple of years. Since that time the book has been reprinted and we expect shortly after this issue of *HerbalGram* comes out that the second edition of *Rainforest Remedies*, updated and expanded with new information, new clinical studies, and a source list for the herbs, will be published by Lotus Press (available from the ABC Bookstore).

HG: What are some of the other publications and results of the Belize Ethnobotany Project?

B/A: Rainforest Remedies was one of the early products of the Belize Ethnobotany Project. Other products have included *Coloring Book of the Maya Rainforest*, a bilingual educational activity/coloring book in English and Spanish for children to put them in touch with their traditions and the use of plants; a video, *Diary of a Belizean Girl: Learning Herbal Wisdom from our Elders*, used in many schools in Belize to teach the importance of traditional knowledge; and within a year, a checklist of the vascular plants of Belize with annotations on their common names and uses will be published by The New York Botanical Garden, co-authored by Michael Balick, Michael Nee, and Daniel Atha. A major resource to appear from this project will be the book that we are now working on, *Messages from the Gods: The Ethnobotanical Wealth of Belize*. In this publication, we expect to have an encyclopedic treatment of some 850 plants and their uses in traditional practices in Belize, as well as a dozen or so chapters on the relationships between plants and people. Of course there are many thousands of herbarium vouchers, on which the information can be verified, and a computer data base that resulted from this work. Through other funding sources, The New York Botanical Garden was able to donate $14,000 worth of herbarium cases to herbaria in Belize that desperately needed state of the art curatorial facilities for the plants we collected, as well as a computer system donated to the Belize Center for Environmental Studies to serve as one of the local repositories of data for the collections and checklist of the flora.

HG: Who has supported your work in Belize?

B/A: The Belize Ethnobotany Project has been an endeavor bringing together a coalition of people and funders who believe in the idea that grass roots efforts aimed at reviving traditional healing are crucial priorities. We have had a constituency ranging from the Rex Foundation (formed by members of the Grateful Dead), The Nathan Cummings Foundation, The Edward John Noble Foundation, The Gildea Foundation, The Overbrook Foundation, The Philecology Trust, The John and Catherine T. MacArthur Foundation, to The U.S. Agency for International Development, The National Institutes of Health/National Cancer Institute, and The Metropolitan Life Insurance Company, as well as many other groups and individuals. These institutions all came together to fund this project in pursuit of a higher level of knowledge about the relationship between plants and people and the potential use of plants as new therapies for diseases such as AIDS and cancer.

HG: Would you consider this work a model for other ethnobotanical projects elsewhere?

B/A: There is something to be learned from any endeavor—what we have tried to do is create a project based on sharing of both scientific knowledge and financial resources. In talking to many of our colleagues elsewhere, we are gratified that there is increased understanding of the need to give back more than is asked for in return. We are delighted to see greater numbers of projects becoming involved in organizing opportunities for traditional peoples to have a stronger hand in conservation of both their traditions and biodiversity. Perhaps that philosophy can serve as a model for other projects. We have also learned a great deal from our colleagues as well as our critics, and our ideas and activities have grown as a result of the project.

If you wish to lend your support to the traditional healers mentioned in this article you can do so by sending your contributions to: Traditional Healers Foundation, Ix Chel Farm, San Ignacio, Cayo District, Belize, Central America. (Certified mail suggested.)

Beatrice Waight: 49-year-old mother of nine, village healer, women's group organizer, and community health care volunteer worker who spends her royalty payments on books, uniforms, and school fees for her children. Her husband makes a small salary at the local saw mill and would not be able to send all of his children to secondary school and feed the household as well. The royalties are enough to pay for books and uniforms for two of her high-school-age children.

Photos courtesy of Michael Balick,
The New York Botanical Garden, Bronx, NY

MARKET REPORT

by Peter Landes

SPICES: Most of the action in the spice markets for the period covered by this report is really a result of action in another *very* active market: currencies, particularly those of Asia. Readers who follow the financial news are surely aware of the precipitous drops in the values of various Asian currencies, particularly the Malaysian ringgit, the Indonesian rupiah and the South Korean won. Korea really doesn't impact much as a spice producing country, but has some effect as a spice consuming country (more on this at a later date). Malaysia and Indonesia on the other hand are very large producers of tropical spices, particularly **Black** and **White Pepper**, **Nutmeg**, **Mace**, **Cloves**, and **Cassia** (cinnamon in the U.S.). There is a large worldwide trade in these commodities and this trade is mostly denominated in U.S. dollars. This creates both a problem and an opportunity for producers and exporters of these items. The problem for the farmer comes from deciding when to sell produce to an exporter for the national currency, which is sinking daily (sometimes even hourly). Do you sell *now*, take the currency and pay off some debts or buy some much-needed food, cloth, or cigarettes or do you wait a little and perhaps get several thousand more rupiahs per kilo for your produce—even though on the world market those several thousand more rupiah are worth the same or even less than a few days before? For the exporter buying in rupiahs and selling in U.S. dollars the problem is even more complex: does he hold onto his stocks, which after all, are climbing in rupiah-denominated value daily, but take the risk that they will soon bring less U.S. dollars—or take the money and run. He could then repay loans and put the profit in a bank that begins to seem more and more shaky and insolvent every day as the full extent of the bad loans that bank has made become apparent. Quite a quandary.

On top of these currency problems there are, of course, the same basic supply and demand considerations that have always existed in trading markets. While demand for spices has always been considered *inelastic* in Western consumer countries, such as the U.S. and Western Europe (after all, nobody in these countries will use *more* **Black Pepper** because it's cheap and nobody will use *less* because it's expensive), this is not the case in developing countries which are large per capita users of spices (and they have *very* large capitas so they *are* a factor). With currency chaos and drops in value many ordinary consumers in Indonesia, Malaysia, Thailand, India, etc., have found that they suddenly possess one-third or less money than they did a few months ago and these hapless victims *will* cut back on luxury items—like spices. It's hard to imagine for many Americans, but, yes, an item that's free on every restaurant table in America is considered an expensive luxury in many parts of the world.

So—what will happen to spice prices? The short-term immediate effect has been a precipitous price drop in items *that are not otherwise affected by supply-and-demand factors*—crops that are already in or are being harvested now (like **Black Pepper**) and not known to be short in quantity. **Cassia** is perhaps the hardest hit of these: crops are normal to large and prices have plummeted—down about 50 percent from recent highs. Your cinnamon bun should be much cheaper next year.

The effect on crops known to be in short supply has been the opposite, as strongly held stocks are parceled out grudgingly by exporters—crops such as **Nutmeg**, **Mace** and **White Pepper**. After all, what will the exporter do with the money he receives that's better than owning an appreciating commodity? The choices are to convert it to a rapidly sinking currency or maybe to deposit it in a very shaky, technically insolvent bank (and pay the taxes on it). Not too appealing.

Mediterranean spices such as **Laurel**, **Basil**, **Marjoram** and **Oregano** continue to languish in the doldrums. We can only wait for the too-cheap-for-too-long syndrome to manifest itself yet again and for farmers and gatherers to finally say (for instance), "What? Basil? Fennel? Marjoram? For that price? The hell with it, I'll grow something else." Then the inevitable shortages and commensurate higher prices will prevail and there *will* be money in growing Basil again—and then the overproduction phase will come again. Around it goes....

BOTANICALS: These markets became *very* active, as we predicted in our last report. Faithful readers will recall that the problem discussed was one of stagnant or even reduced supply just at a time when demand is exploding, especially in the U.S. European demand for botanicals is also very strong but on a more predictable upward growth curve than in the U.S., where demand has increased exponentially this year. Take **St. John's Wort,** for instance. The total U.S. market for this useful herb was probably in the 25-50 ton range for many years. This year the demand in the U.S. alone may well be in the many thousands of tons. One supplier has increased production from 780 tons last year to about 1,500 tons this year and still cannot possibly meet demand. **Saw Palmetto** has gone from a low of about $1.45 per lb. at the beginning of the crop year to about $7.00 per lb. at the time of this writing. Quality is also a continuing problem, as also predicted. Last year's **Chilean St. John's Wort** had a high hypericin content—around the desirable 0.3 percent. This year's production, due to unusual weather conditions caused by the El Niño phenomenon (we're planning on blaming *lots* of stuff on El Niño), is running at less than a third of that. A challenge for manufacturers—and an expensive one at that. Prices up, quality down, and demand outstripping supply: a purchasing agent's nightmare. Many formerly cheap and readily available items are scarce and expensive this year such as **Golden seal**, **Barberry**, **European Valerian**, **Juniper**, and **Cascara.** The list goes on and on with new additions almost daily and little relief in sight as countries that used to export botanicals become net importers of these former hard currency earning commodities.

Care and patience will be required in these markets—care in purchasing quality botanicals from reputable producers, exporters, and importers (e.g.,. the present author's firm) and patience in letting market forces work. Inevitably, markets respond to demand, even sudden demand, and as these items become more available, qualities will rise in response to purchasers' requirements and the cycle will start anew.

POTPOURRI ITEMS: Same as last issue—qualities good, prices cheap, exporters desperate to sell. Will this worm turn? Probably—and probably soon. If anyone cares, they should buy now.

Herbal Products Are Driving Supplement Industry Growth

Based on the proliferation of research and the growth in sales, herbal-based supplements, now represent a solid and growing category.

Reviewing SPINS Distributor Information, both the herbal formulas category, defined as items that contain more than one type of herb, and the herbal singles category have experienced impressive growth for the first six months of 1997 vs. the first six months of 1996.

Herbal formulas grew by 19.3 percent in dollar sales, and herbal singles, representing almost twice the sales of herbal formulas, experienced a 76.7 percent dollar sales increase for the same period.

Among all herbal products, certain segments are driving overall category growth. Cold and flu/immune system products, which include echinacea-, goldenseal, pau d'arco- and astragalus-based formulas, comprise more than 50 percent of category dollar sales and showed 24.6 percent growth in dollar sales from January-June 1997 vs. the same period a year ago. For herbal singles, the cold and flu/immune products represent the largest segment (24 percent of the total herbal singles category) and show a similar growth (24.3 percent) for the same time period. The cold and flu/immune segment is not only increasing in popularity during the cold and flu season but there is a consistent increase in demand during the rest of the year as well.

Other segments showing strong, consistent growth include calmatives (valerian, kava kava, chamomile, hops, and scullcap) and brain/circulation products including ginkgo and gotu kola. For the first six months of 1997 vs. the prior year, calmatives, in some cases marketed as replacements for prescription remedies such as valium, experienced 47 percent growth in dollar sales in herbal formulas, and similarly strong growth, 35.4 percent, as single herbal items. Ginkgo and gotu kola-based items, promoted to support oxygen flow to the body as well as to the brain, showed a 48.5 percent increase in dollar sales as formulas and 34.1 percent in dollar sales as singles.

Clearly, consumers are willing to try the natural counterparts to mainstream OTC remedies, and become loyal purchasers as well.

Finally, emerging segments such as children's herbal formulas and St. John's Wort contribute to the popularity of herbal supplements. Herbal products packaged and promoted for children showed greater than 100 percent growth in dollar sales for the first six months of 1997 vs. the same period in 1996. St. John's Wort, increasingly popular for its reported benefits to relieving depression, increased sales more than fivefold during this period. — *Laurie Isenberg*

Laurie Isenberg is VP of sales and marketing for SPINS, a San Francisco-based provider of marketing information for the natural products industry. For more information about SPINS and its services, call 415/284-0546 or e-mail <laurie@spenceinfo.com>.

[Reprinted with permission from *Natural Business: the Journal of Business & Financial News for the Natural Products Industry*, published by Natural Business Communications in Boulder, Colorado. 1997. Oct.]

OTC Herbal Medicines Worth Millions in U.K.

Market research by Mintel estimates that the total market for complementary medicines in the UK in 1996 was worth £72 million. This figure excludes products sold as supplements, e.g., vitamins, minerals, royal jelly, ginseng, and garlic. It actually covers the sale of licensed herbal medicines, homeopathic remedies, and essential oils.

Herbal medicines accounted for £38 million of sales, representing 53 percent of the market, by far the largest share. It is calculated that sales of the complementary medicines referred to in this survey have grown by 36 percent since 1991. Mintel predicts that they will be worth £104 million by the year 2001. [As of 1/13/98 the exchange rate was $1.6215 US = £1 sterling.] — *Barbara A. Johnston*

[*The European Journal of Herbal Medicine* 3(2). Fall 1997.]

Top Selling Herb Supplements in Mass Market - 1997

Total Sales U.S. Dollars	*12-Week Period* Ending 12/28/97	*52-Week Period* Ending 12/28/97
Total Herbal Supplements	$141,227,680	$441,502,560
Ginkgo	29,425,772	90,197,288
Ginseng	20,057,994	86,048,080
Garlic	17,870,164	71,474,288
Echinacea/Goldenseal	19,114,476	49,189,576
St. John's Wort*	28,081,530	47 774,792
Saw Palmetto	5,789,359	18,381,592
Grapeseed	2,479,788	9,965,772
Evening Primrose	1,789,713	7,299,353
Cranberry	1,739,309	6,182,210
Valerian	1,763,096	6,104,450
Bilberry	1,296,568	4,555,723
Milk Thistle	923,081	3,037,672
Kava Kava	933,182	2,950,132

*Reflects sales of echinacea and goldenseal as individual products as well as the combination.
**St. John's wort sales reflect the May 5 *Newsweek* article and June 27 ABC "20-20" program which featured the herb as a treatment for depression.

Source: *IRI Scanner Data*, FDM (Food, Drug, Mass Market combined), Total U.S., 52 weeks and 12 weeks ending 12/28/97.

IN MEMORIAM

Margaret B. Kreig 1922-1998

Margaret Kreig, author of *Green Medicine: the Search for the Plants that Heal*, died January 12. *Green Medicine* told of the scientific quest for natural remedies in tropical rain forests as well as in up-to-date laboratories. In the 1960s and '70s she was a regular attendee at the annual meeting of the American Society of Pharmacognosy where she became acquainted with Professor Varro Tyler. "Her book, *Green Medicine*, was very important because it called the public's attention to the significance of pharmacognosy at a time when professional interest was waning," says Tyler.

According to Professor Norman Farnsworth, "This book stimulated a great deal of interest—mainly by graduate students—in the pursuit of drug exploration. It is probably the most interesting and authentic book regarding the ethnobotanical approach to drug discovery put out at the time. Unfortunately, she was unable to get the publisher to let her update it during the 1980s. She was a good researcher and she did a great deal of research to demystify or clarify some statements in classical pharmacognosy and some textbooks—e.g., the discovery of quinine from Cinchona—some myths that go back to the 16th century."

Mrs. Kreig researched her topics by traveling with scientific expeditions to such places as South and Central America. She was one of the first Americans to tour medical centers in China, traveling there in the early 1970s in preparation for her writings on Chinese medicine. She served in the Marine Corps Women's Reserve in World War II. She attended the University of Illinois at Urbana-Champaign, the University of Chicago, and Northwestern University. In the late 1940s and '50s she researched the spread of drug abuse among middle-class youths in the U.S. and worked at a drug treatment center in Lexington, Kentucky. Kreig was a public relations consultant to pharmaceutical companies, and was a staff writer and editor at *Parents' Magazine*. Under her pen name of Peggy Craig, she wrote murder mysteries and television scripts about crime. — *Barbara A. Johnston*

Percival Hezekiah "Sledge" Reynolds 1929-1997

"He was the sunshine in every room, the highlight of every party. He brought laughter in times of sadness."

Percival Reynolds, a respected herbalist and traditional healer, will be remembered for the laughter he brought to his family, relatives, and friends. Most of us who knew Sledge would best describe him as friendly, outgoing, jovial, kind, loving, intelligent, and very ambitious.

Percival was born at Sitten River, Belize, May 5th, 1929, the fourth of six children. He attended classes up to standard three when he began in the world of work. He moved to the west in 1949 where he was a laborer at a number of properties. After six months he moved back to Sitten River but did not go alone, for in the west he met and began a 46-year union with Gertrude Alford. He and his family of four returned to Cayo and began working with Mr. Clive Hyde. In 1958 he began at Central Farm where he gained much hands-on experience working with machinery, planting, and gardening. To complement the normal skills he began to build himself academically through ICS correspondence courses.

In 1965 his ambition paid off and he became a Plumbing Instructor at the Vocational Training School in Belize City. He was given the opportunity to study abroad at Stout State University in Michigan.

He then transferred to the Belize Technical College, where he continued to successfully prepare the students for the City & Guilds exam. There he served until retirement in 1987.

In 1979 after he had helped many people with ailments that doctors had given up on, he established Triple Moon Herbs, so named because he harvested his plants in three moons, first quarter, last quarter, and the full moon. He felt that this was essential to guarantee a longer shelf life for his 35 different medicinal formulas. After retirement he refused to sit back; he began in-depth studies on herbs, spending much time reading books and investigating plants found in the forest. Percival also joined the Traditional Healers Association and took part in many exhibitions. He had a great love for sports. He was also actively involved in the local governing body of the village and up to the time of his death was a member of the Belize Creole Council.

He is survived by his wife, Gertrude, nine children, an adopted son, 45 grandchildren, five great-grandchildren, three brothers, and numerous nieces and nephews. — *Rosita Arvigo* (from a presentation at his memorial in Belize)

Aaron J. Sharp
1904-1997

Dr. Aaron Sharp was considered by many the leading international authority on moss. He found identical ancient mosses in Japan, Mexico, and Appalachia that had not evolved for millions of years, which conformed to theories that large tectonic plates on the earth's surface had moved apart. He founded one of the world's best known wildflower events, the annual "Wildflower Pilgrimage," held the last weekend in April in the Great Smoky Mountains for 53 years.

Japan awarded Dr. Sharp the Order of the Rising Sun for his findings on the relationships of ecosystems of Asia and the Americas. He was one of three editors of *Moss Flora of Mexico*, published in 1994 by the New York Botanical Garden.

Born in Plain City, Ohio, he graduated from Ohio Wesleyan University in 1927, received his M.A. from the University of Oklahoma in 1929, and his Ph.D. from Ohio State University in 1938. He taught at the University of Tennessee from 1929 until his retirement in 1974 and was head of botany from 1951 to 1961. He served on the board of governors of the Nature Conservancy from 1955 to 1961. — *Barbara A. Johnston*

Adelma Simmons
1903-1997

Most of us who knew Adelma Simmons of Caprilands Herb Farm remember her earth-colored beanie and cape. She looked, I thought when I first visited Caprilands, like a small, cheery, but purposeful elf.

Adelma organized a small group of friends to study herbs and began to treat the group to modest herbal lunches. As her culinary treats grew more elaborate the group invited friends. Friends attracted more friends. Soon Adelma felt the need to charge for the lunches. Herb gardens in various forms began to sprout around the house. As things continued to mushroom Adelma recognized the potential for an herb-related business.

Once she started to grow a business, Adelma sought out large-scale herb grower Sal Gilbertie, now the largest herb grower in New England, as a main source for her herb plants.

Adelma was a favored herb speaker at meetings and conferences. She designed authentic herb gardens for historic societies, museums, and reconstructed villages featuring 18th-century gardens.

She was also a prolific writer of herb books. One of the most cherished and frequently used is her *A Merry Christmas Herbal,* published in 1968. She started writing, she said, when her herb study group looked around for resource material and found that the few available books were old, out of date, and often out of print, and they invariably were published in England. Adelma began collecting all the herb books she could find. Ever the superb businesswoman, she again recognized the potential of such material and began writing and marketing her own books. Folklore and history had long been one of her many interests. Herb lore, pagan and Christian, was a specialty, and she skillfully wove it into her writing.

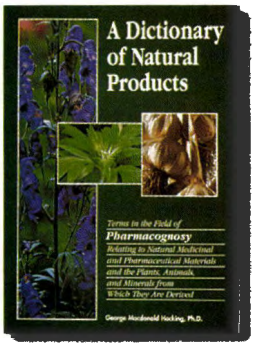
Many of Adelma's admirers, who are now in herb businesses of their own, credit her for inspiring them to start a business.

The compliments, smiles, stories, and her dramatic flair for telling them explains in part the charisma that everyone mentions when they speak of Adelma. "She made you feel good to be around her," say those who fell under her spell.

Just the day before she died Adelma signed her last will and testament specifying that her Caprilands Herb Farm be made into a non-profit foundation for herbal education; a dream which is now a reality.

The Foundation will be a wonderful memorial to a fascinating woman whose motto was "Plant an herb garden. Grow a better world." Adelma Simmons' contribution to the awakening of interest in herbs cannot be underestimated. — *Portia Meares*

Donations to The Caprilands Foundation may be sent c/o Tolland Bank, 3534 Main Street, Coventry, CT 06238.



