

# A Ganjalletual Epic

Cannabis: Evolution and Ethnobotany  
By Robert C. Clarke and Mark Merlin  
University of California Press, 2013;  
434 pages; \$95

Review by Michael Backes

In 1977, Mark Merlin’s master’s thesis, “Man and Marijuana,” inspired Robert Connell Clarke —then an undergraduate at UC Santa Cruz— to write “The Botany and Ecology of Cannabis” (Pods Press 1977).

Clarke would go on to write several acclaimed books on cannabis: “Marijuana Botany (Ronin Press 1981), Hemp Diseases and Pests” (with John McPartland and David Watson, CABI Pub 2000), and “Hashish!” (Red Eye Press 1998).

With Watson in the late 1980s, Clarke launched HortaPharm, a Dutch company that pioneered the contemporary study of drug cannabis cultivars for medicinal application. The two expatriates also founded the Amsterdam-based International Hemp Association to promote understanding and production of the plant.

Mark Merlin, PhD, would become a widely published author and a respected professor and ethnobotanist at the University of Hawaii. It wasn’t until 1997 that Clarke and Merlin met (at a meeting of the Society for Economic Botany in London). They spent 15 years collaborating on “Cannabis: Evolution and Ethnobotany,” which is a magnum opus.

This book will prove vital to any serious cannabis researcher or aficionado. It is a beautifully produced overview of everything cannabis, exploring the plant’s history and its uses as fiber, food, medicine and psychoactive.

The highly readable text is augmented by a large selection of color photographs —many from Clarke’s vast personal collection. In his travels he took pictures of landrace cannabis cultivars and indigenous cannabis products and practices around the globe. Outstanding maps by Matt Barbee, a cartographer at the University of Hawaii, clearly illustrate the plant’s evolution and dispersal around the world.

Clarke and Merlin provide an interesting discussion of the impact that the introduction of tobacco smoking to Europe by Christopher Columbus’ shipmates had on

the adoption of smoking cannabis as a cannabinoid delivery method.

A section on recent cannabis breeding provides fascinating insights into the development of modern drug-cannabis cultivars in the New World after their introduction from India and Africa.

One of the most interesting chapters explores the widespread nonpsychoactive integration of cannabis as an important constituent of birth, marriage, and death rituals in cultures from Japan and Korea, then across Asia to Europe and England.

The authors guide us from the 800-year-old *Cannabis* gardens used to produce ritual investiture garments for the Japanese Imperial family to the gallows of merry Olde England, where hempen rope was used in judicial hangings.

They move deftly from past to present, from botany to sociology. Consider this excerpt on hemp in Korea: “Originally introduced from China, Cannabis seeds have also been used in Korea for millennia. Today, hemp seed crops are grown in much more limited regions of South Korea than hemp fiber crops, while in North Korea, hemp seed remains a staple part of the peasant diet.

“Presently, neither hemp seed nor hemp seed oil is commonly consumed by South Koreans. This is in direct contrast to North Korea and neighboring northeastern China where whole hemp seeds are still eaten uncooked or roasted as snack foods, and oil is pressed from the seed for commerical use. This difference may be explained by recent history, with South Koreans now having the economic liberty to make consumer food choices, whereas the impoverished and largely agrarian population of North Korea remains in a home-based subsistence economy. ..

“The Korean Peninsula continues to produce hemp fiber and seed with traditional techniques once employed across much of temperate East Asia and thus provides us with useful contemporary examples of traditional hemp farming for observation... Hemp seed cultivation is much more widespread in North Korea and has become a matter of patriotic fervor. On August 25, 2004, the *Rodong Sinmun* or ‘Newspaper of the Workers,’ a government newspaper, published a front-page editorial article describing the government’s plans to grow hemp and pointed out that hemp seed oil

could be used for cooking or to make soap and hemp seed cakes could be used to feed livestock.”

Who knew?

One of the most significant features of *Cannabis: Evolution and Ethnobotany* is the revised taxonomy it proposes for the plant. The authors leverage Karl Hillig’s genetic research into cannabis speciation, which is based upon an intensive examination of the plant’s likely evolution leading up to the last Ice Age and its dispersion afterwards.

From this dispersal after the Last Glacial Maximum arose a mutation in an allele that enabled the plant to produce THC from CBG, and this ultimately led to the emergence of today’s drug cultivars. Clarke

