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NOT YOUR FAMILY FARM
APICULTURE IN SOUTH-CENTRAL MONTANA

MILES LEWIS

The rolling prairies and sheltering mountain ranges of the Upper Musselshell Valley in Montana are nearly perfect for cattle and sheep grazing. Some areas, more topographically similar to the Great Plains than to the mountainous West, are (at least in wet years) highly conducive to growing alfalfa or wheat. Overall, the pastoral setting calls to mind images of weathered cowboys, grizzled shepherders, and stoic farmers. However, closer inquiry into the region’s agriculture reveals that cattle and wheat are by no means the only product being harvested from the land. Found buzzing around flowering foliage or swarming the rearing hindquarters of a Hereford (which has mistaken another life-form’s home for a saltlick) is *Apis mellifera*: the honeybee.

For having such a short history within North America, this small insect has had an unprecedented impact on American agriculture and on localized ecosystems and economies. As a form of sustainable agriculture, apiculture extends into the realms of rural economies, farm culture, and society in the Great Plains. Because it enhances crops and small-town economies and plays a significant role in chain migration, beekeeping is an important agricultural institution. Honey houses and apiaries within central Montana are certainly not your typical family farm.

The European honeybee entered central Montana in the early to mid-1800s. The insect first encountered humankind within the territory when American Indian tribes adapted the insect and its products, as did all Great Plains Indians, for their own use. *Apis mellifera* then came into contact with the white settlers who flocked to the region in the late
1870s. After a period of relative freedom from domestic agriculture, the honeybee in central Montana entered into a commercial lifestyle with beekeepers. At that time, around the early 1940s, beekeepers never anticipated the impact the bee would have on future generations of agricultural producers, local economies, social matters, and technological innovations.

This article examines the evolving history of apiculture, primarily focusing on the Upper Musselshell Valley of central Montana, and illustrates the extensive social, economic, and technological impact the honeybee has had in the Great Plains outside traditional agricultural production.

**APIS MELLIFERA IN NORTH AMERICA**

Apiculture is not a new form of agriculture in America. In 1622 English colonists landing in Virginia brought honeybees across the Atlantic. Russians introduced *Apis mellifera* to Alaska in 1809 and California in 1830. Americans traveling the ocean carried the insects across the Isthmus of Panama to the West Coast of North America. Feral bees reached places in Appalachia and Washington State due to natural swarming tendencies (Fig. 1). *Apis mellifera* tends to swarm in the spring or early summer when a new queen is reared by worker bees, prompting the old queen, and about half the hive’s population, to search for a new location in which to reside (Fig. 2). Some almost certainly traveled to the interior of North America with homesteaders in box hives (at that time the continent lacked skilled workers to construct traditional skeps). Despite this, in the words of historian Anthony J. Amato, “Everywhere, the bee preceded agriculture.” Native Americans of the interior United States called the honeybee “white man’s flies,” or “English flies,” and their interaction with *Apis mellifera* was one “of mixed feelings.” However, the bee did find its way into Native American lifeways in the forms of foodstuff, for its medicinal properties, and in symbolism.