A Dictionary of Natural Products *by George M. Hocking, Ph.D. Plexus Publishing, Inc. 1997. 994 pp. Hardcover, b/w illustrations. $139.50. ISBN 0-937548-31-6. ABC Bookstore #B300.*

The increased growth of the herbal movement is evident almost everywhere, especially in the sales of herbal products and the proliferation of books and articles dealing with herbs, phytomedicines, medicinal plants, and related topics. With more and more literature being published in this field, one of the most important aspects of the "new herbalism" is the need to be able to understand the language used to describe the plants, their chemistry, their actions, and so on. Consequently, access to a concise yet comprehensive dictionary becomes all the more valuable. The problem that most people have had for many years is that they have usually had to look up terms in several dictionaries and reference books. Botanical terms in a book about botany (or, occasionally in a good general dictionary), chemical terms in *The Merck Index* or similar reference, and terms describing physiological actions in a general or medical dictionary. Wouldn't it be great to find most of these terms in one comprehensive book?

For years, I have had access to several books that certainly helped me in my research. One book I have relied on has been J. C. T. Uphof's *Dictionary of Economic Plants,* published in 1968, a most useful book that was previously out-of-print and then reprinted about 10 years ago in a limited edition. Uphof is one of the classic quick references that gives authoritative information on plant names (arranged by Latin binomial), their geographical origin, and various economic uses.

Over the past few years, I have occasionally toyed with the idea of putting together a group of herbalists and medicinal plant scholars to produce a similar publication—a dictionary of terms used in modern herbal medicine, ethnobotany, and pharmacognosy—a book that would meet all, or at least many, of the needs of people dealing with the realities of herbal medicine in the late 1990s. However, fortunately for all of us, Professor Hocking has done that.

A Dictionary of Natural Products has recently been published and it is a most welcome addition to the growing field of botanical publications. The sub-title of the book provides insight into the scope and range of this work: "Terms in the Field of Pharmacognosy Relating to Natural Medicinal and Pharmaceutical Materials and the Plants, Animals, and Minerals from Which They Are Derived."

This book is certainly a welcome and necessary addition to the library of anyone interested in herbs and phytomedicines, medicinal plants, drug discovery from natural sources, ethnobotany, phytochemistry, and all related disciplines. As such it becomes a valuable tool for members of the herb, dietary supplement, and pharmaceutical industries, researchers, writers and journalists, health professionals, libraries, even regulators and public health officials—in short, the entire gamut of those interested in natural products.

This massive tome has almost 888 pages of definitions plus additional pages of appendices and related references; the total of the entire volume is 994 pages. This compares with the 284 pages of the 1955 edition, which now enjoys an honorable place next to the new book—a place almost within reach of my desk, although I suspect I will no longer have much use for this longtime bibliographic companion.

The range and scope of definitions in the new volume is staggering. Prof. Hocking has included terms from almost every conceivable area of pharmacognosy and medical botany—over 18,000 entries in all. For example, these include, but are not limited to, the following types of terms: English common name; Latin binomials; German common names of both plants, substances, and common items used in pharmacy; colloquial names; chemical compounds found in many plants; and related medicinal plant miscellanea.

The definitions are complete yet concise. Often, the derivation of the word is given. Examples of definitions: "drug: crude medicinal substance; usually appl. to dried crude drugs (plant & animal); prob. f. Dutch *droog* (=to dry); to the layman, usually the term means addictive narcotic - d. fiend (Americanism): narcotic addict."

The word "coon" is included, short for puccoon, root, referring to the genera *Sanguinaria* (bloodroot) or possibly *Hepatica triloba*. Under puccoon one finds the following entry: "term appl. by NA [North American] Indians to pls. [plants] furnishing yellow or red dyes or to pigment; also med.; specif. *Sanguinaria* and *Hydrastis* [Goldenseal]." Some definitions are extensive; for example, *Eupatorium* requires three entire columns (one-and-a-half pages). Most of the brief information on the herbs is listed under the Latin name; if the reader keys in to the common name, it is usually given with reference to the Latin binomial, to which one should refer for data.

I tried an exercise to see how relevant the Dictionary is to the field of modern herbalism in the U.S. First, the herb test. I looked up the top twelve herbs sold in the U.S. market according to the annual survey published by *Whole Foods* magazine. I wanted to check whether Hocking included herbs commonly sold in the market or if his book dealt merely with those botanicals from which conventional drugs are derived. After all, if one were to look at some of the old textbooks in pharmacognosy, the classic plant drugs are always mentioned (belladonna, digitalis, colchicum, etc.) but the herbs of the marketplace used in "folk medicine" were usually not included (garlic, ginseng, ginger, etc.).

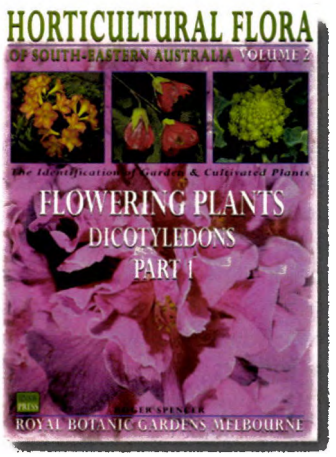
Here is what I found: *Echinacea* is listed, with the three species found in commerce, *angustifolia*, *pallida*, and *purpurea*. There were definitions for garlic, ginseng, ginkgo, St. John's wort (listed as a synonym for St. John's blood in the common name listing; noted under *Hypericum perforatum* mainly as a pesky weed, a.k.a. Klamath weed). Saw palmetto is there. Also listed are goldenseal and information under its Latin name, *Hydrastis canadensis*. So is aloe, astragalus, and cayenne. Siberian ginseng is not found but its Latin name *Eleutherococcus senticosus* is listed and defined. Bilberry is referenced (leaf only). There were no definitions for cat's claw or its Latin name *Uncaria tomentosum*; *U. gaianensis* is listed. In short, the book passes this test. I could try the next most popular herbs, but I suspect Hocking would still easily pass.

The book passes the herb test. But how about the chemical test? Although I was reluctant to test a master like Hocking, for the sake of the reader of this review I gave it a go anyway. As can be expected, the book is replete with information on naturally occurring plant compounds. I looked up chemicals found in the above-mentioned herbs.

I looked up these compounds found in echinacea: cichoric acid (no), echinacoside (no), isobutylamide (no). Garlic: ajoene (yes), allicin (no), alliin (no), diallyl disulfide (no). Ginseng: ginsenosides (no). Ginkgo: ginkgolides (no), bilobalide (no). St. John's Wort: hypericin (yes). Goldenseal: hydrastine (yes), berberine (yes), canadine (yes). Aloe: aloin (yes). Siberian ginseng: eleutherosides (no). So, this book gives only some key compounds in some of the plants listed. This book is clearly not meant to be a comprehensive dictionary of plant chemicals and probably for an understandable reason: the chemistry of plants is so varied and complex that to provide a systematic listing of phytochemistry of medicinal plants belongs to the domain of a separate dictionary of phytochemistry.

The plant chemistry test was a challenge. How about analytical methods, an increasingly important area in the maturing herb market? Here's the scorecard on the following methods: Thin layer chromatography (TLC), no; gas chromatography (GC), no; high performance liquid chromatography (HPLC), no; high performance thin-layer chromatography (HPTLC), no; mass spectronomy (MS), no; nuclear magnetic resonance (NMR), yes! The book does not cover many of the analytical techniques increasingly prevalent in the field of botanical documentation.

This book is authoritative. The author has gone to considerable lengths to document all sources of information from which the information is derived. Appendix A deals with 2,798 specific references used to produce the definitions. Appendix B contains about 130 general references used throughout the dictionary. Appendix C provides a list of "important serials in the field of pharmacognosy and related areas, including both continuing and discontinued titles." This includes what most readers might consider some of the most arcane references in the literature; to the inquisitive and comprehensive Professor Hocking this is just business as usual. Related Appendix C-1 lists periodicals devoted to certain economic plants or special plant products (e.g., references on sugar, cotton, chocolate, citrus, tobacco, cinchona, and miscellaneous). Appendix D lists terms describing properties and therapeutic uses of drugs, pesticides, and some pathologies. Appendix E provides diagrams of types of inflorescences and flowers (as per the previous edition). Appendix F gives examples of plant and animal classification schemes according to modern taxonomic systems. Finally, Appendix G lists plants yielding natural rubber (also found in the first edition). — *Mark Blumenthal*



Horticultural Flora of Southeastern Australia - Flowering Plants. Dicotyledons. Part 1. *R. Spencer. 1997. Univ. New South Wales Press, Sydney 2052 Australia. 606 pp. $96.95. Exclusive distributor in the U.S.: International Specialized Book Services, Inc., Portland, Oregon.*

Delighted to pick up this nicely illustrated volume, I was pleased and surprised when it fell open to pages 118-119, respectively marijuana and hops. And that will give us an idea of how much economic botany and medicine is therein. Re *Cannabis*, the author says, "Cultivation of this plant is illegal and it is a declared noxious weed for the ACT, Victoria and New South Wales. Some innocuous (low THC) clones are grown commercially on a limited scale in Tasmania for fiber production. It has been used medicinally as a sedative. An oil, used in paint and soap, is extracted from the seed. But unmentioned is the sedative activity of hops, legally sold as an herbal sedative here in the U.S.

I've always had trouble separating curly dock (*Rumex crispus* L., Polygonaceae) from broadleaf (*R. obtusifolius* L.), but this flora keys them out the same way most of our U.S. floras do; the curly dock lacks teeth on the valves of the fruit, while the broadleaf dock has teeth. Though less than two inches tall, the illustrations of the plants clearly show this distinction. But there were no medicinal uses. I was disappointed that the author does not mention polygodial (a chemical sesquiterpene) now marketed from Australia for yeast, under *Drimys winteri*,

Forster & Forster f., Winteaceae or winter's bark, one of the main sources of polygodial. Nope. All it said was "USES: Medicinal; the bark was once used as treatment for scurvy."

Like most of our U.S. floras, such books are made for the taxonomic specialists, those botanists who specialize in naming plants accurately, a rare and endangered breed of botanist, badly needed but in short supply in this day of burgeoning herbal sales. This is a good book for the taxonomist, but not of that much use to the U.S. herbalist, unless planning a trip to Australia. Even then, this, as a horticultural flora, will be of more help with cultivated alien plants in Australia than with the local uncultivated Australian plants. Local floras deal with the native plants; horticultural floras deal with the cultivated things from all over the world. Thus, this will be useful to herb, flower, and crop growers of similar climates around the world, where many of the same plants are cultivated. — *James- A. Duke*

Prospecting for Drugs in Ancient and Medieval European Texts: A Scientific Approach. *Bart K. Holland, Editor. 1996 Harwood Academic Publishers. Cloth, 100 pages. $65.00. ISBN: 3-7186-5928-X. ABC Catalog #B327*

"There is an extremely large and readily accessible body of traditional medicine, describing a wide range of plants and other substances, that has not recently been investigated systematically. I refer to premodern western medicine, embodied in the writings of ancient Greece and Rome through the Middle Ages and the Renaissance. Many of the reported remedies have been dropped, of course, because they were preposterous.... But the Greek and Latin herbaria and materia medica do contain, in some cases, descriptions of plants of pharmacological effectiveness whose properties have been forgotten until recently." (Page 2)

This 100-page book is a compilation of seven essays by scholars in their respective fields.

1) Overview: Prospecting for Drugs in Ancient and Medieval Texts (Bart K. Holland)

2) The Medicines of Greco-Roman Antiquity as a Source of Medicines for Today (John M. Riddle)

3) The Medicines of Medieval and Renaissance Europe as a Source of Medicines for Today (Anne Van Arsdall)

4) An Example of a Primary Source: This Booke of Sovereigne Medicines (Elizabeth R. Macgill)

5) What's in a Name: Identifying Plants in Pre-Linnaean Botanical Literature (James L. Reveal)

6) From Plant Lore to Pharmacy: A Prototype of the Process (Thurman Hunt)

7) How Shall We Determine Whether a Treatment Works? (Bart K. Holland)

Thus outlined, allow me to delve more deeply into the essays by Riddle and Van Ansdall in order to provide the reader with the flavor of this interesting and varied work.

John M. Riddle of the North Carolina State University discusses the remedies of Greco-Roman times as a source for medicines today and makes a good case for reviewing those ancient monographs. For example, he cites Cato the Elder (234-149 BCE) who maintained "that cabbage treats ulcers on the breast, supporating wounds, and cancers." Attention of recent has indeed focused on members of the *Brassica* genus (cabbage family) which in fact do have antimutagenic activity—however, there is little scientific evidence that cabbage or other *Brassica* members exhibit antitumor activity when applied topically; if they did, this would give an entirely new meaning to the term "Cabbage Patch!".

Finasteride is sold under the trade name of *Proscar*® by the pharmaceutical giant Merck. Its discovery as a treatment for benign prostatic hyperplasia (BPH) was the product of the rational application of medicinal chemistry as a theoretical deduction of basic endocrinological research. This is all fine and good, but a couple of thousand years ago Dioscorides wrote about nettle (*Urtica dioica*) and its ability to "relax" the lower abdomen and bring on urination. As a consequence of his researches *Urtica* root was employed throughout the Middle Ages as an agent that promoted urinary flow.

Because of *Urtica's* use in folk medicine German scientists conducted a double-blind study, in 1993, of *U. dioica* root and *Pygeum africanum* bark in patients suffering from BPH. Compared with placebo, patients on the herbal blend showed significant improvement in urinary flow, residual urine, and urinary volume within six to eight weeks. Furthermore, laboratory tests, at least initially, assert that this herbal combination works the same way as does finasteride—namely, that some yet unidentified phytochemical causes the inhibition of 5-a reductase.

Another interesting piece of information is the fact that finasteride promotes the growth of hair. Hippocrates (not Dioscorides) noted this same peculiarity in his patients who received nettle, *U. dioica.* If only the pharmaceutical scientists had read

the ancient texts they would have run across these worthwhile morsels of potentially profitable information!

An entirely different aspect of research is discussed by Anne Van Arsdall in her piece. She states that little comparative work has been done in order to ascertain remedies which have persisted from Greece to Rome to the Middle Ages, the Renaissance and then into the modern historical period. For this she offers the example of treacle:

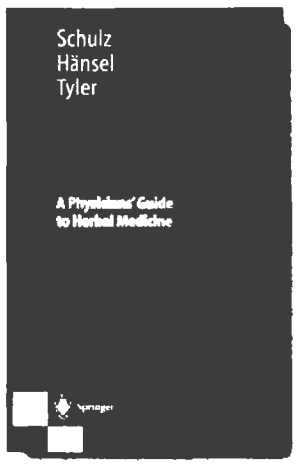
. . . Venice treacle is a good example of what moderns disdain in ancient medicines—but what was in it and why it was popular for centuries, until as late as the nineteenth century, is not understood. Treacle is a medicinal compound first used in Rome as a remedy against poison, then for centuries as a preventive and cure-all. Numerous recipes for it exist: about 70 drugs were pulverized and reduced with honey to an electuary, a medicated paste prepared with honey or other sweet substance and taken by rubbing on the teeth or gums. Compounding and use of treacle from Rome into the Renaissance and beyond has been documented. Whether any or all recipes for treacle are bogus has not been established except in non-scientific literature, where the recipes are cited as examples of the absurdity of older formulas. However, no one appears to have studied whether there is any scientific basis at all for the very long life that treacle enjoyed. (pp. 26-7)

Riddle and Van Arsdall offer more examples as do the other essayists in this short but interesting volume. I found myself pondering why the observations of the ancients haven't been more thoroughly investigated.

Perhaps the time has come to make a relatively small investment in the systematic re-examination of therapies mentioned in Greek and Latin medical texts, through a dialogue between pharmacologists on the one hand, and classicists, medievalists and historians of medicine on the other. Such cooperation, which would link ancient texts with modern standards of testing, might result in a useful and inexpensive source of potentially therapeutic compounds. (p. 2)

Modern science is willing to trust anthropologists who find a single native, especially if he or she is a rainforest shaman, as nominators of drugs to test for medicinal values. This is well and good, but we are neglecting thousands of years of human experience elsewhere. In some cases, useful empirical experience was gained by highly intelligent, educated observers, such as Galen, who are ignored. (p. 13)
— *Jay Yasgur*

Jay Yasgur is a licensed pharmacist with an M.Sc. in Allied Health. He currently works as an independent retail pharmacist, and is a member of the HPCUS (Homeopathic Pharmacopoeia Convention of the United States).



Rational Phytotherapy: A Physician's Guide to Herbal Medicine *by Volker Schulz, Rudolf Hänsel, and Varro E. Tyler. 3rd ed. 1st English Edition. Translated by Terry C. Telger. New York: Springer-Verlag. 1998. Harcover. 306 pp. $49.00. ISBN # 3-540-62648-4. ABC Catalog # B326.*

I was pleased to receive my first 1998 book, signed by Varro Tyler, so pleased that I'm reviewing it right off the bat. I've always jokingly called Tip (Varro Tyler's nickname) a Germanophile since I first heard him talk at an Economic Botany meeting circa 1972 in Oxford, Mississippi. So what he says in the Preface to the English Edition does not surprise. Speaking of phytotherapy, herbal treatment, or botanical medicine, he suggests that "throughout most of the world, and especially in the United States and the United Kingdom, the practice is at best an imperfect art. In Germany, the use of plant drugs is a science." Phytomedicines can be sold "provided there is absolute proof of their safety and reasonable certainty of their efficacy."

Praising Germany's Commission E monographs, originally published in German in the Bundesanzeiger, the counterpart of the *U.S. Federal Register*, Tyler says, perhaps prematurely (I received my copy of January 21, 1998) that the summaries have been published in English translation by the American Botanical Council in Austin, Texas, although I am assured that this publication is imminent. Tyler goes on "Of the hundreds of medicinal plants used therapeutically in Europe today, a relatively small number account for a very large percentage of the total sales. Interestingly, those enjoying the greatest popularity are those which, by and large, have been most thoroughly investigated. These are the ones that are discussed in detail in this book."

Targeting skeptical physicians (I believe), the book purports to tell us how many therapeutic trials have been conducted, the dosage, whether controlled, double-blinded, and placebo controlled. Perhaps that's why Tip says "In the truest sense of the world, Rational Phytotherapy may be called the world's first qualitatively complete, science based herbal in the English language."

After an in-depth introduction, the book goes on to present rational therapies for

maladies, by chapter, of the CNS, cardiovascular system, respiratory system, digestive system, urinary tract, skin and connective tissue. There is a chapter devoted to gynecological indications and another to agents that increase resistance to diseases (adaptogens like ginseng and Siberian ginseng, *Eleutherococcus*), immune stimulants like coneflower (echinacea) and mistletoe, and botanical antioxidants like grapeseed, green tea and pinebark). Finally there's an interesting appendix detailing the 100 most commonly prescribed herbal medications in Germany. Of these the 52 most commonly prescribed single herb products can be reduced to 27 herbs, and plant parts.

"Based on its pharmacologic actions and clinical effects, ginkgo extract is closely related to the class of nootropic drugs, i.e. agents that act on the central nervous system and tend to improve cognitive performance." "Most of the 36 controlled clinical studies on the use of ginkgo special extracts in patients with cognitive deficits. . .were conducted in the 1980's. (F)ew of the studies . . .would meet minimum requirement from a methodologic standpoint, and none could provide statistical evidence rigorous enough to confirm efficacy. This accounts for the extremely negative attitude of clinical pharmacologists in particular toward the use of ginkgo products. Meanwhile, tens of thousands of practicing physicians have had positive experience with ginkgo therapy over the past 30 years."

This book is replete with charts showing overviews of clinical studies conducted on a number of select phytomedicines, the authors and year of each study, plus number of patients in each. This data is useful in communicating to health professionals that despite the current myth that no scientific data exists to document the safe and effective use of leading herbs and phytomedicines, that there is in fact a growing body of compelling evidence being conducted by German researchers. Other charts explain various therapeutic categories (e.g. psychotropic actions) and which herbs have been approved by Commission E for use in these areas (i.e., hops, kava, lavender, lemon balm, passion flower, St. John's wort, and valerian).

Curiously, the book begins with a chapter that deals with various phytotherapeutic dosage forms (e.g. teas, extracts, etc.) and then devotes considerable space to medicinal teas, an area that may tend to put off a conventional medical type. But I think the important point here is that in Europe herbal infusions and decoctions (i.e. teas) are still an important mode of administration for traditionally used herbs with documented safety and effectiveness, in addition to the more elegantly pharmaceutically prepared standardized herbal extracts, an area where the Germans have pioneered the herbal sciences.