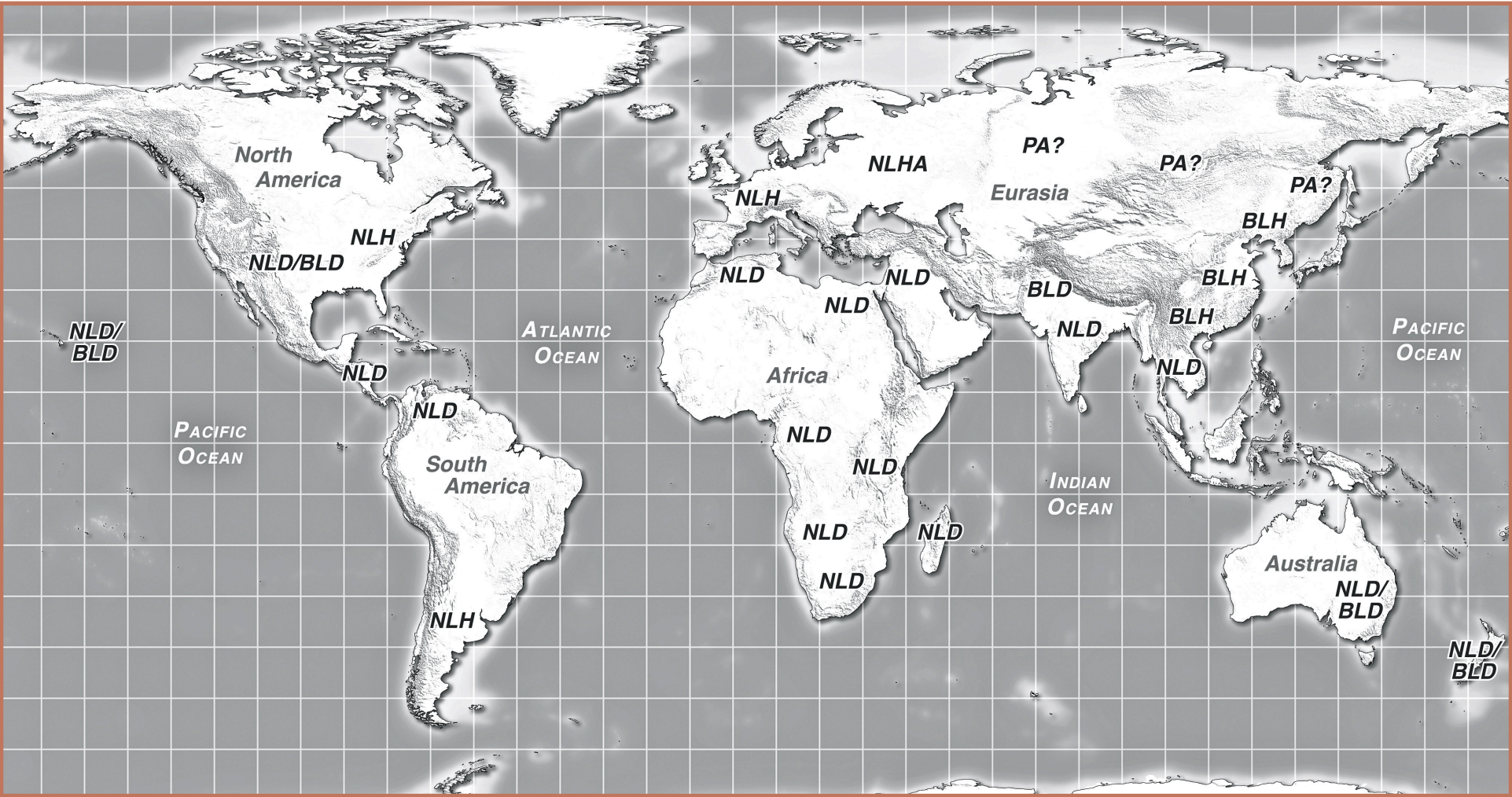
and Merlin propose that *Cannabis sativa* produces the cannabis biotypes typically grown for fiber, while *Cannabis indica* produces the common broad and narrow-leafleted THC drug biotypes. The argument and its presentation supporting this thesis for cannabis speciation are both persuasive and cogent.

From its likely role at the birth of agriculture along riverbanks in Asia to contemporary development of drug cultivars in Northern California, Clarke and Merlin paint a vivid portrait of our complex relationship with cannabis.

The historical sweep of *Cannabis: Evolution and Ethnobotany* is nothing short of epic.

Acronym	Biotype	Binomial	Early Range	Population Status	Uses
PA	Putative Ancestor	<i>Cannabis ruderalis</i>	Northern Central Asia	Putative <i>C. sativa</i> and <i>C. indica</i> ancestor; Wild or ancient feral escapes?	Ancient use for seed and crude fiber?
PHA	Putative Hemp Ancestor	Extant and unrecognized or extinct?	Balkan Peninsula and Caucasus Mountains during last ice-age?	Hypothetical <i>C. sativa</i> ancestor	Ancient use for seed and crude fiber?
NLHA	Narrow-leaf Hemp Ancestor	<i>Cannabis sativa</i> ssp. <i>spontanea</i>	Eastern Europe and Central Asia	Putative NLH ancestor; more likely feral NLH	Seed and crude fiber
NLH	Narrow-leaf Hemp	<i>Cannabis sativa</i> ssp. <i>sativa</i>	Europe	Cultivated and feral	Seed and textile fiber
PDA	Putative Drug Ancestor	Extant and unrecognized or extinct?	Hengduan Mountains and Yungui Plateau during last ice-age?	Hypothetical <i>C. indica</i> ancestor	Ancient use for ritual and medicinal drugs?
BLHA	Broad-leaf Hemp Ancestor	Extant and unrecognized or extinct?	Eastern Asia	Hypothetical BLH ancestor	Ancient use for seed and crude fiber?
BLH	Broad-leaf Hemp	<i>Cannabis indica</i> ssp. <i>chinensis</i>	China, Korea, Japan and Southeast Asia	Cultivated and feral	Seed and textile fiber
NLDA	Narrow-leaf Drug Ancestor	<i>Cannabis indica</i> ssp. <i>kafiristanica</i>	Himalayan Foothills – Kashmir to Myanmar	Putative NLD ancestor; more likely feral NLD	Drugs - marijuana and hashish
NLD	Narrow-leaf Drug	<i>Cannabis indica</i> ssp. <i>indica</i>	South and Southeast Asia, Middle East	Cultivated and feral	Drugs - marijuana and hashish; also fiber and seed
BLD	Broad-leaf Drug	<i>Cannabis indica</i> ssp. <i>afghanica</i>	Northern Afghanistan and Pakistan	Cultivated and feral?	Drugs - hashish

REVISED TAXONOMY PROPOSED BY CLARKE AND MERLIN classifies cannabis plants as Narrow-leaf hemp, Broad-leaf hemp, Narrow-leaf drug and Broad-leaf drug types.



EARLY RANGES OF FOUR BASIC CANNABIS PLANT TYPES are shown on map by Matt Barbee (from “Cannabis: Evolution and Ethnobotany” by Robert C. Clarke and Mark Merlin).