Washington Irving, in 1830s Oklahoma, witnessed fall honeycomb “devoured upon the spot. Every stark bee-hunter was to be seen with a rich morsel in his hand, dripping about his fingers, and disappearing as rapidly as a cream-tart before the appetite of a schoolboy.” Friederich Bodenheimer, in *Insects as Human Food*, also noted that the majority of Native Americans consuming honey did so in its combed form—pupae, larva, pollen, and all. Not only did this satisfy a sweet tooth, it also often provided an additional source of protein. Honey served as a natural sweetener and treat for Native Americans, who quickly noticed its healing properties. Their medicinal use of
honey probably stems from the fact that when the substance coated their hands, peppered with Apis mellifera stingers after removing it from a hive, they noticed it lessened pain. As a result, honey became a natural salve. One band of Native Americans of the Plains, the Penateka Comanche (meaning “honeyeater” in that language), took their name from the insect’s creation. Additionally, Indian tales use the bee in myths. The Cherokee, though not a Plains Indian tribe, tell the story of how the bee attained its stinger by eating briar bushes, given to them by the flower people, to defend themselves from honey-greedy segments of native culture. Another legend, “The Raccoon and the Bee-Tree,” used the example of a raccoon’s insatiability for honey, and the aftermath of its search, as a warning about being too greedy about a good thing. Despite their appearance in Native American diets, stories, and healing lore, the honeybee was generally dreaded, not for its sting but for the fact that the presence of Apis mellifera meant that white settlers were not far behind. Accordingly, Irving also wrote that “countless swarms of Bees have overspread the far West within but a moderate number of years. The Indians consider them the harbinger of the white man, as the buffalo is to the red man; and say that, in proportion as the bee advances the Indian and the buffalo retire.”

Apis mellifera in the Upper Musselshell Valley of Montana

Eventually, the honeybee made its way to the Upper Musselshell Valley of central Montana (Fig. 3). However, native flowering flora, vital to the survival of Apis, was scarce in the valley. The honeybee could survive in the Upper Musselshell if conditions such as viable forms of winter hives or abundant blossoming plants were within their three-mile flight range. Historically, before the advent of mass crop farming, the Upper Musselshell Valley was not conducive to en masse wild Apis mellifera, though they could, and did, reside there. At any rate, wild honeybees were present in the Upper Musselshell Valley of Montana when homesteaders arrived by the hundreds in the late 1890s and early twentieth century.

Many regional pioneer and homesteader children recall their parents hunting wild beehives along the Musselshell, and many local reminiscences and oral histories reflect on the
honeybee. Such searches, although often proving to be a painful experience, had benefits for settlers, and the presence of honeybees certainly had an effect upon Anglo settlers. First, and perhaps most important, is that wild *Apis mellifera* often served to pollinate crops. Second, as a natural sweetener, honey often proved a delightful treat for children and a substitute for costly or scarce sugar. We can speculate that the existence of *Apis mellifera* within the valley must have had a comforting value, as they were a product of European civilization and a symbol that Anglo culture could thrive in the midst of the Great Plains and its inherent physical and environmental threats. Although bees predated settlers in the valley, they quickly came under the yoke of humankind.3

**COMMERCIALIZING *APIS MELLIFERA***

Before the 1800s, honey was largely a localized commodity, as a minority of farmers kept bees for their own usage. The first known commercial beekeeper was most likely Moses Quinby, living in New York State during the mid-1860s. Due to Quinby's innovations (such as movable comb), commercial beekeeping started to spread, probably encouraged by his statement that, "In particularly favorable seasons, hives will yield a profit of one or two hundred percent—in others, they hardly make a return for the trouble." A further boost came with the advent of more advanced hand spinners used to extract honey from the comb. However, since the nation faced a dearth of good roads, combined with the limited range of shipping honey via horse and wagon, commercial beekeeping remained largely localized.

By 1918, due to the Good Roads Movement and the increase in cheap automobiles, beekeepers started to expand their shipping base at a fast pace. This also allowed for better management of *Apis mellifera*, increasing the estimated number of commercial beekeepers to a little over 1,000, keeping nearly 1.5 million colonies of bees. What quickly followed, during the 1920s, was the advent of the specialized honey plant to package and ship honey great distances without spoilage. The 1930s were certainly hard on American apiarists, because commodities such as bulk honey were often passed over by destitute consumers.

The first commercialized beekeeping operation in the Upper Musselshell began in the 1940s with Howard Foster, and was located primarily out of Lewistown. Foster and his sons maintained the majority of the valley's formal *Apis mellifera* hives. However, the long trek to beeyards located in the Upper Musselshell prompted Foster to sell his southern operations to Lawrence Budge of Two Dot in the 1950s. Budge, originally from Pleasantville, Utah, was the product of a beekeeping family. Using a converted automotive garage as a honey house, extracting plant, and cannery, Budge and his wife, Cheryl, began with 1,300 hives. They employed two to three people seasonally and one full-time apiarist. Their hives averaged roughly 140 pounds of honey each.