Tip, what a nice way to start the New Year! Thanks for your help in steering America from the herbal ice ages through the centennial synthetic and antibiotic century towards the phytotherapeutic millennium that surely comes. — *James A. Duke*

Top 10 Sellers of ABC BookStore

September through November 1997
Previous standing shown in ( )

1. *German Commission E Monographs*: Blumenthal, Goldberg, Gruenwald, Hall, Riggins, and Rister, eds., Klein and Rister, trans. (1)
2. *Herbs of Choice*: Tyler (3)
3. *Herbal Medicine*: Weiss (8) tied with
3. *Herbs for Your Health*: Foster (new listing)
4. *Botanical Safety Handbook*: McGuffin, Hobbs, Upton and Goldberg (new listing)
5. *Encyclopedia of Herbal Medicine*: Bertram (6)
6. *Herbal Prescriptions for Better Health*: Brown (5)
7. *Herbal Medicine*: A Guide for Health-Care Professionals: Newall, Anderson and Phillipson (4)
8. *Encyclopedia of Herbs and Their Uses*: Bown (2)
9. *The Honest Herbal*: Tyler (10)
10. *Cancer and Natural Medicine*: Boik (back after a short absence)

See the Herbal Education Catalog in the center of this issue for these and over 300 other titles!

ABC ACTIVITIES
continued from page 8

covery in the Rainforest"; **Western States Chiropractic College**, Fort Lauderdale, FL, "Herbal Medicine: A Continuing Trend"; **Gulf Coast Society Health System Pharmacists**, Houston, TX, "Assessing the Safety and Efficiency of Herbs & Phytomedicines: The Issue of Phytoequivalence"; **Eastern Michigan University,** Ypsilanti, MI, "Health Remedies"; **Herb Business Winter Getaway,** San Antonio, TX, "Politics of Herbs: Role of Herbs in the U.S. Market"; **Stanford Review Special Report,** M. Blumenthal and D.Malone, "Review of Clinical Studies Documenting Claims for Popular Herbs in the U.S. Market," a Special Report for Stanford University; book chapter "Issues and Aspects on Herbal Safety" in *Poisoning & Toxicology Compendium.*

Belladonna,
Atropa belladonna, var. *lutea*.

ONE READER'S COMMITMENT TO WILD NATURE

This is a good afternoon to write to you. This morning I walked to the village for supplies as usual. First roadside stop was at a small grove of wild cherry trees with abundant fruit just ripened these past two weeks. It has taken a full two years and two months for these trees to return to their natural vigour and fertility after the climatic stress of hurricanes Louis and Marilyn, both within ten days. The fruit is delicious and I plan to collect as much as I can this weekend. It is a matter of competing with the local birds and as I, as human, can readily obtain sustenance, not so with the birds and so I leave them a large percentage of nature's own bounty. No humans around these parts are even aware that these trees are in fruit: 1. do not get to know the land; 2. dismiss the country as just bush-and-goat-piss; 3. given the opportunity to locate such trees, they (the trees) would be chopped down for use as a one-week-Christmas-tree (in the name of tradition).

Further down the road, a surprise stop: for the first time in all these years of walking I noticed midst the mass of roadside ditch vegetation (& garbage) a beckoning flower head [St. John's wort], *HerbalGram* No. 40 live and swaying in the Caribbean clime! Where did the plant seed come from?; wind-blown from where? The plant is growing in proximity with Coralita, Woodrose, Ipomoea, and Grasses. I collected one branch... and intend to quietly observe the plant for seed and perhaps even locate another plant so that I can effect a successful total plant transplant.

Yes! The first time I see and collect St. John's wort from Nature. I have been observing plants for a lifetime, initially in my birthland of Northern Ontario above the weeping willow treeline, then the southern parts of Ontario & Quebec, then the magnificent land and sea plants of the Caribbean as well as the plants of the Swiss Mountains and other areas of the world wherever my travels have taken me. In 1985 I acquired some land with a stretch of seashore that I have subsequently slowly restored from its eroded state and labouriously by hand and foot enriched the soil including the shoring-up of the cutting trough in the flash-flood-run-off ravine which descends from the upper side of the dormant volcano in my backyard to the cliff-edge out here some 50 meters above sea level.

Despite four years of severe drought, ravages of Hurricane Hugo 89, and double blasts of Louis & Marilyn in 95, today I can look at trees that offer shade plus other growth whose height serves also as shade and wind-breaks, all from seed and/or cuttings according to plant.

All labour on this one hectare of land is by hand and foot (of one person—me) using manure and compost. Soil conditions are poor, land structure is porous (thereby loss of rainwater is immediate as well as leaching of nutrients); area is exposed to sea-blast and sun heat reflected from the 160-degree water surface exposure. In short, it is tough physical work. Furthermore, most seed from other parts is either from areas that use fertilizers and/or are hybrid "delicates." These then must be acclimatized to my growing conditions. I lose some and gain some; on the average it takes me 1-2 years to achieve my Whitewall seed.

Tough patience demanding physical labour: one could readily become depressed, certainly well frustrated, by the demands of this total environment. I tell you this: no amount of St. John's wort by ingestion (anti-depressant quality) would achieve much success.

And so, *HerbalGram*, I am very pleased with your publication. For years I have used as reference Dertel-Bauer's *Heilpflanzen Taschenbuch*, 1908 (from the family ancestral library) and Lust, John B., *The Herb Book*, ©1974 (my own purchase in Toronto, Canada).

I shall post all Monday... a walk one-way of some four miles from this southwest point of the island of Statia. I anticipate many hours of instructive reading with your publication.

Hortus Studerland (M. Vera Studer)
Netherlands Antilles

COMMENTS ON CANALOLIDE

I enjoyed the "Herbs in Practice" feature by Larry Kincheloe (*HerbalGram* #41). Also, please tell Barbara Johnston that Calanolide A is not the only anti-HIV herb to be at an advanced stage of testing. SPV-30 (boxwood tree extract) has completed clinical trials in France and has a moderate anti-HIV effect.

Nicholas Mulchay
New York, NY
[Duly noted — Ed.]

MOVING?

Our mail permit does not allow us to forward *HerbalGram*. If you move or change your mailing address, please notify us immediately so you will not miss any copies. Send your change of address notice to Margaret Wright, Circulation Manager, American Botanical Council, P.O. Box 201660, Austin, TX 78720-1660. 512/331-8868, Fax: 512/331-1924.

LETTERS

"Mozzie" Blocker

I've just finished piece in the latest *HerbalGram* 41, page 18, on the citrosa plant hoax. I thought you'd find the following piece interesting. Out with the "mozzie buster," in with the "mozzie blocker!" No mention of the plant's range of effectiveness though the implication is that a plant or two will protect house and home. Perhaps we could consider surrounding the whole house with a hedge or better still carry it around with us a la garlic. It remains to be seen if this plant does what it's supposed to do. In the meantime it will be a great marketing tool when "mozzie blocker" appears on labels. Ho hum!

Kim Fletcher
Tasmania

[Ms. Fletcher's letter refers to an article titled, "Dealing with mozzies just takes a little common scent," mozzie being an antipodal nickname for a mosquito. The article appeared in the December 12, 1997, issue of the *Sydney Morning Herald*. According to the author, Amanda Phelan, *Leptospermum liversidgel*, known as the "mozzie blocker," prevents mosquitoes from homing in on their prey, even at night. Horticulturists say that the plant works by releasing citronella from its leaves, which acts as a block to the carbon dioxide signals released by warm-blooded animals, including humans.

After four years of research, by Bill Molyneux, a Melbourne-based horticulturist who went in search of the insect-baffling plant following a challenge by a Japanese colleague came up with a natural mosquito repellent. Molyneux tracked down the plant in the Australian state of Victoria's coastal swamps. He says it is the leaves which contain the active ingredient.

"The mozzie blocker is such an adaptable plant that as long as it's given plenty of water, it can be grown from Darwin to Hobart," he said.

The leaves of *Lepto-spermum liversidgel* emit a continual citronella barrier which confuses the mosquito. The barrier blocks the insect's attack mechanism, which was how the plant got its nickname. It reaches a height of almost 2 feet and can be grown indoors as well as outside (in the Australia/Tasmania area).]

CARNIVORE OR OMNIVORE?

I don't know who is responsible for page 14 in *HerbalGram* 41, but whoever asked "By the way, do carnivorous plants eat vegetables?" has an intelligence problem. A plant that eats vegetables wouldn't be "carnivore" but "omnivorous," if it ate meat also. The answer to her [Marilyn Savant's] question is "zero." I read her column [in *Parade* magazine] for the same reason that I used to listen to Mortimer Snerd.

John H. Hall, Jr.
Shenandoah, Texas

[Ed. note — The letter from Mr. Hall brought the following responses.

From our copy editor: "The question, 'By the way, do carnivorous plants eat vegetables?' was intended as a slightly humorous aside, calling for the response, 'Why, of course not!' "

From peer reviewer, Nancy Turner, Ph.D., "and herbivorous if it ate plants only!"

From peer reviewer Robin Marles, Ph.D., "Although plants that obtain nitrogen from captured insects or other invertebrates are called carnivorous, plants that feed on other plants are called 'parasitic' rather than herbivorous. Thus 'omnivorous' is not really appropriate for plants either. I don't know of any plants that are both carnivorous and parasitic, but given the incredible diversity of adaptations to be found in nature, I would not be willing to categorically rule out the existence of such a survival strategy."]

ACCESS

In this department of *HerbalGram*, we list resources such as publications, organizations, seminars, and networking for our readers. A listing in this section does not constitute any endorsement or approval by *HerbalGram*, ABC, HRF, or the HRF Professional Advisory Board.

Alternative Medicine Referral Service, a resource of licensed and credentialed holistic and alternative health practitioners serving the greater Washington, D.C. area. Free service for prospective patients. Call 301/220-HEAL.

American Herbal Products Association (AHPA), website now available. Find information on the upcoming International Symposium on St. John's Wort, links to AHPA member websites, and information on AHPA publications and other activities. Website <http://www.ahpa.org>.

The Business of Herbs, the international news and resource service for herb businesses. Published bimonthly by Northwind Publications. Contact 505/829-3448. Fax 505/829-3449. Email <HerbBiz@aol.com>.

Current Work in the History of Medicine, an international quarterly indexing journal on the history of medicine and allied sciences, is now available online through the library of the Wellcome Institute for the History of Medicine, London. Website address is <http://www.wellcome.ac.uk>. For information contact Cathy Doggrell or Kate Bishop at the Wellcome Institute. Email <c.doggrell@wellcome.ac.uk> or <k.bishop@wellcome.ac.uk>.

Green Planet 2000, a database for herbalists and alternative medical practitioners with more than 3,000 scientific references, FDA advisories, and regulatory advisories from overseas. Covers more than 1,000 substances, 725 essential ingredients, and 228 classifications. Chinese, Ayurvedic, and Native American herbs, and a special formulary with more than 2,000 formulas from around the world. Contact Knightvision, 6120 N. Belt St., Spokane, WA 99205. Ph: 509/325-5531.

The Herb Network, an organization for those wanting to learn more about herbs. Membership includes newsletter, co-operative herb buying program, and the chance to network with other interested people. $25 per year. Contact the Herb Network, P.O. Box 12937, Albuquerque, NM 87195. Email <HerbNetMom@aol.com>. Website <http://www.hbwm.com/herbs.htm>.

1997 IUCN Red List of Threatened Plants, the first-ever published list of vascular plants recorded as globally Rare, Vulnerable, Endangered, or Extinct. Published by the World Conservation Union (IUCN). Available through the New York Botanical Garden. Ph: 718/817-8721. Fax: 718/817-8842. Email <scipubs@nybg.org>.

Living With Herbs Institute, modern herbal education with an ancient spirit. Featuring lectures, classes, and the nine month training program "Fundamentals of Herbalism." Contact Living With Herbs Institute, 931 Monroe Drive, Suite 102-343, Atlanta, GA 30308. Ph: 404/361-0587. Email <LWHerbs@waonline.com>.

Lloydiana: A Publication for the Friends of the Lloyd Library and Museum. Members receive *Lloydiana*, friends discounts, and lecture series. Sign up as a Friend of the Lloyd Library. Annual membership is $20. Contact Friends, Lloyd Library and Museum, 917 Plum St., Cincinnati. OH 45202.

Medical Research Abstracts Online. Informative natural medicine database, with abstracts of clinical studies conducted on natural substances, and abstracts regarding nutritional issues. Original sources cited with each abstract. New abstracts added weekly. Free service. Website address <http://www.enzy.com>.

Natural Medicine Law, a newsletter for those wanting to know more about the legal issues concerning plant medicines, herbal remedies, professional licensing, and the regulation and legal issues of natural products, research, advertising, labeling, shipping and related areas. Keep up-to-date on legal developments with natural medicine in the U.S. Six issues per year. Contact Muscatatuck Publishers, P.O. Box 1444, Rockville, MD 20849. Ph: 301/762-3784. Email <NatMedLaw@AOL.COM>.

Nutrition Forum Newsletter, devoted exclusively to the careful, scientific evaluation of offbeat or unusual claims in popular nutrition. Includes megavitamin therapy, herbal treatments, DHEA, melatonin, antioxidants, chelated nutrients, and more. Published bimonthly. Contact Prometheus Books. Ph: 800/421-0351 or 716/691-0133. Fax: 716/691-0137.

Pharma Marketletter, weekly worldwide pharmaceutical information at your fingertips. Coverage includes worldwide markets, legislation and healthcare, environmental matters, biotechnology, research and development, and more. Published in London. Contact Marketletter (Publications) Ltd. 54-55 Wilton Road, London SW1V 1DE, UK. Ph: 44 171 828 7272. Fax: 44 171 828 0415.

Plant and Marine-Derived Pharmaceuticals: Discovery and Development. This report offers a compendium of data and analysis about the cost, timelines, techniques, and companies involved in developing plant and marine-sourced drugs. Significant discussion devoted to plant extracts and herbal medicines. The plant extracts and herbals sections of the report can be purchased separately for $1,200. Full report is $2,600. Contact Decision Resources, Bay Colony Corporate Center, 1100 Winter St., Waltham, MA 02154. Ph: 617/487-3737. Fax: 617/487-5750.

Planta Medica, the journal of the Society for Medicinal Plant Research. Each issue features over two dozen original articles in pharmacology and molecular biology, natural products chemistry, and phytochemical analysis. Represented in all major biochemical and pharmacological indexes. Published six times per year. Contact Thieme, 381 Park Avenue South, New York, NY 10016. Ph: 800/782-3488 or 212/683-5088. Fax: 212/779-9020.

The Tan Sheet—Nonprescription Pharmaceuticals and Nutritionals, weekly news coverage of the dietary supplements industry. Stay on top of the ever-changing rules, regulations and news affecting the dietary supplements industry. Timely articles covering the following issues each week: DSHEA activities, dietary supplement research, business and marketing news, financial news, FDA recalls and seizures, and more. Contact F-D-C Reports. Ph: 800/844-8974. Fax: 301/664-7238.

CALENDAR

March 16-18: American Herbal Products Association's 2nd International Symposium, Anaheim, CA. This comprehensive international symposium will cover the science and history of St. John's Wort, as well as the practical issues of cultivation and supply, impact of current and potential legislation and regulation, GMPs and manufacturing, and markets, in the US, Europe, and elsewhere. Contact AHPA, 4733 Bethesda Ave., Suite 345, Bethesda, MD 20814. Ph: 301/951-3204. Fax: 301/951-3205. Website <http://www.ahpa.org>.

March 16-18: Dietary Supplements, Functional & Medical Foods for the Chronic Diseases of Aging: 2nd Annual Scientific, Marketing, and Regulatory Symposium, Anaheim, CA. Topics include WHO monographs, cancer prevention phytochemicals, epidemiological research on nutrition and cardiac health/cancer, antioxidant properties of fruits and vegetables, and much more. Contact Global Business Research, 775 Sunrise Ave., Suite 260, Roseville, CA 95661. Ph: 916/773-3236 or 800/868-7188. Fax: 916/773-9321.

March 27-29: Taking Thyme for Herbs: Third Annual Round Top Herb Festival, in historic Round Top, TX. A full-weekend event focusing on growing and using herbs for both the novice and experienced. Featuring presentations by nationally known authorities in the field of herbs, optional workshops, herbal exhibits, self-guided tours, and a huge herbal plant sale with Texas natives and historic roses. Contact Mary Stanhope at 409/249-3973. Fax: 409/249-3961. Email <stanhope@cvtv.net>.

March 28-29: Southwest Conference on Botanical Medicine, Tempe, AZ. Topics include botanical therapies for migraine headaches, chronic prostatitis, chronic fatigue syndrome, cardiovascular disease, cancer, and many more. Professional presentations, herb identification walks, and panel discussions. Continuing Education Credits available. Contact SWCBM Registration, P.O. Box 3427, Ashland, OR 97520. Ph: 800/252-0688.

April 14-16: The 4th Las Vegas Health Show. This year's focus is a Heart-Smart Lifestyle. Bally's Resort. Speakers include Bob Arnot, Mark Blumenthal, Albert Leung, Michael Murray, Rob McCaleb, and more. Panels, workshops, and special events. Contact InterShow, 1258 N. Palm Ave., Sarasota, FL 34236. Ph: 800/226-0323 or 941-955-0323. Fax: 941/366-5755.

April 19-22: Biosynthesis of Isoquinoline, Indole and Related Alkaloids, Istanbul, Turkey, meeting of the Phytochemical Society of Europe. Topics include biosynthesis of isoquinoline alkaloids, pharmaceutical properties, and biotransformations. Contact Professor G. Sariyar, Istanbul University, Faculty of Pharmacy, 34452 Beyazit, Istanbul, Turkey. Ph: 90 212 526 0737. Fax: 90 212 519 0812.

April 20: Alzheimer's Care: Moving Toward an Integrative Approach, Seattle, WA. Co-sponsored by Bastyr University. Program includes presentations on behavioral, pharmaceutical, botanical, and nutritional therapeutic approaches to Alzheimer's care, as well as psychosocial and caregiver issues. Contact Bastyr at 425/823-1300. Fax: 425/823-6222. Website <http://www.bastyr.edu>.

May 10-13: Progress in Phytochemistry, Kerkrade, the Netherlands. Symposium aims to provide forum for young scientists to make oral or poster presentation of their research, to meet other young scientists working in all areas of phytochemistry, and to discuss their own research with a group of distinguished research leaders. Paper deadline March 1998. Phytochemical Society of Europe. Contact Professor Dr. A.W. Alfermann, Insitut für Entwicklungs- und Molekularbiolgie der Pflanzen, Heinrich-Heine-Universität Düsseldorf. Ph: 49 211 811 4603. Fax: 49 211 811 3085. Email <alferman@rz.uniduesseldorf.de>.

May 23-25: Pacific NW Herbal Symposium 98: Deep Healing with Herbs, Wilsonville, OR. Classes include the Practicing Herbalist, Plant Constituents, Botanical Treatment of Psychosis, Plants as Teachers, Anti-Inflammatory Herbs, Doctrine of Signatures, Phytoestrogens, Prostate Cancer and Phytotherapy, and many more. Contact Wise Woman Herbals, P.O. Box 279, Creswell, OR 97426. Ph. 541/895-5174.

May 26-29: 3rd Annual Course in Botanical Medicine: Botanical Medicine in Modern Clinical Practice, sponsored by the Rosenthal Center for Complementary and Alternative Medicine, Columbia University, College of Physicians & Surgeons. Designed for health care professionals, the course aims to provide sufficient information to enable clinicians to begin responsiblyincorporating herbal medicine into their practice, and knowledgeably advising patients who use or seek herbal remedies. Speakers include Michael Balick, Mark Blumenthal, Norman Farnsworth, Fredi Kronenberg, Rob McCaleb, and more. This 3-day course is a Continuing Medical Education Credited Course. Optional trip to New York Botanical Garden on 4th day. Contact Continuing Medical Education Office. Ph: 212/781-5990. Fax: 212/781-6047. Email <cme@columbia.edu>.

June 9-10: Medicines From Nature: Scientific, Legal, and Ethical Aspects, London, England. Speakers include Michael Balick, Steven King, Maurice Iwu, Norman Farnsworth, and many more. Contact Yvonne Perks, Academic Conference Dept., Royal Society of Medicine, 1 Wimpole St., London W1M 8AE, UK. Fax: 44 171 290 2977. Email <Events@roysocmed.ac.uk>.

June 11-14: BIO-Search 98: 2nd Southeast Asian Region Conference and Exhibition on Natural and Herbal Products, Manila. The international conference will focus on herbal medicine, organic food, and herbal/natural personal care products. The exhibition will feature an array of natural, herbal and organic products from the Philippines and the Southeast Asian region. Contact Department of Trade and Industry, Republic of the Philippines, International Trade Center Complex, Roxas Blvd., 1300 Pasay City, Metro Manila, Philippines. Ph: 632 831 2202. Fax: 632 832 3965. Export Hotline: 632 818 8434 or 632 818 9833.

June 26-28: 4th International Herb Symposium on Modern and Traditional Uses of Herbal Medicine, Wheaton College (35 minutes from Boston). A benefit for United Plant Savers, a nonprofit organization dedicated to replanting at risk medicinal plant species back to their native environment. Renowned herbal teachers from around the world share their herbal wisdom and experience, including James Duke, David Hoffmann, Rosemary Gladstar, Ed Smith, and Barbara Griggs, plus many more. Classes, herb walks, workshops, hands-on demonstrations, herb marketplace. Contact IHS, P.O. Box 420, E. Barre, VT 05649. Ph: 802/479-9825. Fax: 802/476-3722.