Although most years, according to Budge, "was typical farming—Cheryl (a school teacher) taught (school) to help keep the bee business going." Then the family had a life-changing bumper crop in 1963. With only 1,200 colonies that year, Budge filled 5,645 sixty-three-pound cans, amounting to 355,635 pounds, with prime clover honey. The crop, selling at about eleven cents a pound, netted the family over $39,000 that year. (In terms of present-day value, the crop would have been worth over a quarter-million dollars.) Such a fortuitous event prompted Budge to purchase land and construct a new honey house in the nearby town of Harlowton. Budge was one of a handful of beekeepers who helped create Montana state territorial statutes concerning the proximity of hives. Together, a conglomeration of Montana apiarists advocated for registration laws and a three-mile radius (which is *Apis mellifera*'s natural flight range from its specific hive) between commercial beeyards. Such legal limitations keep geographical competition to a minimum and aid in keeping diseased colonies separated from healthy bees. In 1985 Budge retired and sold his apiary to a California-based company.4

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A CONTEMPORARY LOOK AT COMMERCIALIZED APIS MELLIFERA

Steve Park of Steve E. Park Apiaries, Inc., based out of Palo Cedro, California, comes from humble beginnings and family tradition. At the age of eight, Homer Park started keeping bees as a hobby. Often, the young Park traveled on horseback (with the equine’s ears stuffed with cotton so it would not spook) to collect swarmed bees in a burlap sack. By 1943 he turned his full attention to commercial beekeeping and founded Homer Park Apiaries. His hard work and seemingly intuitive grasp of Apis mellifera led Homer to breed the popular and hardy Park Italian honeybee, which is well suited for honey production and pollination. In 1968 Park sold a portion of his commercial operations to his son Steve.5

Steve Park started his apiary primarily to export package bees and queens to Canada. When the Canadian market turned sour for Park because of currency exchange rates, he branched out into other geographic areas for several reasons. First, urban sprawl and competing business made branching out an attractive option. Second, he had several long-time employees interested in becoming partners. One such staff member, Clay Going, wanted to move somewhere in the interior West, being particularly interested in Wyoming, Idaho, or Montana. Third, Park was already acquainted with central Montana from an uncle’s apiary in White Sulphur Springs, located along the fringe of the Upper Musselshell Valley. His early familiarity with the region and its potential to create large honey crops led Park to search for a regional apiary. He found his opportunity when Budge decided to sell his apiary in Harlowton.6

Park keeps bees seasonally within the valley because of large winter hive losses and because of pollination opportunities that do not coincide with honey season. After wintering bees in the almond groves of California and the apple farms of Washington State, Park ships his Apis mellifera to central Montana in late May or early June. Such a practice gives his bees a distinct advantage. The bees, already bulked up and healthy from pollination duties, are in a better position to weather Montana’s spring storms. Also, they generally have the hefty population necessary to produce a large honey flow that capitalizes on honey production when they arrive in Montana (Fig. 4). The company generally arrives with about 10,000 hives, split between the Upper Musselshell and the Fairview-Wibaux area of Montana. The Upper Musselshell contains over 150 beeyards registered to Steve E. Park Apiaries. Despite the benefit of such large numbers of bees, the fickle weather of central Montana often gives Park a “heck of a time getting a good crop.” Prices are good, but climate conditions can inhibit getting a solid crop. That, according to Park, “sounds like farming to me!” A graph of the apiaries’ honey production in Montana clearly illustrates the differences between good years and bad (Fig. 5).7