July 19-24: 39th Annual Meeting of the American Society of Pharmacognosy (ASP), Orlando, FL. Focus on current issues in natural products drug discovery, including chemical ecology and biodiversity, technology for natural products drug discovery, and adequate supply of natural products for clinical development. Featuring 11 plenary lectures, 50 contributed presentations, and two poster sessions. Information and registration available online <http://www.temple.edu/ASP>. Contact Dr. Samir Kouzi at 318/342-1693. Fax: 318/342-3286. Email <pykouzi@alpha.nlu.edu>.

July 20-22: Nutracon '98: Maximizing Scientific and Marketing Opportunites for Nutraceuticals, Dietary Supplements, Functional & Medical Foods, San Antonio, TX. Highlights include presentations on the latest science and research, in-depth regulatory update, how to get science to market, formulating claims, global opportunities, Wall Street view, and more. Contact Global Business Research, 775 Sunrise Ave., Suite 260, Roseville, CA 95661. Ph: 800/868-7188 or 916/773-3236. Fax: 916/773-9321. Email <globalbr@ix.netcom.com>. Website <http://www.globalbusinessresearch.com>.

Herbal Education Catalog

Featuring hard-to-find books, exclusive publications, **HERBALGRAM** back issues, botanical booklets, and more!

pull-out section!

Spring/Summer 1998

Educational and Research Projects of the American Botanical Council

HerbalGram

HERBALGRAM is a scientific, peer-reviewed, quarterly publication that includes feature-length articles, research reviews, conference reports, and book reviews. The focus is on herbs and medicinal plants, the history of their use, ethnobotany, modern clinical research that confirms historical usage, and legal and regulatory developments regarding the marketing, and sale of medicinal plant products. This highly acclaimed journal of the American Botanical Council (ABC) and the Herb Research Foundation (HRF) has received wide acknowledgment for its accuracy, credibility, scope of subject matter, and beauty. Each issue of HERBALGRAM is peer-reviewed by the Advisory Board of ABC. This board consists of some of the leading scientists in the area of medicinal plant research in the United States, as well as scientists in related professions. In this way, we maintain a high level of accuracy and credibility. ABC makes HERBALGRAM available to journalists, editors, and free-lance writers for scientific, medical, health, pharmacy, and garden publications. Estimated readership at the end of 1997 was over 50,000.

Case Mill Homestead Capital Campaign

ABC has purchased the Case Mill Homestead in Austin, Texas, as the future home of ABC and an Herbal Education and Research Center. This facility will be the first of its kind in the U.S. and will expand ABC's mission to increase public awareness and professional knowledge of the historical role and current potential of herbs and plants in medicine.

ABC has launched a campaign with two stages: the Case Mill Homestead Capital Campaign and the Herbal Education and Research Center Capital Campaign. The Case Mill Homestead Campaign will provide funding for renovation of the 140-year-old historic building for use as ABC's administrative offices; an annex building to be the first home of the Herbal Education and Research Center; improvements to the extensive herb gardens and greenhouse; as well as other improvements to the grounds. In the future, ABC will launch a Campaign to provide funding for the construction of the Herbal Education and Research Center. This will include a botanical laboratory, an auditorium, lecture/classrooms, a multimedia resource center, and staff offices as well as fund the conversion of the annex into offices and further improvements of the herb gardens and grounds.

These campaigns will provide opportunities for groups and individuals to work together through gifts, grants, partnerships with other organizations, volunteerism, and in-kind contributions. ABC encourages organizations to take part in its innovative recognition and donor dedication program.

Assistance To Media

A vital aspect of ABC is its increasingly important role as a source of herbal information for writers, publications, and the media. Venues to which ABC has provided assistance include Cable News Network, *Longevity, Reader's Digest, American Health, The New York Times, The Washington Post, The Chicago Sun-Times, Cosmopolitan, Good Housekeeping Consumer Reports, Family Circle, and Newsweek*. ABC has also been active in providing articles for the health retail and trade press, including *Natural Foods Merchandiser,*

AMERICAN BOTANICAL COUNCIL

Mission and Goals

The American Botanical Council (ABC) was incorporated in November, 1988, as a nonprofit herbal research and educational organization.

ABC's goals are to educate the public about beneficial herbs and plants and to promote the safe and effective use of medicinal plants. The following objectives help us attain our goals:

- Disseminate accurate, responsible, scientific information on herbs and herbal research to the public, governmental agencies and the professional and scientific communities.
- Advance consumer health interests in the use of medicinal herb products.
- Increase public awareness and professional knowledge of the historic role and current potential of plants in healing and medicine.
- Contribute information to professional and scientific literature that helps establish accurate, credible toxicological and pharmacological data on numerous types of plants and plant materials.
- Promote understanding of the importance of preserving native indigenous cultures and plant populations throughout the world.
- Provide the public with original research and reprints of plant-related articles, audio/video tapes, books, and other educational materials.
- Assist the Herb Research Foundation in achieving its non-profit research and educational goals.

ABC ON-LINE

Communicate with the American Botanical Council via the World Wide Web. Ask questions about research projects, send letters to the editor of HERBALGRAM, get information about ordering any of the products ABC offers in order to fund education and research projects.

HERBALGRAM subscription, book inquiries, and ordering information:
custserv@herbalgram.org

Pharmacy from the Rainforest or Pharmacy Continuing education:
gingerw@herbalgram.org

Case Mill Campaign or support for other projects:
waynes@herbalgram.org

Letters or editorial inquiries to HERBALGRAM
bj@herbalgram.org

General information e-mail:
abc@herbalgram.org

See our whole catalog at World Wide Web domain address:
www.herbalgram.org

Delicious!, *Health Food Business*, *Let's Live*, *Whole Foods*, and *Vegetarian Times*. In addition, ABC's Executive Director has appeared on more than 200 radio and television talk shows in the past eight years.

Ginseng Evaluation Program

In 1993, prompted by concerns over possible mislabeling and adulteration, ABC initiated a study of commercial ginseng products sold throughout North America–the Ginseng Evaluation Program (GEP). This is the first time a study of this magnitude has been conducted on ginseng or any popular herbal product. Through GEP, ABC seeks to set a standard for future studies, increase consumer confidence in the natural products industry, and increase awareness and responsibility on the part of the manufacturers of natural products.

Working with two leading university laboratories, ABC developed cutting edge methodologies for analyzing ginseng and established strict administrative and testing protocols to ensure confidentiality and accuracy. When published in 1998, GEP will have analyzed hundreds of commercial ginseng products for content and verification of manufacturers' claims of ginseng levels. The results will be published in HERBALGRAM and disseminated through an extensive program of public education and scientific papers.

German Commission E Monographs

In the spring of 1998, ABC will publish the German Commission E Monographs. The Commission E of the German Federal Health Agency is the group responsible for researching and regulating the safety and efficacy of herbs and phytomedicines (plant medicines) in Germany. ABC and many of the leading medicinal plant experts in the U.S. are strongly convinced that the availability of these monographs in English will have a strong impact on increasing the acceptance of legitimate medical uses of phytomedicines among physicians, pharmacists, regulators, journalists, the pharmaceutical and herbal industries, and the general public.

Initiated by ABC in the summer of 1993, the work features the translated text of the monographs as well as reference tables of pharmacological actions, clinical indications and contraindications, and taxonomic cross-references.

Pharmacy Continuing Education

In a historic development in 1996, ABC began offering home-study courses, approved for pharmacy education credit for pharmacists from anywhere in the United States. The program, "Herbs and Phytomedicines," includes three modules that provide an overview of herbal medicines, including the history of their use, how they are assessed, and ways in which various countries view their importance. The module called "Popular Herbs in the U.S. Market: Therapeutic Monographs" is a collection of 26 monographs based on a combination of recent resources, including the American Herbal Product Association's Botanical Safety Index rating for each herb. ABC has also been hosting ethnobotanical trips offering educational credit for courses set in the rainforests of Costa Rica, Belize, Africa, and Peru, for a full year of continuing education credit. ABC also provides direct training and resource materials to pharmacists associated with mass market corporations.

The cover is a seedling of* Gentiana lutea, *rendered by Edmund Martinez.

Third Party Literature

ABC produces and distributes third party literature as provided for in the Dietary Supplement Health and Education Act of 1994 (DSHEA). Section 5 of the Act permits, for the first time, the use of information from books, publications, and scientific literature in connection with the sale of dietary supplements if the information is not false or misleading, does not promote a particular manufacturer or brand, presents a balanced view of the scientific information, is physically separated from supplements if displayed in a retail store, and does not have any other information appended to it. ABC is a leader in providing this type of literature. Offerings include the Botanical Booklet Series, eight-page booklets profiling twelve individual herbs; the Research Review Series, four-page color reprints of "Research Reviews" from HERBALGRAM; literature reviews on echinacea, tea, and kava; and Common Herbs, a peer-reviewed color pamphlet describing 29 medicinal plants and their uses.

CATALOG CONTENTS

American Botanical Council's Goals and Projects 2
HerbalGram Back Packs 22
HerbalGram Cumulative Index 22
HerbalGram Subscription 22
HerbalGram Back Issues 24
Book Catalog 4
- Africa 17
- Amazonia/Rainforests 14
- Asia 15
- Back List 19
- Central America 17
- Cancer Research 12
- Clinical/Therapeutic 18
- Essential Oils 11
- Ethnobotany 9
- Field Guides 8
- Food and Nutrition 9
- General Botany 8
- General Herbals 4
- Ginseng 13
- Hemp 12
- History 8
- India 14
- Individual Topics 5
- Middle East 17
- Mushrooms 13
- Native American 16-17
- Pacific 14
- Pharmacognosy 12
- Pharmacopeias 12
- Psychoactive 11
- Research 7
- Specific Herbs 6
- Technical Works 10
- US Regional 16
- Women's Topics 5

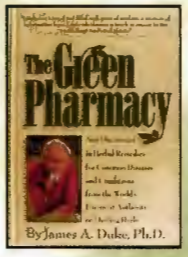
Multi Media 20
Special Reports 26
Special Publications 26
Pharmacy Continuing Education 28
ESCOP Monographs 28
Note Cards 27
Third Party Literature 27
Botanical Booklet Series 27
Commission E 21
Pharmacy From the Rainforest 29
Gift Ideas 30
Order Form 31

GENERAL HERBALS

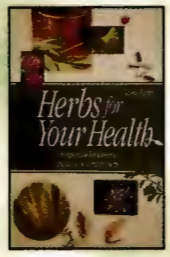
A BIBLICAL HERBAL

by Blair Montague-Drake. 1997. Throughout history many of the herbs and spices with biblical connections have played an important role in the culinary, medicinal and social development of mankind. In this beautifully illustrated volume, the author tells the story of 84 of his favorite biblical herbs. Hardcover, 193 pp. $26. #B305

THE GREEN PHARMACY

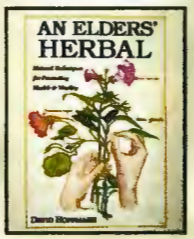


by James A. Duke. 1997. A-Z entries that include more than 120 health conditions and scores of natural remedies that can replace or enhance costly pharmaceuticals. Up-to-date information and traditionol folk remedies in an authoritative, entertaining format. Hardcover, 507 pp. $29.95. #B281



HERBS FOR YOUR HEALTH

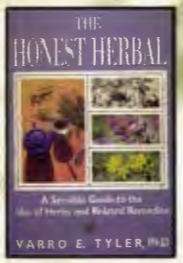
by Steven Foster. 1996. Designed as a quick reference guide to the 50 most commonly used herbs available in the U.S. as dietary supplements. Profiles include common and botanical name, brief history of traditional uses, summary of credible scientific reports, brief descriptions of conditions and symptoms the herb treats, forms in which it is available in the U.S., actions, dosage, cautions or contraindications, and photograph. Softcover, 121 pp. $9.95. #B232



AN ELDERS' HERBAL

by David Hoffman. 1993. Addresses the unique concerns of people approaching fifty years of age and older, offering specific herbal remedies for conditions including hypertension, insomnia, bronchitis, varicose veins, and arthritis. Lists more than 150 herbs by both common and Latin names, specifies which part of the plant to use, actions and indications, preparation methods, and recommended dosages. Softcover, 266 pp. $17.95. #B189

THE HONEST HERBAL



by Varro E. Tyler. 1993. Third edition. Chapters on the complex laws and regulations pertaining to the sale of herbs in the U.S. Covers over 100 commonly used herbs, provides botanical information, folk uses, discussions of safety, and therapeutic effectiveness. Softcover, 375 pp. $17.95 #B005

ENCYCLOPEDIA OF HERBAL MEDICINE

by Thomas Bartram. 1995. Includes over 900 entries of general disease conditions with appropriate herbal treatment, 550 monographs of medicinal plants, therapeutic action and properties of herbs, preparations (tinctures, liquid extracts, poultices, essential oils, etc.), and British legal requirements. Hardcover, 474 pp. $43. #B213

A MODERN HERBAL

by Margaret Grieve. 1931. A classic. Medicinal, culinary, cosmetic and economic properties, cultivation and folklore of herbs, grasses, fungi, shrubs, and trees with their scientific use as known for the times. Softcover, 2 vol. set, 902 pp. $19.90. #B139

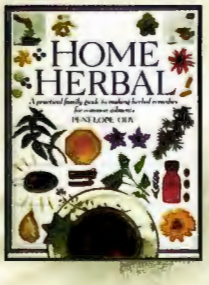
HERBAL RENAISSANCE

by Steven Foster. 1994. Covers propagation, harvesting, drying, growing, phytochemistry, folklore, and usage. 124 plant species covered. 45 line drawings, color illustrations, B/W photos, color photos. A classified resources list for sources of seeds or plants. Softcover, 234 pp. $17.95 #B052

HERBAL EMISSARIES

by S. Faster and C. Yue. 1992. Supplies specific techniques for cultivating 44 Chinese herbs and flowers in Western gardens, providing scientific verification of their effectiveness, as well as history, taste and character, uses, dosage, warning, description, distribution, harvesting, processing, additional species, and other uses. Softcover, 356 pp. $16.95. #B190

HOME HERBAL

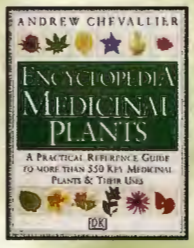


by Penelope Ody. 1995. A practical family guide to making herbal remedies for common ailments. Step by step instructions, full color photographic index of 60 medicinal herbs, and information on growing indoors and outdoors. Hardcover, 144 pp. $19.95. #B175

ENCYCLOPEDIA OF HERBS AND THEIR USES

by Deni Bown. 1995. Published by the Herb Society of America. More than 1,500 photographs, taken in herb collections all over the world, combined with descriptions of over 1,000 species, varieties, hybrids, and cultivars. Listed alphabetically by genus, contains information on growth and harvest, culinary, aromatic, medicinal, and economic uses. Hardcover, 424 pp. $39.95. #B156

THE ENCYCLOPEDIA OF MEDICINAL PLANTS

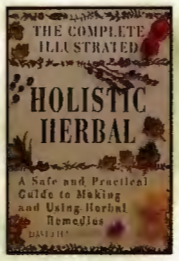


by Andrew Chevallier. 1996. Profiles more than 550 key medicinal plants, systematically detailing their history, cultivation, key constituents and actions, research, and traditional and current uses. Shows how to make different types of herbal preparations and recommends safe, effective remedies for a wide range of common health problems. Full-color illustrations throughout. Hardcover, 336 pp. $39.95. #B250

THE COMPLETE MEDICINAL HERBAL

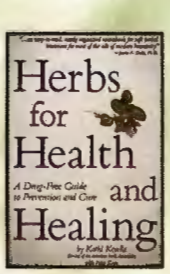
by Penelope Ody, foreword by Mark Blumenthal. 1993. Practical guide to the healing properties of herbs. Historical uses, therapeutic uses, parts used, chemical constituents, 250 remedies, safety precautions. 120 color photos. Hardcover, 192 pp. $29.95 #B039

THE COMPLETE ILLUSTRATED HOLISTIC HERBAL



by David Hoffmann. 1996. Covers treatment of a wide range of complaints and diseases, gathering herbs and preparing remedies, alphabetical herbal featuring more than 200 herbs, and over 300 full-color pictures. Softcover, 256 pp. $24.95. #B236

HERBS FOR HEALTH AND HEALING



by Kathi Keville. 1996. Herbal formulas for many health problems arranged by bodily systems, instructions on how to make preparations, discussion of specific herbs for women's, men's, and children's health issues, herbal first aid, cautions and considerations, aromatherapy, skin and hair care, and cooking with herbs. Hardcover, 374 pp. $27.95. #B235

POTTER'S NEW CYCLOPAEDIA OF BOTANICAL DRUGS AND PREPARATIONS

by R. C. Wren. 1988. A listing of 571 botanical drugs including common name, botanical name, family, synonyms, habitat, description, part used, constituents, medicinal use, and regulatory status. Softcover, 362 pp. $29.95. #B011

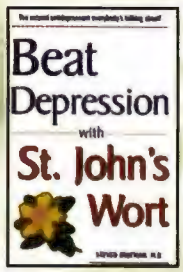
INDIVIDUAL TOPICS

MEDICINAL PLANTS: CAN UTILIZATION AND CONSERVATION COEXIST?

by J. Sheldon, M. Balick, and S. Laird. 1997. Examines the cases of several plant species valued in traditional and contemporary medicine, and the ramifications of their over-harvesting. Explores the impact of discovery and utilization of these and other medicinal plants by the herbal and pharmaceutical industries, and makes recommendations for using these resources wisely. Softcover, 104 pp. $14.50. #B289

STRESS AND NATURAL HEALING

by Christopher Hobbs. 1997. Addresses the workings of the nervous system, the ways that stress affects it, and the potential health problems that can result. Natural ways to promote relaxation by using proven dietary and herbal programs, as well as visualization, conscious breathing, meditation, and exercise, are explored. Softcover, 240 pp. $16.95. #B287



BEAT DEPRESSION WITH ST. JOHN'S WORT

by Steven Bratman. 1997. Easily readable yet solidly researched, and based on the experiences of his patients as well as the results of clinical studies worldwide, Dr. Bratman explains what St. John's Wort is and how it works, its record of success without dangerous side effects, how to determine if it may be effective for you, and where to buy it and what to look for on the label. Softcover, 212 pp. $12. #B299

PLANTS OF LOVE

by Christian Rätsch. 1990. Detailed, beautifully illustrated listing of more than 100 plants gives full information on their specific aphrodisiacal properties, plus dozens of age-old recipes for beverages, ointments, pills, incenses, and snuffs. Softcover, 205 pp. $19.95. #B321

DRUGS OF NATURAL ORIGIN

by Anthony Artuso. 1997. Gives a detailed model of the value of wild biological resources for pharmaceutical research and development. Presents several decision models and analytical techniques that can be used to assess the economics of biochemical prospecting efforts whether you're part of a private corporation, nonprofit research institute, developing country government, or international organization. Softcover, 201 pp. $24.95.#B304

PASSION FLOWERS

by John Vanderplank. 1996. 2nd edition. The most comprehensive and beautifully illustrated guide to this spectacular genus ever published. Documents over 150 species, including important changes to the taxonomy, sections on cultivation and hybridization, an identification key, more than 100 leaf drawings, and 120 color photographs. Hardcover, 224 pp. $40. #B249

THE BOOK OF TEA

by A. Stella, N. Beautheac, G. Brochard, and C. Donzel, translated by Deke Dusinberre. 1992. Traces the history, myth, and rituals of tea growing and drinking from the tea gardens of Asia to the tea rooms of London. Beautiful photography and design. Includes guide to teas and blends that provides everything one needs to know to fully appreciate the richness and infinite variety of tea. Hardcover, 256 pp. $55.#B185

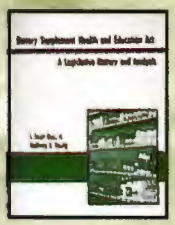
BOTANICAL SAFETY HANDBOOK: GUIDELINES FOR SAFE USE AND LABELING FOR HERBS IN COMMERCE

Ed. by M. McGuffin, C. Hobbs, R. Upton, and A. Goldberg. 1997. Provides safety data on more than 550 herbs as guidelines for product labels, including contraindications, side effects, and special warnings. Each herb is classed as can be safely consumed when used appropriately, herbs with the following restrictions, for external use only, or not to be used during pregnancy. Softcover, 256 pp. $39.95. #B275

THE SCIENCE AND ROMANCE OF SELECTED HERBS USED IN MEDICINE AND RELIGIOUS CEREMONY

by Anthony Andoh. 1987. Scientific classification of many of the plants used throughout the world for their medicinal value or their religious and spiritual significance, including the herbs used in Santeria religious ceremony. Provides centers of diversity, common and vernacular names, somatic chromosome numbers and genome constitution, description, lore, legend and romance. Softcover, 324 pp. $19.95. #B208

DIETARY SUPPLEMENT HEALTH AND EDUCATION ACT: A LEGISLATIVE HISTORY AND ANALYSIS



by I. Scott Bass and Anthony Young. 1996. In-depth discussion of the FDA's enforcement and regulatory activities from 1938 to 1994 regarding vitamins, minerals, and dietary supplements; consumer demand for legislative change; and the subsequent passage of DSHEA. Includes complete text of DSHEA and bills preceding it. Softcover, 319 pp. $99. #B220

TONICS

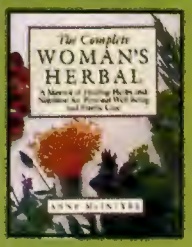
by Robert Barnett. 1997. More than 60 essays and 125 recipes about specific foods and herbs that benefit health. Integrates the science of modern nutrition with traditional herbal medicine in a practical, easy-to-use cookbook. Softcover, 336 pp. $15. #B271

WOMEN'S TOPICS

LIVING LIQUEURS

by James A. Duke. 1987. Useful information on the culture, use, formulas, and folklore of plants in various herbal drinks. Line drawing illustrations. Softcover, 110 pp. $15. #B010

THE COMPLETE WOMAN'S HERBAL



by Anne McIntyre. 1994. Safe, simple, and effective herbal remedies; practical advice on stress management, first aid, and health. A dictionary of herbs and ailments; full-color illustrations; directory of herb suppliers; and a glossary of terms. Softcover, 287 pp. $25. #B144

HERBAL HEALING FOR WOMEN

by Rosemary Gladstar.1993. Common disorders and the herbs that are effective for treating them, how to select and store herbs, preparation of hundreds of herbal remedies (including teas, tinctures, salves, and ointments), and an alphabetical listing of herbs, including a brief description of the herb, the general medicinal usage, and when necessary, warnings about potential side effects. Soft-cover, 303 pp. $12. #B257

THE ROOTS OF HEALING

by Deb Soule. 1995. Designed especially for women of all ages, and written from the author's personal perspective as an herbalist and feminist, this book provides herbal remedies passed down over the years in the form of tinctures, tonics, and teas for a large variety of women's health concerns. Simple and practical herbal guidelines along with an extensive resources section make this on invaluable asset for anyone interested in the historical and current use of herbs for women's health issues. Softcover. 306 pp. $12.95. #B246

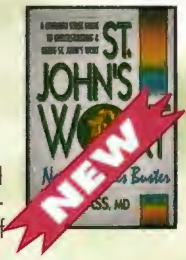
SPECIFIC HERBS

VALERIAN
Ed. by Peter Houghton. 1997. A comprehensive and contemporary overview that includes ethnobotany, chemistry, pharmacology, therapeutics, cultivation, analysis, and commercial aspects of the genus *Valeriana*. Hardcover, 142 pp. $80. #B307

PERILLA
Ed. by H. Yu, K. Kosuna, and M. Haga. 1997. Includes articles describing the cultivation, traditional and modern applications, and the chemical, pharmacological, medical and clinical studies of this plant and its active compounds. The cell culture of *Perilla*, the genetic control of the plant, and the isolation and structural elucidation of a number of its active compounds such as terpenoids, phenolics, glycosides, flavonoids and anthocyanins are discussed. Hardcover, 191 pp. $80. #B308

ST. JOHN'S WORT: THE MOOD ENHANCING HERB

by Christopher Hobbs. 1997. Presents the exciting research and clinical experience that substantiates the use of St. John's wort for easing depression and anxiety and deepening sleep. Also discusses natural programs to help reduce stress, examines other time-honored mood-enhancing herbs, and provides resources for ordering herbs and herbal products. Softcover, 176 pp. $12.95. #B310

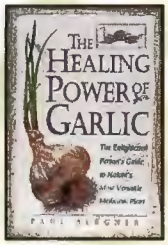


ST. JOHN'S WORT: NATURE'S BLUES BUSTER
by Hylo Cass. Explains what depression is, possible benefits that St. John's wort can offer, information on its use, including its combination with other herbs. Reviews the studies done on the plant as well as facts on synthetic antidepressants. Discusses St. John's wort's nutritional cofactors and makes lifestyle recommendations concerning diet, exercise, and stress reduction. Softcover, 192 pp. $9.95. #B311

GARLIC, THE SCIENCE AND THERAPEUTIC APPLICATION OF *ALLIUM SATIVUM L.* AND RELATED SPECIES

. Ed. by Heinrich Koch and Larry Lawson. 1996. The most complete scientific work on garlic and garlic supplements. History, chemistry, composition, analytical methods, and scientific review of cardiovascular, anticancer, antimicrobial, and other effects; comprehensive tables; 2580 references. Softcover, 329 pp. $34.95. #B159

THE HEALING POWER OF GARLIC



by Paul Bergner. 1996. Explains the historical and contemporary uses of garlic, how modern science understands garlic to work as a medicine, and how to make and use more than 30 different medicinal garlic preparations. Softcover, 289 pp. $15.95. #B212

THE GARLIC BOOK: NATURE'S POWERFUL HEALER

by Stephen Fulder. 1996. How heart disease occurs, how garlic is beneficial in preventing and treating it by lowering cholesterol and blood pressure and thinning the blood, and how to include it in your diet. Includes historical use, garlic's other actions, and products and preparations. Softcover, 139 pp. $8.95 #B269

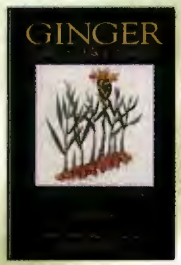
PAU D'ARCO: IMMUNE POWER FROM THE RAIN FOREST

by Kenneth Jones. 1995. Describes the different varieties and its application in South American folk medicine. Directions for preparation and dosage as teas and extracts. Reviews and summarizes scientific literature. Softcover, 160 pp. $8.95. #B120

HYPERICUM AND DEPRESSION

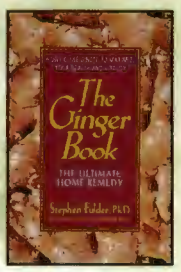
by H. Bloomfield, M. Nordfors and P. McWilliams. 1996. Reports on recent medical research that could change the way depression is treated in America. Explains what depression is, how to know if one is depressed, the medical effects of hypericum an depression (with summaries of selected medical studies), and where to find research-grade hypericum. Softcover, 203 pp. $7.95 #B263

GINGER: COMMON SPICE AND WONDER DRUG



by Paul Schulick. 1996. Comprehensive review supported by hundreds of scientific references that links the claims of the ancient herbals to the extensive findings of international scientific research. Softcover, 165 pp. $9.95. #B233

THE GINGER BOOK: THE ULTIMATE HOME REMEDY



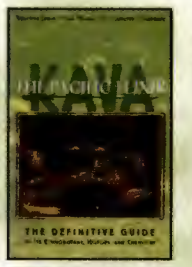
by Stephen Fulder. 1996. Covers the latest scientific findings as well as the rich folklore and history of ginger. Includes effects on bodily systems, chemistry, ginger products and preparations, and recipes. Softcover, 147 pp. $8.95 #B267

NEEM, A TREE FOR SOLVING GLOBAL PROBLEMS

BOSTID. 1992. Medicinal uses, chemical constituents, growing and propagation, habitats, insecticidal use, cultural use, safety tests, reforestation, and industrial products. Softcover, 141 pp. $19. #B098

CAT'S CLAW: HEALING VINE OF PERU
by Kenneth Jones. 1995. History of a powerful medicinal vine and the researchers who have pioneered its use. Utilized for centuries by Asháninka Indians in Peru to control inflammations, gastric ulcers, arthritis, rheumatism, cancer, and as a contraceptive, cat's claw is now the subject of clinical research in Europe aimed at new treatments for AIDS, cancer, herpes, rheumatoid arthritis, and diseases in animals. Softcover. 152 pp. $9.95. #B201

KAVA: MEDICINE HUNTING IN PARADISE
by Chris Kilham. 1996. A journey through the mystical legends, outlandish history, and exciting science surrounding kava. With a thorough analysis of kava research and information on where to find the best kava, a must-read for those interested in adventure, plant medicines, or the cultures of Oceania. Softcover, 166 pp. $12.95. #B202

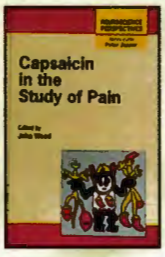


KAVA-THE PACIFIC ELIXIR
by Vincent Lebot, Mark Merlin and Lamont Lindstrom. 1992. Research on botany, chemistry, ethnobotany, pharmacology, social usage, distribution, and economic potential. B/W photos, illus. Softcover, 255 pp. $19.95. #B032

CRC HANDBOOK OF MEDICINAL MINTS (AROMATHEMATICS) PHYTOCHEMICALS AND BIOLOGICAL ACTIVITIES
by Stephen Beckstrom-Sternberg and James A. Duke. 1996. More than 500 references on 10,839 chemicals from 251 assays of 205 unique taxa, combined with 3,324 biological activities, and 256 recommended daily allowances and lethal doses. A valuable resource for assessing the potential medicinal value Hardcover, 298 pp. $129.95. #B242

SPECIFIC HERBS

CAPSAICIN IN THE STUDY OF PAIN



Ed. by John Wood. 1993. Recent progress in understanding the mechanism and site of action of capsaicin, its significance in the study of pain and development of novel analgesic and anti-inflammatory drugs. Hardcover. 286 pp. $78. #B104

CHEMISTRY AND APPLICATION OF GREEN TEA

Ed. by T. Yamamoto, L. Juneja, H. Hatta, and M. Kim. 1997. The latest information on the chemistry, metabolism, and other aspects of tea polyphenols and their applications. Explores the many useful properties of green tea that have been scientifically investigated, such as inhibition of tooth decay, effects on chemoprevention of colon cancer and intestinal microflora, and antioxidant and deodorant properties. Hardcover, 250 pp. $125.00 #B276

THE GREEN TEA BOOK

by Lester Mitscher and Victoria Dolby. 1998. Explores the history, research, and benefits green tea offers – its use as an antioxidant in the prevention of cancer, heart disease, and stroke; its ability to promote longevity; its use as a digestive aid; its many benefits to women's health; and its role in fighting cavities and gingivitis. Softcover, 186 pp. $9.95. #B323

GINKGO: A PRACTICAL GUIDE

by Georges Halpern. 1998. History, cultivation, its many beneficial effects on the body, the latest research, and case studies of people who have been helped by ginkgo. Forms that are available, where you can find it, how you can choose among the available products, how much you should take, and how you should take it. Softcover, 172 pp. $9.95. #B317

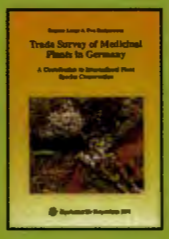
CAFFEINE

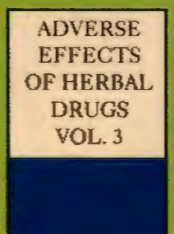
Ed. by Gene Spiller. 1998. This comprehensive text gathers in a single volume in-depth information on composition, processing, consumption, health effects, and epidemiological correlations for the methylxanthine beverages and foods. Hardcover, 374 pp. $99.95. #B316

RESEARCH

TRADE SURVEY OF MEDICINAL PLANTS OF GERMANY

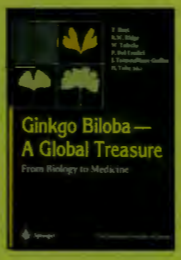
by Dagmar Lange and Uwe Schippmann. 1997. This study, conducted on behalf of the *Bundesamt fur Naturschutz* describes the national and international structures of the trade in plant drugs. An overview of the plant species identified, their trade commodities and uses is given. The analysis of imports and exports from 1991 to 1994 emphasizes the important role of Germany in the international trade regime. Softcover, 128 pp. $12. #B252





ADVERSE EFFECTS OF HERBAL DRUGS VOL. 3

by De Smet, Keller, Hansel, and Chandler. 1997. Eighteen comprehensive monographs about specific medicinal herbs and plant constituents important for their prominent place in phytotherapy (e.g., *Valeriana* spp.), clinical expectations about therapeutic potential (e.g., *Tripterygium* spp.), and recent concern about a serious adverse reaction (e.g., *Teucrium chamaedrys*). Softcover, 250 pp. $74.95. #B231



GINKGO BILOBA – A GLOBAL TREASURE

Ed. by T. Hori *et al.* 1997. Latest findings of research on a broad range of topics that include cell biology, biochemistry, morphology, paleobotany, environmental engineering and cultural history, as well as possible applications in chemistry and medicine. Extensive bibliography. Hardcover, 427 pp. $99. #B297

AUSTRALIAN TEA TREE OIL GUIDE

by Cynthia Olsen. 1997. 3rd edition. Contains up-to-date clinical research into tea tree oil's effectiveness against conditions including acne, herpes, candida, bleeding gums and more. Includes history, harvesting and production, use with animals, products and case studies. Softcover, 110 pp. $7.95. #B283

ALOE VERA: A SCIENTIFIC APPROACH

by Robert Davis. 1997. The first scholarly explanation of how aloe works. Demonstrotes the relationship between the polysaccharide ond surrounding octive components. Meticulously researched and illustrated by clear, illuminating charts. Hardcover, 320 pp. $21.95. #B284

DIRECTORY FOR MEDICINAL PLANTS CONSERVATION

by M. Kasparek, A. Groger, and U. Schippmann. 1996. Aims at providing information for policy makers, scientists, and technical experts in the management of medicinal plant resources. Provides information on more than 200 networks, organizations, and projects worldwide dealing with research, management, policy making, and conservation. Key journals and databoses in the field are highlighted. Softcover, 156 pp. $12. #B253

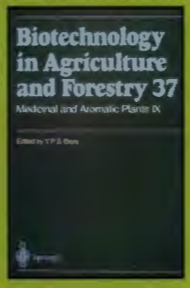
NATURAL PRODUCTS

2nd Edition by Raphael Ikan. 1991. Contains: Biomarkers—organic compounds, Yeast RNA nucleic ocid studies, Reversed-phase HPLC of amino acids, HPTLC of corbohydrates, sweetness evaluation, GC/MS sterols, petroleum studies, flash chromatography of essential oils, and optical purity. Hardcover, 360 pp. $65. #B116

FOLK MEDICINE

Ed. by Richard Steiner. 1986. Examines medicinal practices of Aztecs and Zunis. Folk medicine from India, Fuji, Papua New Guinea, Australia, and Africa. Active ingredients of garlic and ginseng. From American Chemical Society Symposium. Softcover, 223 pp. $23.95. #B129

BIOTECHNOLOGY IN AGRICULTURE AND FORESTRY 37: MEDICINAL AND AROMATIC PLANTS IX



Ed. by Y. P. S. Bajoj. 1996. Survey of the recent literature on distribution, importance, conventional propagation, micropropagation, tissue culture studies and the *in vitro* production of important medicinal and pharmaceutical compounds in various species. Hardcover, 414 pp. $339. #B230

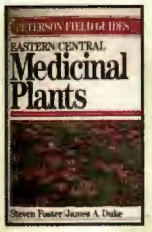
MEDICINAL PLANT CONSERVATION BIBLIOGRAPHY, VOL 1

by Uwe Schippmann. 1997. Systematically reviews about 60 journals for papers with relation to medicinal plant conservation issues. Includes approximately 774 references mainly from 1990-1996 and 71 reviews, indexed by general, geographic and taxonomic keywords. Ringbound, 61 pp. $12. #B254

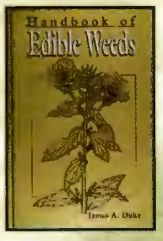
QUARTERLY REVIEW OF NATURAL MEDICINE

Ed. by Donald Brown, N.D. 1994. A comprehensive guide to current information in natural healthcare. Includes research summaries of clinicol studies in the fields of nutrition, herbal medicine and natural healthcare, from over 3,000 professional journals. Binder, *1994:* $85. #B122; *1995:* $85. #B176; *1996:* $85. #B176B; *1997:* $85. #B176C

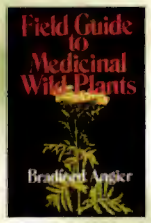
FIELD GUIDES



FIELD GUIDE TO EASTERN/ CENTRAL MEDICINAL PLANTS by Steven Foster and James Duke. 1990. Pocket size guide identifying 500 medicinal plants, their uses, remedies, line drawings, over 200 color photos. From the Peterson Field Guide Series®. Hardcover, 366 pp. $26 #B096

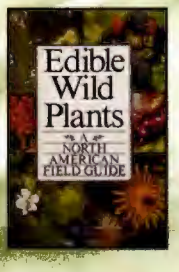


A HANDBOOK OF EDIBLE WEEDS by James A. Duke. 1992. Contains 100 plants with a detailed description, parts used, habitat, region, safety precautions, historical use, current use, and illustration of each plant. Hardcover, 246 pp. $49.95 #B024



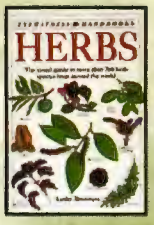
FIELD GUIDE TO MEDICINAL WILD PLANTS by Bradford Angier. 1978. From Amaranth to Yucca, the family, common, and Latin names, history, distinguishing characteristics, area grown, and medical uses of 108 wild medicinals which are individually illustrated in full color for easy identification. Softcover, 320 pp. $18.95. #B209

FIELD GUIDE TO EDIBLE WILD PLANTS by Bradford Angier. 1974. Full-color illustrations, family, common and Latin names, description, distribution, and edibility guidelines on 100 wild food plants across the United States and Canada. Softcover, 255 pp. $16.95. #B210



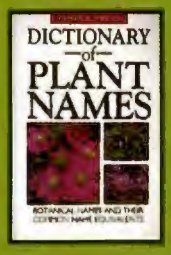
EDIBLE WILD PLANTS: A NORTH AMERICAN FIELD GUIDE by Thomas Elias and Peter Dykeman. 1990. Comprehensive, precise, and filled with drawings, maps, and nearly 400 photographs, this is a superior guide to identifying, harvesting, and preparing over 200 healthful plants from the wild. Softcover, 286 pp. $16.95. #B240

WILD ROOTS By Doug Elliott. 1995. A forager's guide to the edible and medicinal roots, tubers, corms, and rhizomes of North America. 69 roots listed, outlining botanical, family, and common names, habitat, line drawing, and edible and medicinal uses. 128 pp. Softcover. $14.95. #B173



HERBS by Leslie Bremness. 1994. More than 1500 full-color illustrations of over 700 species from around the world make this one of the most comprehensive guides to herbs available. Combines a concise description with annotated photographs to highlight the herb's distinguishing features and chief uses. Softcover, 303 pp. $17.95. #B207

GENERAL BOTANY

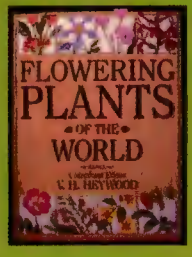


DICTIONARY OF PLANT NAMES by Allen Coombes. 1995. More than 1000 plants arranged alphabetically with common names cross referenced for easy access. Botanical names, country of origin, meaning and pronunciation, and other interesting facts. Hardcover, 194 pp. $10.95 #B273

THE EVOLUTION AND CLASSIFICATION OF FLOWERING PLANTS by Arthur Cronquist. 1988. 2nd edition. Taxonomy, speciation, the origin of angiosperms, evolution of characters, subclasses, orders and families of monocotyledons and dicotyledons, and fossil records. Hardcover, 555 pp. $42. #B265

MANUAL OF VASCULAR PLANTS OF NORTHEASTERN UNITED STATES AND ADJACENT CANADA by H. Gleason and A. Cronquist. 1991. 2nd edition. Guide for identifying plants of the area, incorporating the results of modern taxonomic research. Includes in-depth glossary, descriptions of plants, index, and room for notes. Hardcover, 910 pp. $69. #B266

BOTANY—AN INTRODUCTION TO PLANT BIOLOGY by James D. Mauseth. 2nd Ed. 1995. Emphasis on evolution by natural selection, analysis of botanical phenomena, and diversity of organisms. Color photos and transparencies. Glossary and index, Hardcover, 800 pp. $72.50 #B036



FLOWERING PLANTS OF THE WORLD by V. H. Heywood. 1993. Authoritative reference on angiosperms. Taxonomically arranged and generously illustrated, including entries on over 300 families consisting of distribution, diagnostic features, classification, and economic uses. Over 200 illustrations. Hardcover, 335 pp. $55. #B089

BOTANICAL LATIN by William Stern. 1992. 4th edition. Summarizes the grammar and syntax of botanical Latin, and covers the roots and origins of Latin and Latinized geographical names, color terms, symbols and abbreviations, diagnoses and descriptions, the formation of names and epithets, and more. Hardcover, 546 pp. $39.95. #B143

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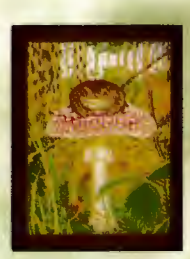
TRYING TO GIVE EASE by John Crellin and Jane Philpott. 1989. The life, practices, and accumulated knowledge of the late A. L. "Tommie" Bass, a widely known and admired Appalachian herbalist. Special attention is given to local resources that shape alternative medicine, the backgrounds of herbal practitioners, and the cultural currency of medical concepts once central to professional medicine and now less common. Softcover, 335 pp. $16.95. #B322



TOADS AND TOADSTOOLS by Adrian Morgan. 1995. Compendium of art history, cultural anthropology, pharmacology, herpetology, mycology, ethnology, history, and religion concerning the curious connection between a fungus and an amphibian. Highly detailed color drawings throughout. Softcover, 208 pp. $24.95. #B296

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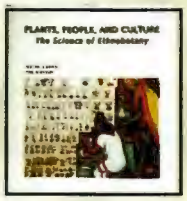
PLANTS, PEOPLE, AND CULTURE



by M. Balick and P. Cox. 1996. Beginning with the prehistoric use of plants by hunter-gatherers and the development of agriculture, the authors reveal how studies of plant use by indigenous peoples is the key to understanding the history of human civilization. Intriguing firsthand stories of fieldwork in remote villages deep in the rainforests of South America, Africa, and the islands of the South Pacific reveal the vast amount of knowledge indigenous peoples possess that warrants preservation. Hardcover, 228 pp. $32.95. #B196

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by Gary Martin. 1995. First in a new series of practical manuals in plant conservation, this book provides a detailed overview of this emerging discipline. Primarily for researchers beginning field studies. Descriptions of the skills and methods employed by ethnobotanists. Field work ethics, data collection, hypothesis testing, and practical ideas on applying ethnobotanical results to conservation and community development initiatives. Softcover, 268 pp. $39.95. #B163

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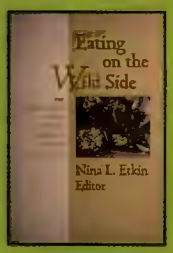
FOOD AND NUTRITION

EATING ON THE WILD SIDE: THE PHARMACOLOGIC, ECOLOGIC, AND SOCIAL IMPLICATIONS OF USING NONCULTIGENS



by Nina Etkin. 1994. Studies by anthropologists, paleobotanists, primatologists, and ethnobiologists that explore issues such as the consumption of unpalatable and famine foods, comparison of aboriginal diets of colonists and later arrivals. Hardcover, 305 pp. $40. #B118

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by Dianne Onstad. 1996. Over 300 plant-based foods and their history, folklore, culinary use and nutritional data, along with information on their botanical names. Includes 115 herbs and spices with their hard-to-find nutritional data. Not only an incredible reference text but a good read as well. Softcover, 528 pp. $29. #B262

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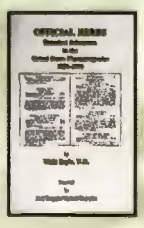

by Wade Boyle. 1991. Many herbs in the *US Pharmacopoeia* were native American plants which were introduced into pharmacy and medicine by westward-moving settlers who were unable to obtain European-based medicines from physicians on the East Coast. This volume meticulously documents the rise and fall of herbs as official drugs in America according to their listings in the *US Pharmacopeias* from 1820 to 1990. Softcover, 77 pp. $20. #B180

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PHENOLIC COMPOUNDS IN FOOD AND THEIR EFFECTS ON HEALTH, VOLUME 2
Ed. by M. Huang, C. Ho, and C. Lee. 1992. Articles on perspectives, sources and chemical and biological activities of phenolic antioxidants, flavonoids, green tea, and other phenolic compounds and cancer prevention. Hardcover, 402 pp. $89.95. #B313

MEDICINAL NATURAL PRODUCTS: A BIOSYNTHETIC APPROACH
by Paul Dewick. 1997. Building on fundamental chemical principles and demonstrating a unique integration of plant, microbial and animal natural products, the author guides the reader through a wealth of diverse natural metabolites used in medicine. Sources, production methods, use as drugs and modes of action are all covered, together with semi-synthetic derivatives and synthetic analogues developed from natural product templates. Softcover, 466 pp. $59.90. #B324

A DICTIONARY OF NATURAL PRODUCTS
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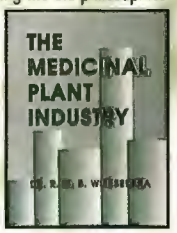
THE MEDICINAL PLANT INDUSTRY
by R. Wijesekera. 1991. Addresses a wide variety of topics including the old philosophies and modern impact of traditional medicines, and methods of assessing the spontaneous flora for industrial utilization. Covers aspects of cultivation and climatic variations, biological assessment and formulation, process technologies, phytochemical research and information sources. Reviews highly developed traditional medicine in China and India, and covers experiences in Africa and other continents. Softcover, 269 pp. $269. #B256



ENCYCLOPEDIA OF COMMON NATURAL INGREDIENTS USED IN FOOD, DRUGS, AND COSMETICS
by Albert Leung and Steven Foster. 1995. 2nd edition. Over 500 common natural ingredients and substances commercially used. Listed alphabetically according to common name, and includes synonyms, general descriptions, chemical composition, pharmacology or biological activities, uses and commercial preparations, regulatory status, and references. Hardcover, 624 pp. $150. #B136

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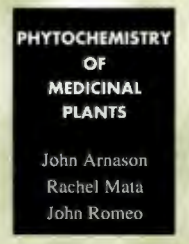
Ed. by John Arnason, Rachel Mata and John Romeo. 1995. Papers presented at the 1994 annual meeting of the Phytochemical Society of North America. Topics covered include adaptogens, immunostimulants, cancer preventatives, anti-AIDS agents, ethnobotanical traditions and how they can lead to new phytochemical and biological discoveries, state-of-the-art techniques of phytochemical analysis and root culture in medicinal plant studies, and more. Hardcover, 372 pp. $89.50. #B172



PLANT DRUG ANALYSIS
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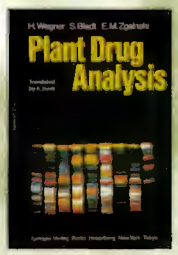
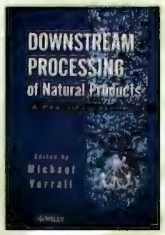


DOWNSTREAM PROCESSING OF NATURAL PRODUCTS: A PRACTICAL HANDBOOK
Ed. By Michael Verrall. 1996. Guides researchers and industrial workers through the potential pitfalls of natural product isolation. Covers: state-of-the-art techniques and observations; the three main stages of natural product purification: release, capture, and purification; proteins and secondary metabolites; G M P requirements; practical guidance on scale-up procedures and process scale instrumentation. Hardcover. 354 pp. $125. #B243



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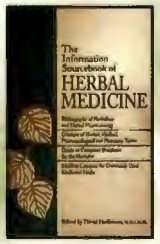
by David Hoffmann. 1994. A comprehensive guide to information on Western herbal medicine, providing resources on all topics including on-line and database sources. Hardcover, 308 pp. $40. #B077



OPIUM POPPY: BOTANY, CHEMISTRY AND PHARMACOLOGY
by L. D. Kapoor. 1995. Discusses the botany, agronomy, anatomy, physiology, and chemical aspects of the major alkaloids and their biosynthesis of this oldest recognized medicinal plant. Hardcover, 326 pp. $49.95 #B141
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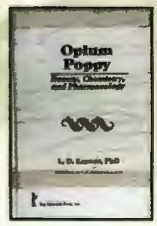

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by John Mann. 1994. Explains the chemical basis of modern pharmacology, and provides a description of how the use and abuse of natural products in various societies throughout the ages has led to the development of many of the drugs we take. Softcover, 232 pp. $18.95. #B105

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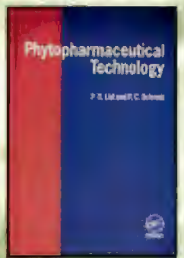

PHYTOCHEMISTRY OF PLANTS USED IN TRADITIONAL MEDICINE
Ed. by K. Hostettmann, A. Marston, M. Maillard, and M. Hamburger. 1995. Proceedings of the 1993 International Symposium of the Phytochemical Society of Europe. Sixteen papers that review the latest advances and trends in the field of active compounds from tropical and other medicinal plants. Hardcover, 408 pp. $145. #B193

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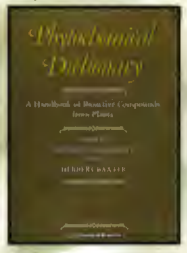

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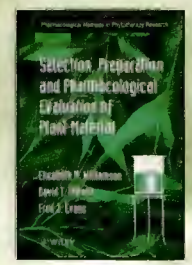
by Williamson, Okpoko, Evans. 1996. Strategies for the selection and extraction of plant material, protocols for pharmacological investigation which are arranged in therapeutic sections, examples of data obtained by methods described, and advice on interpretation of results. Some topics covered are blood cholesterol lowering, liver protecting, estrogenic activity, and anti-platelet testing. Softcover, 228 pp. $55. #B227



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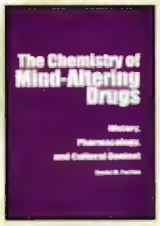

CONSUMING HABITS Ed. by Jordan Goodman by Paul Lovejoy. 1995. Collection of original essays exploring the rich analytical category of psychoactive substances from challenging historical and anthropological perspectives. Chapters focusing on opium, cocaine, heroin, coffee, tea, tobacco, kola and betel nut, from prehistory to the twentieth century. Hardcover, 244 pp. $60. #B152

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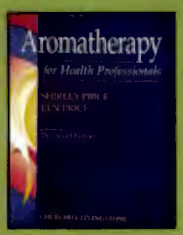

ESSENTIAL OIL CROPS by E. A. Weiss. 1997. Addresses growing essentiol oil plants profitably to obtain an aromatic derivative. Each chapter covers a different family. A brief history of the use and economic development is given, and cultivation, harvesting , and distilling described. Results of current research and recommendations for improved agronomic practices, together with methods of adding value to the crop are also discussed. Hardcover, 600 pp. $140. #B255

CLINICAL AROMATHERAPY IN NURSING by Jane Buckle. 1997. Contains an in-depth clinical section dealing with the management of common problems such as infection and pain, giving examples of which oils might be used in treatment. Illustrates the application of aromatherapy in specific clinical specialties. Cites more than 700 references. Softcover, 289 pp. $39.95. #B298

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AROMATHERAPY: A COMPLETE GUIDE TO THE HEALING ART by K. Keville and M. Green. 1995. Topics include the history and theory of fragrance; therapeutic uses of aromatherapy for circulation, digestion, respiration, immunity, and more; instructions for creating personal beauty and skin-care products; techniques for the home distillation and blending of essential oils; and a materia medica listing the origins and uses of commonly available essential oils. Softcover, 156 pp. $14.95. #B179

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AROMATHERAPY: SCENT AND PSYCHE by Peter and Kate Damian. 1995. With a thorough exposition of the ancient practice of aromatics in China, India, Persia, and Egypt and a modern scientific understanding of the psychology of scent, and based on research, clinical studies, and the authors' professional experience, this book is a guide to mastering the use of essential oils. Includes profiles for 44 essential oils and specific instructions for creating blends. Softcover, 244 pp. $16.95. #B245

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by John Boik. 1996. Known effects of natural therapies on key biomechanical processes active during cancer progression. Based on published scientific data obtained from over 1,200 references. Comprehensive review of cancer physiology, covering such topics as differentiation, angiogenesis, apoptosis, invasion, metastasis, and immune and hormonal interactions. Natural therapies reviewed include herbs, vitamins, minerals, enzymes, cartilage, Chinese medicine, electrotherapy, antioxidants, flavanoids, and others. Softcover, 315 pp. $45. #B161

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PHARMACOPEIAS

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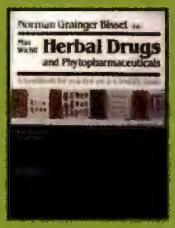
Ed. by Max Wichtl, translated by Norman Bisset. 1994. References, pharmacopeial monographs, sources, synonyms, constituent indications, side-effects, preparation of tea, commercially available phytomedicines, regulatory status, authentication using macroscopic, microscopic, and chromatographic techniques. 181 detailed monographs. Color prints of the dried part and whole plant in natural habitat. Hardcover, 568 pp. $190. #B080



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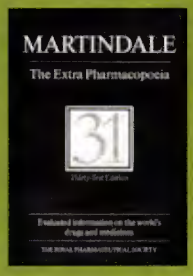
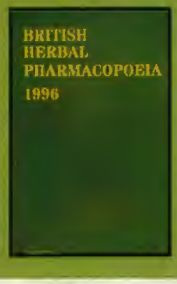
Ed. by James Reynolds. 1996. First published in 1883. 5,132 monographs organized by uses and actions. Contains a list of countries where monographed herbs are currently official. Lists toxicity of numerous international drugs. Includes a section describing 46,000 proprietory medicines from 14 countries, the active ingredients, a summary of information, and much more! Indexed, full cross reference. Hardcover, 2,363 pp. $325. #B065

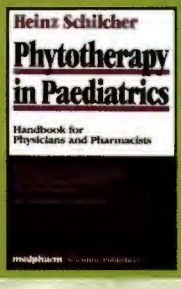


HERBAL MEDICINES: A GUIDE FOR HEALTH-CARE PROFESSIONALS
by C. Newall, L. Anderson and J. Phillipson. 1996. Covers 141 herbs commonly present in herbal remedies sold by pharmacies in the UK, providing botanical names, synonyms, parts used, pharmacopeial monograph listing, legal category, constituents, food use, herbal use, dose, pharmacological actions, side effects and toxicity, contraindications and warnings, pharmaceuticol comment, and references. Also appendixes by interactions, ingredients, and actions of ingredients. Hardcover, 296 pp. $54. #B198

BRITISH HERBAL COMPENDIUM
Ed. by Peter Bradley. 1992. Monographs on plant drug constituents and therapeutics with chemical scientific literature and excerpts from available regulatory guidelines of European countries. Hardcover, 239 pp. $90. #B017



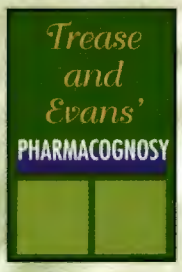
BRITISH HERBAL PHARMACOPOEIA
by the British Herbal Medicine Association. 1996. Now with 169 monographs on definition, description, identification and standards for plant materials commonly used in herbal products on the market today. Hardcover, 212 pp. $90. #B018



PHYTOTHERAPY IN PAEDIATRICS
by Heinz Schilcher. 1997. As only some of the many diseases of infants and young children can be treated by phytotherapy, this book is intended as an addition to synthetic drug therapy rather than as an alternative. Includes 14 indications for external applications and 30 for internal use. Softcover, 181 pp. $35. #B279

PHARMACOGNOSY

TREASE & EVANS' PHARMACOGNOSY
by W. C. Evans. 14th Edition, 1989. Standard text in Great Britain. A must for the research library and quality assurance labs of herb and dietary supplement companies worldwide. Hardcover. 832 pp. $78.95 #B015



DRUGS OF NATURAL ORIGIN: A TEXTBOOK OF PHARMACOGNOSY
by Gunnar Samuelsson 1992. Describes the origin of natural drug compounds, their chemistry and biochemistry, as well as their employment in medicine. Arranged according to biosynthetic principles. Hardcover, 320 pp. $59. #B093

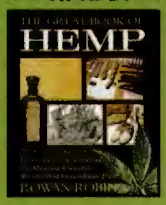
PHARMACOGNOSY AND PHARMACOBIOTECHNOLOGY
by Robbers, Speedie, Tyler. 1996. US text on natural product drugs, arranged mainly by biosynthetic and chemical relationships, including biotechnology-derived pharmaceuticals, a comprehensive treatment of antibiotics, and important herbal drugs in current use. Hardcover, 337 pp. $45. #B008

PHARMACOGNOSY, PHYTOCHEMISTRY, MEDICINAL PLANTS
by Jean Bruneton. 1995. Organized in four parts (primary metabolites, phenols, terpenes and steroids, and alkoloids). Phytochemical generalities, distribution, biosynthesis, extraction and quantitation methods, and biological properties. Origin, identity, production, composition, uses, processing, and optimization for each raw material. Therapeutical indication and recommended usage specified for each product. Hardcover, 915 pp. $196.50. B149

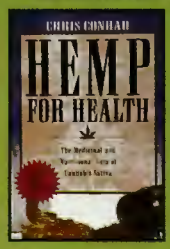
HEMP

HEMP HORIZONS
by John Rouloc. Explores the origins of industrial hemp and its current emergence as a marketplace phenomenon. Covers the lows and politics of this plant which has been a mainstay of agriculture for more than 12,000 years, surveys the multitude of products that can be made from hemp, and offers scientific facts to dispel myths about this controversial plant. Softcover, 212 pp. $18.95. #B315

THE GREAT BOOK OF HEMP
by Rowan Robinson. 1996. With Europe and Canada lifting bans on growing industrial hemp, it has exploded onto the marketplace in a dazzling array of products: jeans, sneakers, lip balm, tree-free paper, fiberboard, and insulation. With new technology it is possible to make anything from hemp that we now make from petroleum, while perhaps solving some of the world's most troubling environmental problems such as soil erosion, contamination, and deforestation. Softcover, 247 pp. $19.95. #B192

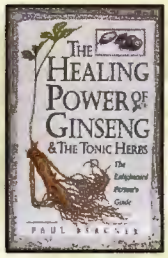


HEMP FOR HEALTH: THE MEDICINAL AND NUTRITIONAL USES OF CANNABIS SATIVA
by Chris Conrad. 1997. Explores every facet of Cannabis sativa's healing properties, from its traditional uses in ancient China and India to the modern rediscovery of the nutritional benefits of nonpsychoactive hempseed. Examines hundreds of scientific studies done on marijuana and explains its therapeutic effects on systems of the body. Softcover, 264 pp. $14.95 #B264



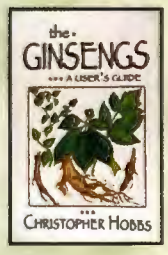
GINSENG

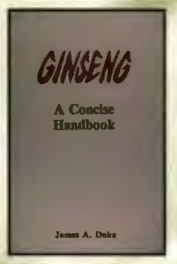
THE HEALING POWER OF GINSENG AND THE TONIC HERBS
by Paul Bergner. 1996. Explains the most famous of Chinese tonic herbs, which tonic herbs are effective and inexpensive substitutes for ginseng, which ones when combined with ginseng will make it more effective, and which ones, alone or in combination may be better suited to on individual's constitution. Softcover, 274 pp. $14.95. #B219



GINSENG: HOW TO FIND, GROW AND USE AMERICA'S FOREST GOLD
by Kim Pritts. 1995. Covers history, cultivation, diseases and pests, harvesting and marketing, hunting and conserving wild ginseng, and ginseng's place in traditional herbal medicine. Softcover, 150 pp. $16.95. #B217

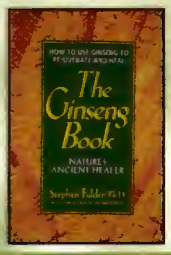
THE GINSENGS: A USER'S GUIDE
by Christopher Hobbs. 1996. Small but packed with information, this book will tell you the benefits and proper use of 10 kinds of ginseng, how to choose and use the most potent and cost-effective products, and summaries of human clinical studies that support the health claims of ginseng. Softcover, 103 pp. $7.95 #B214





GINSENG A CONCISE HANDBOOK
by James Duke. 1989. Examines history, taxonomy, chemistry, and pharmacology, and surveys the economics of ginseng cultivation. B/W illus., Hardcover, 273 pp. $39.95. #B047

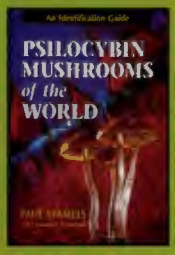
AMERICAN GINSENG, GREEN GOLD
Revised edition by W. Scott Persons. 1994. A growers' guide, including history and use. Information on life cycle, range, government regulation, medicinal properties, trade, growing methods, harvesting and stratifying, and economics. Photos, illus, tables. Softcover, 203 pp. $17.95. #B111



THE GINSENG BOOK: NATURE'S ANCIENT HEALER
by Stephen Fulder. 1996. Practical, sound advice on choosing the most appropriate form of ginseng and on selecting the right dosage. Covers legends and history, scientific studies, and cultivation and processing Softcover, 109 pp. $8.95 #B268

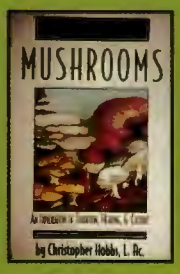
MUSHROOMS

PSILOCYBIN MUSHROOMS OF THE WORLD: A GUIDE TO IDENTIFICATION
by Paul Stamets. 1996. Nearly 100 species are described, including close relatives and poisonous look-alikes. Far more than just a field guide, this book will prove useful to mycologists, scholars, physicians, and the curious. Excellent color photographs. Softcover. 243 pp. $24.95. #B244



THE MUSHROOM CULTIVATOR
by Paul Stamets and J. S. Chilton. 1983. Detailed growth requirements for 15 mushroom species, sterile culture and mushroom spawn preparation techniques, procedures for stroin selection and development, practical preparation methods for compost and bulk substrates, mushroom life cycle and genetics, identification of the major competitor molds, pathogens and pests, and guidelines for the construction of mushroom growing rooms. Softcover. 413 pp. $29.95. #B237

THE SACRED MUSHROOM SEEKER
Ed. by Thomas Riedlinger. 1990. Tributes to R. Gordon Wasson, trailblazing ethnobotanist who brought increased scholarly attention to the importance of psychoactive plants in the spiritual life of indigenous peoples and had a profound influence well beyond the academic world. Essays by many of the most distinguished names in the fields of ethnobotany, comparative religion, and anthropology. Softcover, 283 pp. $24.95. #B294



MEDICINAL MUSHROOMS
by Christopher Hobbs. 1995. Over 100 species of edible fungi. Descriptions, habitats, range, history, chemistry, pharmacology, human clinical studies, toxicity, traditional medicinal uses, medical uses, preparation, dosage, related species, and procurement. Softcover. 251 pp. $17.95. #B115

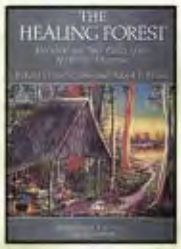
SHIITAKE: THE HEALING MUSHROOM
by Kenneth Jones. 1995. Covers nutritional value, history as a folk medicine, usefulness in lowering cholesterol and preventing heart disease, and its value in bolstering the immune system to increase the body's ability to prevent cancer, viral infections, and chronic fatigue syndrome. Softcover. 120 pp. $8.95. #B188

Top 10 Sellers Top 10 Sellers Top 10 Sellers

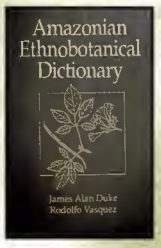
September through November 1997–Previous standing shown in ( )

1. German Commission E Monographs: Blumenthal, Goldberg, Gruenwald, Hall, Riggins and Rister, eds., Klein and Rister, trans. (1)
2. Herbs of Choice: Tyler (3)
3. Herbal Medicine: Weiss (8) tied with
3. Herbs for Your Health: Foster (new listing)
4. Botanical Safety Handbook: McGuffin, Hobbs, Upton and Goldberg (new listing)
5. Encyclopedia of Herbal Medicine: Bertram (6)
6. Herbal Prescriptions for Better Health: Brown (5)
7. Herbal Medicine: A Guide for Health-Care Professionals: Newall, Anderson and Phillipson (4)
8. Encyclopedia of Herbs and Their Uses: Bown (2)
9. The Honest Herbal: Tyler (10)
10. Cancer and Natural Medicine: Boik (back after a short absence)

AMAZONIA / RAINFORESTS



THE HEALING FOREST
by Richard E. Schultes and Robert F. Raffauf. 1990. Field research spanning a half-century in the Northwest Amazon. Over 1,600 species listed. The modern classic on Amazonian ethnobotany. B/W photos, illus., Hardcover, 486 pp. $69.95. #B002.



AMAZONIAN ETHNOBOTANICAL DICTIONARY
by James Duke and Rodolpho Vasquez. 1994. An excellent resource book on the wealth of botanicals in the Amazon. Lists uses and common names of hundreds of plants. Illus., Softcover, 215 pp. $49.95. #B071.

ONE RIVER: EXPLORATIONS AND DISCOVERIES IN THE AMAZON RAIN FOREST
by Wade Davis. 1996. The story of two generations of scientific explorers, this narrative follows the travels in South America that Davis ond Tim Plowman pursued over a 15 month period in 1974-75. Includes biographical chapters concerning Richard Evans Schultes's extraordinary fieldwork between 1936 and 1953. Hardcover, 537 pp. $27.50. #B206

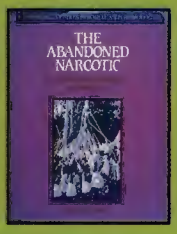
NON-TIMBER PRODUCTS FROM TROPICAL FORESTS
Ed. by Daniel Nepstad and Stephan Schwartzman. 1992. Volume 9 of the Advances in Economic Botany series subtitled Evaluation of a Conservation and Development Strategy. Contains 14 papers covering the biological and political context, social and economic context in Amazonia and in Africa and Asia, barriers to and strategies for expanding non-timber forest product extraction. Softcover, 164 pp. $18.95. #B274

THE PACIFIC

A HAWAIIAN FLORILEGIUM: BOTANICAL PORTRAITS FROM PARADISE

Illustrated by Mary Grierson, text by Peter Green. 1996. Contains 43 watercolors depicting native plants of Hawaii as well as Polynesian and modern introduced plants now prevalent in the islands. Text covers the ethnobotany and legends of the early Hawaiians, taxonomic research of botanists and the history that brought such an incredible mix of species to the islands. Hardcover, 102 pp. $45. #B295

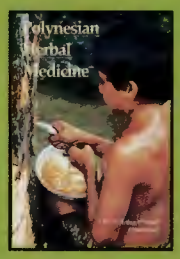
THE ABANDONED NARCOTIC: KAVA AND CULTURAL INSTABILITY IN MELANESIA



by Ron Brunton. 1989. Taking the varying fortunes of kava on the island of Tanna, Vanauta, as his starting point, the author suggests that kava's abandonment can best be explained in terms of its association with unstable religious cults and is part of a broader problem of why many traditional Melanesian societies were characteristically highly unstable. Hardcover, 219 pp. $54.95. #B134

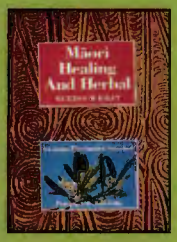
FLORA OF AUSTRALIA, VOL. 16

Ed. by Orchard and McCarthy. 1995. The first of two volumes to describe the family Proteaceae (and one species of Elaeagnaceae) contains identification keys and full descriptions of 488 taxa in 2 families and 7 subfamilies. Discusses the affinities of Proteaceae, morphological features, the fossil record, pollination biology, and utilization. Hardcover, 522 pp. $79.95. #B223



POLYNESIAN HERBAL MEDICINE
by W. Arthur Whistler. 1992. Discusses the use, past and present, of medicinal plants in Tonga, Samoa, Tahiti, Hawaii, and the Cook Islands. Includes descriptions, uses, and color photographs of 90 previously and currently used plants. Softcover, 236 pp. $33.00. #B205

TONGAN HERBAL MEDICINE
by W. Arthur Whistler. 1992. Provides an overview of traditional Tongan medicine, including causation of illness, medical problems, and practices of priests and lay healers. Discusses modern Tongan medicine in depth, including concepts of sickness and health, types of ailments, and contemporary herbal medicine. Includes descriptions and uses of 77 commonly used herbs. Softcover, 122 pp. $13.00. #B204



MAORI HEALING AND HERBAL
by Murdoch Riley. 1994. The first half of this New Zealand ethnobotonical sourcebook discusses 85 Maori healing and health topics, from mundane things like arthritis and backache to topics like drowning and tattooing. Part two presents over 200 medicinal plants with color photographs, description, relationships, external and internal uses. Hardcover, 528 pp. $65. #B222

INDIA

MEDICINAL PLANTS OF KASHMIR AND LADAKH

by M. K. Kaul. 1997. Comprehensive information on 111 selected medicinal plants occurring in the temperate and cold arid regions of the Himalayas. Includes a chapter on traditional knowledge of healing properties in 291 plants used ethnomedicinally. 69 color photos. Hardcover, 173 pp. $40. #B290

THE INDIAN MATERIA MEDICA

by Dr. Kim Nadkarni. Two volumes. 1993. This updated classic, known as the Ayurvedic Bible, contains about 2,000 herbs by botanical name, common Indian name in seven languages (including English), habitat, parts used, varieties, action, and common historical uses. Hardcover, 2,286 pp. $100. #B070

MEDICINAL PLANTS OF INDIA

by S. K. Jain and Robert DeFilipps. 2 vol. set. 1991. Surveys the medicinal plant resources of India (including Nagaland) and Sikkim, covering 860 species, and listing plants used in Western, Unani, and Ayurvedic medicines. Includes medicinal common names, botanical indexes, bibliography, and 133 full-page illustrations. Hardcover, 848 pp. $94.95 Set. #B121

JADE REMEDIES
by Peter Holmes. 1996. More than 450 plant, mineral, and animal remedies used worldwide in Chinese medicine, divided by restoratives, stimulants, relaxants, and sedatives. Up-to-date information on botanical sources, plant habits, biochemistry, pharmacology, energetic properties, therapeutic actions and indications, preparation forms, dosages, cautions and contraindications. More than 350 plant line drawings. Softcover, two volumes. 914 pp. $100. #B301

ORIENTAL MEDICINE: AN ILLUSTRATED GUIDE TO THE ASIAN ARTS OF HEALING
Ed. by J. Van Alphen and A. Aris. 1997. Covers the key concepts of theory, diagnosis, and actual practice of Indian, Tibetan, and Chinese traditional medicine. Essays by 17 contributors (both western academicians and physicians working within the individual disciplines) are accompanied by beautiful, full-color illustrations, both ancient and modern. Softcover, 271 pp. $39.95. #B303

CHINESE HERBAL MEDICINE
by Daniel Reid. 1986. Examines 200 examples of the natural flora and fauna on which Chinese herbal medicine is based and explains the philosophy that propelled its development. Well-illustrated and easy-to-read, this book provides the general reader with insight into one of the world's most complex and little-known sciences. Softcover, 174 pp. $25. #B306

PHARMACOLOGY AND APPLICATIONS OF CHINESE MATERIA MEDICA, VOL. 2
Ed. by H. Chang and P. But. 1987. Description, chemical composition, pharmacology, clinical studies, adverse effects and emergency treatment, and references on more than 120 herbs commonly used in Chinese medicine. (Sorry, Vol. 1 is no longer available.) Hardcover, 545 pp. $106. #B320

CHINESE HERBAL PATENT FORMULAS
by Jake Fratkin. 1986. Complete guide to 225 Chinese herbal patent medicines organized according to traditional categories, with discussion of their energetic applications, symptoms, cautions and precautions, and ingredients with percentage composition. Includes 49 American products made with Chinese herbs, Chinese characters and pinyin pronunciations, and a complete index by symptom and Chinese pathology. Softcover, 352 pp. $17.95. #B215

CHINESE HERBAL MEDICINE MATERIA MEDICA
by Dan Bensky and Andrew Gamble. Revised 1993. Extensive sourcebook about the most commonly used substances in Chinese herbal medicine. Each herb is illustrated and identified by its pharmaceutical, botanical, and family names. Hardcover. 556 pp. 380 illustrations. $75. #B003

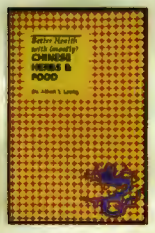
ORIENTAL MATERIA MEDICA
by Hong-Yen Hsu *et. al.* 1986. A standard reference. Covers 768 Chinese herbs, combining traditional properties and effects with reports on developments in botanical and biochemical research into their structures and actions. Hardcover, 932 pp. $69.95. #B157

CHINESE HERBAL MEDICINE FORMULAS AND STRATEGIES
by Dan Bensky and Randall Barolet. 1991. The first book of Chinese medicinal formulas in English. 600 Chinese medicinal formulas in 18 functional categories. 18 illustrations, Hardcover, 562 pp. $85. #B004

THE ILLUSTRATED CHINESE MATERIA MEDICA
by Kun-Ying Yen. 1992. Over 240 of the most commonly used agents in Chinese medicine, arranged in pharmacognostic style according to plant part used. Included are names, origins, characters, quality, production area, properties and actions, indications, chemical constituents, and representative formulas. Appendices include drug function comparison tables, a short description of drug processing, 356 formulas with ingredients and indications, and a glossary of Chinese medical terms. Plants are indexed by English, Latin, Pinyin, Japanese, and Chinese names. Hardcover, 383 pp. $79.95. #B158

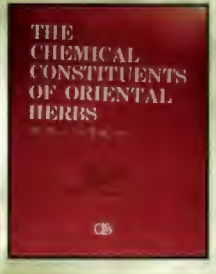
MEDICINAL PLANTS OF CHINA
by James Duke and Edward Ayensu. 1985, Two volumes. Covers 1,240 species with line drawings, names, uses, chemical constituents, and parts used for each herb. Intended for the use of biologists, chemists, and laypersons. B/W illus., Hardcover, 705 pp. $94.95 #B048

BETTER HEALTH WITH (MOSTLY) CHINESE HERBS AND FOODS
by Albert Leung. 1995. Sixty herbs and foods, not primarily used as medicine, that supply certain unconventional nutrients which may be missing from modern diets. Includes Latin binomial and family name of plant source, parts used, properties, most common traditional uses, and full-color photographs. Softcover, 105 pp. $9.95. #B218



OUTLINE GUIDE TO CHINESE HERBAL PATENT MEDICINES IN PILL FORM
by Margaret Naeser. 1991. 2nd edition. Over 175 patent medicines. Organized with Chinese characters and English translation and Pinyin spelling, function and clinical application, ingredients with explanation of clinical function of each herb, pictures of packaging. Softcover, 371 pp. $29.95 #B099

THE CHEMICAL CONSTITUENTS OF ORIENTAL HERBS



by Hong-Yen Hsu, Yuh-Pan Chen, and Mino Hong. 1982. A compilation of most of the natural products found in Oriental herbal drugs reported in scientific periodicals and books published before the end of 1978. Includes structure, common name, systematic name, molecular formula, melting point, boiling point, optical rotation, plant source and portion of the plant source in which the component is located. Hardcover, 2 vol. set, 829 pp. $125. #B132

PHARMACOPOEIA OF THE PEOPLE'S REPUBLIC OF CHINA

Ed. by Tu Guoshi. 1992. This English edition contains 1211 monographs on traditional and modern Chinese medicines, compiled separately to facilitate access. Extensive appendices on requirements for preparations and biological products, chromatography, tests, radio-pharmaceutical analysis, statistical methods in biological assay, infra-red reference spectra, and more. Hardcover, 654 pp. $260. #B221

PHARMACOLOGY OF CHINESE HERBS
by Kee Chang Huang. 1993. 473 herbs, describing the chemical composition, pharmacological actions, toxicity, and therapeutic uses of each herb. Lists scientific and experimental data. Hardcover, 388 pp. $179. #B046

CHINESE HEALING FOODS AND HERBS
by Albert Leung. 1984. Describes 48 traditional Chinese herbs, their sources, history, components, dosages, safety precautions, effects, and recipes. Illus., Softcover, 192 pp. $10.95 #B054

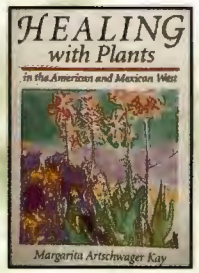
U.S. REGIONAL

MEDICINE FROM THE MOUNTAINS: MEDICINAL PLANTS OF THE SIERRA NEVADA
by Kimball Chatfield. 1997. Includes line drawings, common names, Latin binomial, family, description and habitat, chemistry, history and modern uses, toxicity, dosage, and cultivation of 33 commonly found plants in the Sierra Nevada. Also provides a glossary, resources, and suggested reading list. Softcover, 219 pp. $17.95. #B311

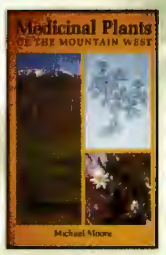
FLORA OF NORTH AMERICA VOLUME 3
Ed. by Flora of North America Editorial Committee. 1997. Provides identification keys, summaries of habitats and geographic ranges, distribution maps, pertinent synonymies, descriptions, chromosome numbers, phenological information, and other significant biological observations for each species covered. Hardcover, 616 pp. $85. #B038B

EDIBLE AND MEDICINAL PLANTS OF THE GREAT LAKES REGION
by Thomas Naegele. 1996. Describes over 150 plants commonly found in the Great Lakes area, including detailed drawings, preparation techniques, related medical uses, edible qualities, chemical breakdown, poisonous aspects, and commercial value, if any. Also features over 70 tables, organized by ailment, that list the plants known to cure specific symptoms. Softcover, 423 pp. $18.95. #B234

HEALING WITH PLANTS IN THE AMERICAN AND MEXICAN WEST
by Margarita Kay. 1996. Descriptions of 100 plants including botanical and common plant names, history, contemporary uses, a description of how the plant is prepared and administered, and brief phytochemical data. Softcover, 315 pp. $19.95. #B229



MEDICINAL PLANTS OF THE MOUNTAIN WEST
by Michael Moore. 1979. Guide to the identification, preparation, and uses of traditional medicinal plants found in mountains, foothills, and upland areas. 120 plant types, covering 1,000 species with a down-to-earth practical approach. Softcover, 200 pp. $13.95. #B112



MEDICINAL PLANTS OF THE DESERT AND CANYON WEST
by Michael Moore. 1989. Guide to identifying, preparing, and using traditional medicinal plants. Exposes the botanical wealth of the desert and the need to protect it. Softcover, 184 pp. $13.95. #B113

MEDICINAL PLANTS OF THE PACIFIC WEST
by Michael Moore. 1993. Guide to over 300 species geographically ranging from Baja California to Alaska. Details what medicinal plants exist, where to find them, how to identify, gather,and use them. Softcover, 359 pp. $22.50. #B114

EDIBLE AND MEDICINAL PLANTS OF THE WEST
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by Michael Moore. 1990. Comprehensive text detailing 172 plants with primary and secondary uses cross indexed by Spanish, scientific, and primary names of each plant. Includes precautions, usefulness ratings, dosage, preparation methods, and therapeutic index grouping ailments and complaints with the plants best suited to treat them. Softcover, 108 pp. $9.95 #B260

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by Daniel Moerman. 1982. Written in a witty narrative style, this handbook discusses many of the plants used medicinally by Native American peoples. Accurate line drawings are accompanied by common and botanical names, as well as descriptions to help the reader identify the plant in the field. Hardcover, 242 pp. $24.95. #B211

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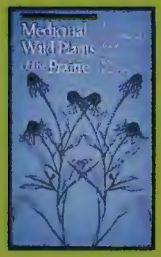
by Kelly Kindscher. 1992. 203 native prairie plant species used by Native Americans, settlers, and doctors. Includes botanical, Native American, and common name; description and habitat; parts used, Native American use, medical use; scientific research; and cultivation. Softcover, 340 pp. $12.95 #B140



FOREST PHARMACY: MEDICINAL PLANTS IN AMERICAN FORESTS
by Steven Foster. 1995. Discusses historical and continued use of America's forest plants as powerful sources of medicine. Outlines early Native American use and declines in research and Americans' resurgent interest in medicinal plants. Color photos. Softcover, 64 pp. $6.95. #B103

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by Virgil Vogel. 1990. The classic work in this field. Lists the practical and pharmacological bases of treatment and cure. Essay on the medical aspects of Indian history, folklore, pharmacology, and botany. Softcover, 578 pp. $24.95. #B131

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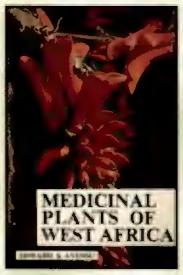

MEDICINAL PLANTS OF WEST AFRICA
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by Palmer, Sánchez, Mayorga. 1991. An environmental treatise from Costa Rica's KékölDi Indigenous Reserve, this book shows how the rainforest provides the KékölDi people with everything they need to live, as long as they respect Sibö's (God's) laws governing the use of natural resources. Income from book sales goes directly to the KékölDi people, to support their rainforest conservation efforts and their cultural school. Softcover. 96 pp. $12. #B225

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Ed. by L. McDade, K. Bawa, H. Hespenheide and G. Hartshorn. 1994. The first comprehensive review of over 30 years of research at the La Selva nature reserve and field station in Costa Rica, covering climate, soils, physical setting, plant and animal life, and agricultural development and land use in nearby areas. Softcover, 486 pp. $28.95 #B261

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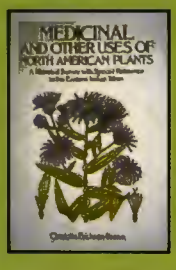

by Charlotte Erichsen-Brown. 1979. Focuses on the ways North American Indians, especially Eastern tribes, have used plants. Plants are grouped according to habitat: wet, open places, woods and thickets, and dry, open places. A detailed line drawing of the plant's leaves, buds, twigs, seeds, and other characteristic features accompanies the textual descriptions. Softcover, 512 pp. $12.95. #B137

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by Stephen Buhner. 1996. Looks at the historical use of plants by Native Americans and gives a detailed look at how the sacredness of plants is experienced in indigenous cultures. Includes color plates of 19 species of plants, a short compendium of plants and their uses as sacred medicine, and an appendix that addresses ethical harvesting. Softcover, 210 pp. $18.95. #B228

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by William Dunmire and Gail Tierney. 1995. A chronicle of plant uses that encompasses all of the traditional territory of the nineteen modern pueblos of New Mexico, centering in the middle Rio Grande Valley. Documents the prehistoric, historic, and contemporary uses of 300 species of southwestern flora. Softcover, 289 pp. $22.50. #B241

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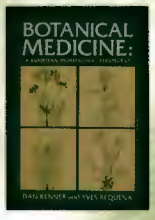
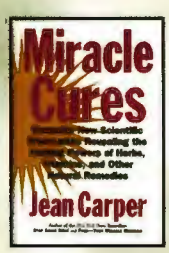
BOTANICAL MEDICINE: A EUROPEAN PROFESSIONAL PERSPECTIVE



by Dan Kenner and Yves Requena. 1996. Presents the basics of three whole-system models, the neuro-endocrine, the five phase and the diathetic, in an effort to help healthcare practitioners prescribe botanicals based on one or more of the systems that they use. Includes herb, essential oil and gemmo-therapy profiles, and therapeutic guidelines. Softcover, 393 pp. $35. #B319



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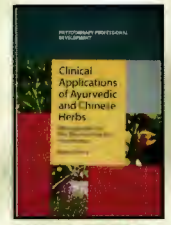

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by Kerry Bone. 1996. Provides comprehensive monographs on important Ayurvedic and Chinese herbs in a form suited to practitioners of western herbal medicine. The monographs emphasize the large body of pharmacological and clinical information now available for the 32 plants covered. Softcover, 152 pp. $30. #B291

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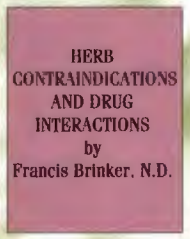

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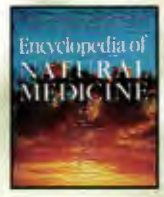

by M. Murray and J. Pizzorno. 1991. Explains the principles of naturopathic medicine and outlines their application through the safe and effective use of herbs, vitamins, minerals, diet, and nutrition. Addresses over 60 illnesses and conditions from acne to varicose veins. Softcover, 622 pp. $19.95. #B200

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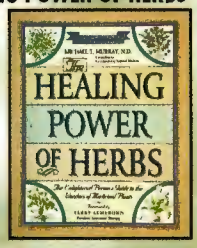

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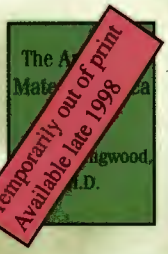

by Finley Ellingwood, M.D. 1994. First published in 1919. Botanical therapeutic agents are discussed and compared ingroups under headings thatclassify them by their action. In addition, five fold-out charts provide a quick and in-depth comparative glance of the most commonly used herbs for fever, heart, digestive, liver, and female reproductive organ problems. Hardcover, 564 pp. $82. #B084

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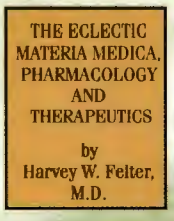

by Harvey W. Felter, M.D. 1994. First published in 1922. This work prescribes on the basis of the symptoms that the agent would either cure or palliate. Hardcover, 764 pp. $95. #B082

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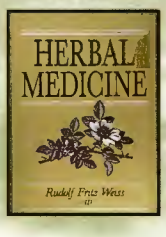

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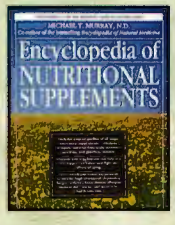

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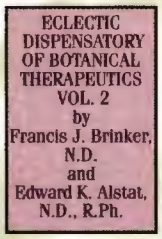

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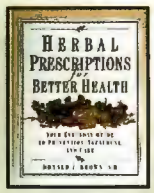

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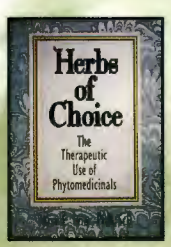

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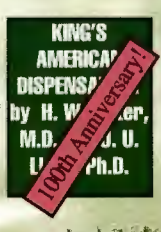

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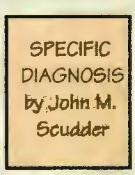

by John M. Scudder. 1994. First published in 1874. "Dr. Scudder maintained that there was a definitive relationship between known drug action and known conditions of disease as manifested by symptoms, and upon this theory based his justly named book."—editor of the *Gleaner*, 1875. Hardcover, 387 pp. $48. #B085

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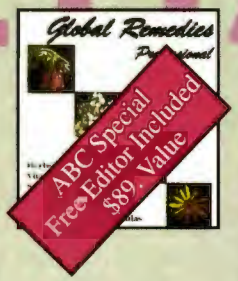

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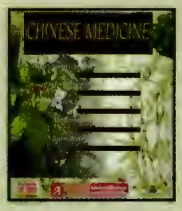

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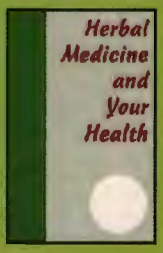

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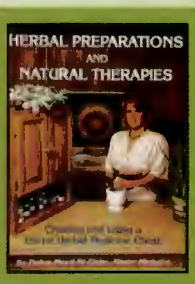

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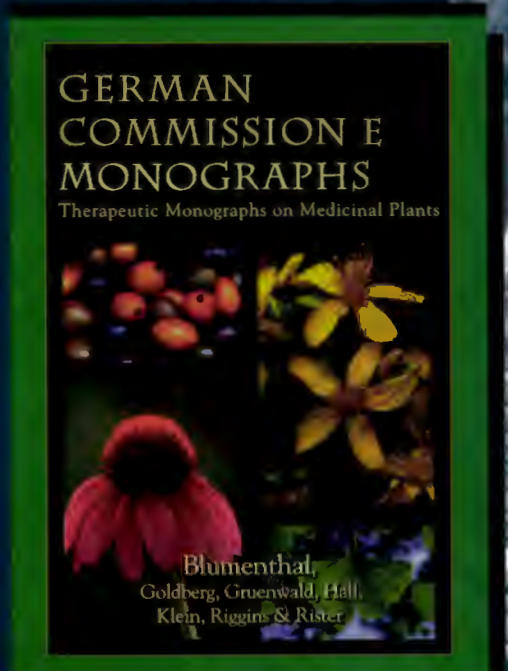

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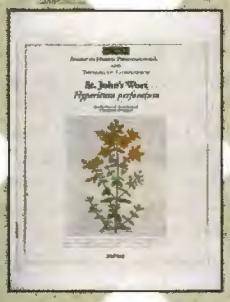

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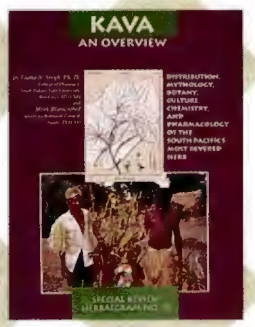

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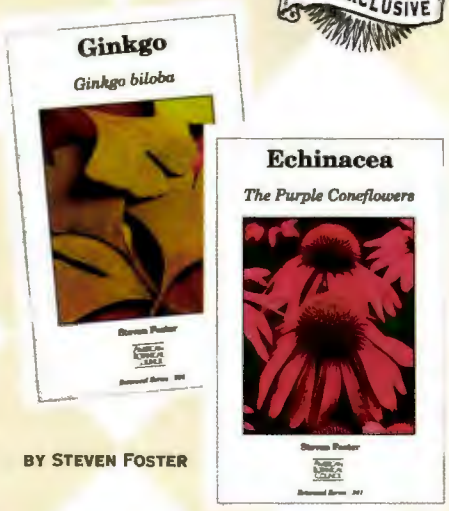

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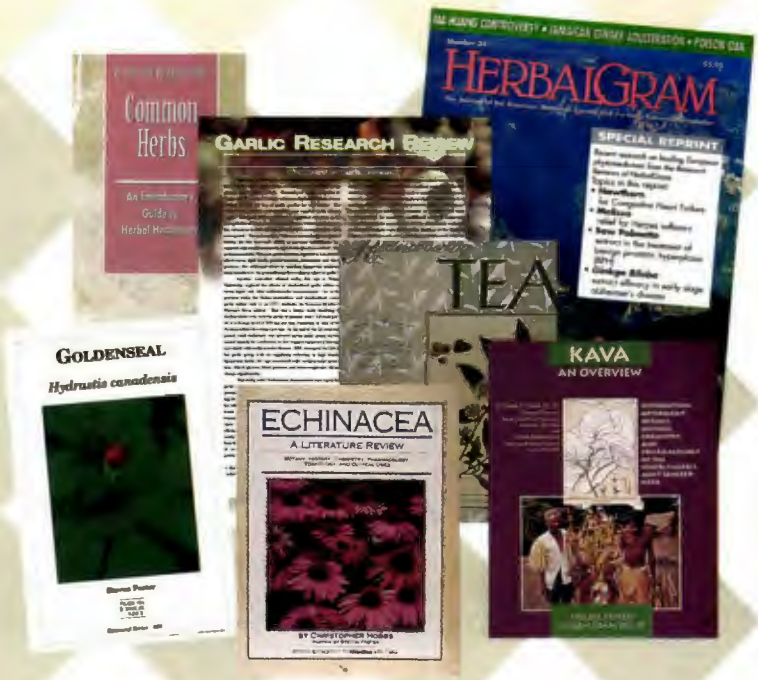

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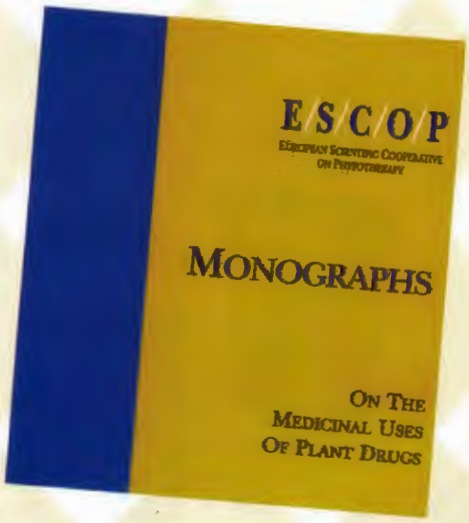

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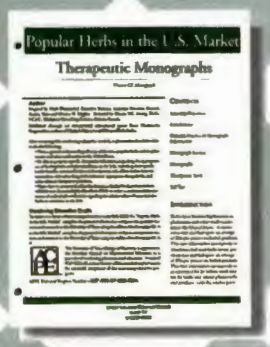

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Your trail from the Explornapo Camp to the ACEER. Photo © 1997 Ginger Hudson

The coast of Belize Photo by Michael Karchesy, 1995 workshop participant

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For further information about these exciting expeditions, please contact, or send your mailing address to:

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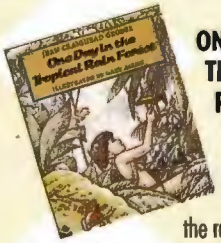

ONE DAY IN THE TROPICAL RAIN FOREST
by Jean Craighead George. 1990. A timely overview of the rainforest's vital role in the earth's ecology, told from the point of view of Tepui, an indigenous Venezuelan boy. Great way to introduce children to the flora and fauna of the tropical rainforest. Recommended for ages 9-12 but appeals to a much broader range. Hardcover, 56 pp. $14.95. #G004

HERBALIST OF YARROW
by Shatoya de la Tour. 1994. Cleverly introduces children to herbs and their healing properties through a wonderfully engaging tale with lovely color illustrations. Includes recipes for teas, herbal baths and other healing remedies. Hardcover, 77 pp. $15.95. #G002

COLORING BOOK OF THE MAYA RAIN FOREST
Text by Dr. Rosita Arvigo, illustrations by Tessa Fairweather. 1992. Written in both English and Spanish, this book is a delightful way to learn about the useful plants and trees growing in tropical areas. Includes space to enter other medicinal plants you find and where found, and items you find that are made of plant material. $6. #G006

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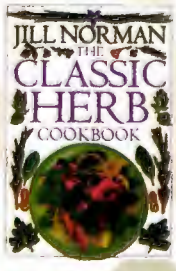
by Rob Talbot and Robin Whiteman. 1997. Beautifully illustrated recreation of the garden of Ellis Peters' famous fictional monk/herbalist/sleuth. Discusses all the plants mentioned in *The Brother Cadfael Chronicles*, and explains their uses in medieval times, as well as tracing a year in Cadfael's life as a healer. 144 color illustrations. Hardcover, 200 pp. $29.95. #G007

THE CLASSIC HERB COOKBOOK
by Jill Norman. 1997. Recipes for more than 100 mouthwatering dishes. Easy-to-follow format with full-color photographs of the finished product, as well as the necessary ingredients. Catalog of herbs illustrates varieties with notes on their properties and possible uses. Hardcover, 144 pp. $24.95. #G008



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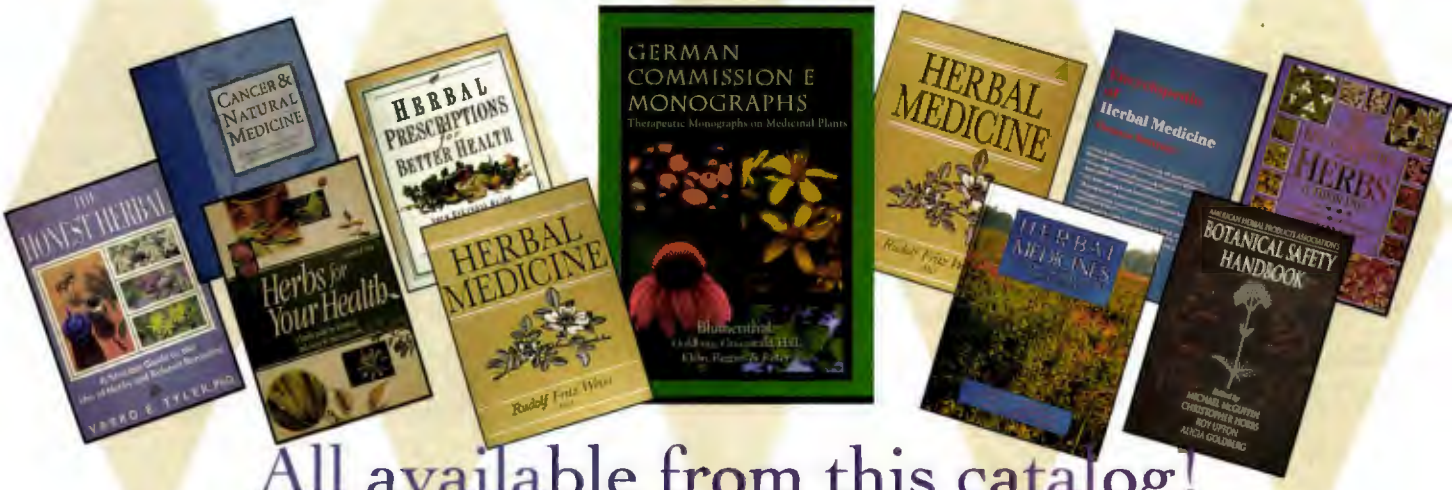
2. Herbs of Choice: Tyler (3)
3. Herbal Medicine: Weiss (8) tied with
3. Herbs for Your Health: Foster (new listing)
4. Botanical Safety Handbook: McGuffin, Hobbs, Upton and Goldberg (new listing)
5. Encyclopedia of Herbal Medicine: Bertram (6)
6. Herbal Prescriptions for Better Health: Brown (5)
7. Herbal Medicine: A Guide for Health-Care Professionals: Newall, Anderson and Phillipson (4)
8. Encyclopedia of Herbs and Their Uses: Bown (2)
9. The Honest Herbal: Tyler (10)
10. Cancer and Natural Medicine: Boik (back after a short absence)



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August 14-16: The Health Show, Austin Premiere. Focus is on Holistic Health and Natural Therapies. Three-day educational conference for anyone interested in maximizing their longevity and quality of life. Speakers include Andrew Weil, Mark Blumenthal, Alan Gaby, Michael Murray, and more. Contact InterShow, 1258 N. Palm Ave., Sarasota, FL 34236. Ph: 800/226-0323 or 941-955-0323. Fax: 941/366-5755.

August 18-22: XII International Congress of Traditional and Folk Medicine, Albuquerque, NM. Sponsored by the Mexican Academy of Traditional Medicine, and the University of New Mexico. Contact 505/277-0952.

August 27-30: 15th Annual Breitenbush Hot Springs Herbal Conference, Detroit, OR. Three days of herbal workshops taught by some of the finest herbalists in the country in a setting of green forests, wild rivers and healing mineral hot springs. Teachers include Rosemary Gladstar, Stephen Buhner, Paul Bergner, Mindy Green, and Greg Tilford. Over 40 workshops for the beginning herbalist to the established clinician. Contact Autumn Summers at P.O. Box 2131, Sebastopol, CA 95473. Ph./Fax: 707/579-6209. Email <autumnsu@aol.com>.

September 13-14: Ginseng Growing Workshop and American Ginseng Conference, Ithaca, NY. Sponsored by the North American Ginseng Association. Seminars, workshops, exhibits, and panel discussions on ginseng's history, uses and cultivation, and on its economic potential as an agricultural crop. Contact North American Ginseng Association, P.O. Box 127, Roxbury, NY 12474. Ph: 607/326-3234. Fax: 607/432-3293.

September 13-16: Biologically Active Polysaccharides, Oslo, Norway. Role of polysaccharides in plants, pathology, pharmacology, and more. Paper deadline May 1998. Phytochemical Society of Europe. Contact Professor B.S. Paulsen, Farmasøytisk. Ph: 47 2285 6572. Fax: 47 2285 4402. Email <b.s.paulsen@farmasi.uio.no>.

September 14-16: Green Pharmaceuticals 98, Vancouver, Canada. This international conference will examine the opportunities and obstacles for herbal medicines, and provide a forum to discuss global strategies for the successful manufacture and marketing of herbal medicines. Bringing together pharmaceutical executives, venture capitalists, researchers, pharmaceutical technologists, medical practitioners, regulators, manufacturers, and more. Contact Intertech Corporation. Ph. 207/781-9800. Fax: 207/781-2150. Email <info@intertechusa.com>. Website <http://www.intertechusa.com>.

September 22-25: 7th International Symposium on Ginseng, Seoul, Korea. Organized by the Society for Korean Ginseng. Contact Professor Young Kim, General Secretary, #804 Seocho World Officetel, Seocho-Dong, Seoul 137-070, Korea. Ph: 82 2 880 7842. Fax 82 2 888 2933. Email <youngkim@plaza.snu.ac.kr>.

October 4-7: North American Conference on Enterprise Development Through Agroforestry: Farming the Agroforest for Specialty Products, Minneapolis, MN. Sessions will focus on three major areas of specialty forest products intentionally produced through forest farming: Botanicals and Medicinals, Decorative and Handicraft Products, and Forest-Based Food Products. Contact Scott Josiah, CINRAM, University of Minnesota. Ph: 612/624-7418. Fax: 612/625-5212. Email <CINRAM@forestry.umn.edu>.

October 15-16: Phytomedicine and Consumer Protection: 5th International ESCOP Symposium, London. The symposium will discuss, in the context of consumer education, the growing use of herbs or phytomedicines across Europe and their legal status as medicinal products. Speakers will address current progress in establishing clear scientific standards of quality, safety and efficacy and the regulatory implications of these developments, including an authoritative market review of herbal medicinal products use in Europe. Contact ESCOP Secretariat, Argyle House, Gandy Street, Exeter, Devon UK, EX4 3LS. Ph: 44 1392 424626. Fax: 44 1392 424864. Email <phytonet@exeter.ac.uk>. Website <http://www.exeter.ac.uk/phytonet>.

October 31 - November 7: 5th Annual Peruvian Amazon Pharmacy from the Rainforest Workshop. Expedition includes continuing education accredited workshops and field excursions led by prominent experts in fields of phytomedicine, pharmacognosy, ethnobotanical and ethnobiomedicinal research, including Dr. James Duke, Mark Blumenthal, and others. Explore the 1/4-mile Canopy Walkway over 115 feet above the rainforest floor. Contact Ginger Webb, American Botanical Council. Ph: 512/331-8868. Fax: 512/331-1924. Email <gingerw@herbalgram.org>.

November 12-14: The Florida Health Show. This year's focus is Living Longer and Quality of Life. Speakers include Dr. Ruth Westheimer, Bernie Siegel, Michael Murray, and many more. Disney's Coronado Springs, Lake Buena Vista, FL. Contact InterShow, 1258 N. Palm Ave., Sarasota, FL 34236. Ph: 800/226-0323 or 941-955-0323. Fax: 941/366-5755.

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Aromatherapy Studies Course/Jeanne Rose. Correspondence, certification, in-person intensives. 160 CEU provided, California Board of RN Provider #CEP11659. Info: 219 Carl St., San Francisco, CA 94117 or FAX 415/564-6799.

The Business of Herbs — Comprehensive reporting, business news, marketing hints, sources, and resources. Subscription $24/yr. Brochure/SASE from Northwind Publications, 439 Ponderosa Way, Jemez Springs, NM 87025.

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