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Park's Harlowton apiary is a large contributor to the regional economy, stressing that “the big thing is the wages, the fuel, the parts, tires and all the other stuff.” The company follows the belief that most goods and services should be procured locally, so the majority of its non-specialized equipment, from diesel fuel to nails, is purchased from Harlowton vendors. Secondly, each hive is subject to a four- to five-cent hive tax in each county in which Park keeps bees, further contributing to regional coffers and, as a result, civic services. Last, the apiary seasonally employs between fifteen and fifty people (of which most are seasonal laborers in extracting plants) between Harlowton, Wibaux-Fairview, and Palo Cedro. His Upper Musselshell Valley payroll averages $190,000 per year; the Upper Musselshell location, with up to twenty-four employees, earns about $20,000 per month in the summer. At one time in the 1990s, his Montana interests and registered beeyards encompassed regions around White Sulphur Springs, Lewistown, Harlowton, Townsend, and Hardin, and the extraction plant ran day and evening shifts. Presently, after some adjustments and sales, Park and his resident manager, Dean Thompson, concentrate their efforts primarily within the Upper Musselshell Valley and around the Fairview-Wibaux in eastern Montana.8

Despite such large numbers of employees, there are always problems concerning labor. Beekeeping is an extremely labor-intensive endeavor. Although part of the process is automated, the majority of the work is still done by hand. The problem of labor is solved from two sources. Often seasonal employees come in the form of high school students who are willing to work long hours under difficult conditions for minimum wage. The other solution, a much more permanent one, comes from migrant labor. According to Park, “If it wasn’t for them and their willingness to come up here,” his labor problems would be much larger.

Compared to other regions of the Great Plains, central Montana's immigration trends have remained stable and mostly Anglo. For the most part, immigrants to the Upper Musselshell tended to be from Nordic regions, with the heaviest settlement having been Norwegians, Swedes, and Finns in the late 1800s and early 1900s. A small group of Japanese settled in the region to work for the Milwaukee Railroad in the 1920s, but they eventually left in search of better economic opportunities when the railroad went bankrupt in the late 1900s. Blacks and Hispanics rarely came to the region. Moravian Hutterites began settling in the region throughout the late 1940s and 1950s. Hispanics eventually found their way to the valley, not under the auspices of the Bracero Program for the importation of temporary workers, but under the sway of Apis mellifera. Although the majority of Hispanics within the Upper Musselshell only live there for several months of the year, some have settled there permanently or wish to do so later in their life.

Most migrant workers employed by Park come from Guadalajara in Mexico, and their immigration has several profound effects. First, chain migration is strongly evident as extended family members from Mexico often seek work permits to join relatives working in the United States. Keeping with migration trends, the majority of Park's migrant laborers, even those with spouses and children in the United States, send money to relatives still living in Mexico. Many of the company's workers, despite having become naturalized citizens and having children who claim dual citizenship, return to Mexico after becoming prosperous in Montana or California. About half of the apiaries' employees are from Mexico.9 This is in keeping with some migration trends seen among Hispanics in the Great Plains, primarily the trend of wide movement throughout the region. However, unlike the industries employing the betabeleros (migrant beet harvesters) or traqueros (migrant rail laborers) of the 1920s and 1930s, or the meatpacking industries of the lower Plains, the entire beekeeping industry of the Plains is not dependent upon migrant labor. Additionally, beekeeping is highly specialized
labor, so migrants are not confined to unskilled portions of manual labor.

As a cultural institution within agriculture, apiaries illustrate the transitory existence of varying farming enterprises in the Great Plains that experience economic, social, and environmental changes. As historian Tom Isern claims, the Great Plains has “lots of open country, and therefore the potential for new frontiers” within agriculture.\textsuperscript{10} \textit{Apis mellifera} could certainly provide one such frontier due to the versatile nature of not only the bee itself but the various cultural and consumer products they present.

\textbf{\textit{Apis mellifera} and the Harvest}

The Upper Musselshell provides prime ground, at least in wet years, for producing a wide variety of products made by \textit{Apis mellifera} and harvested by the apiarist. First and foremost is honey. The variegated soils and crops of the region yield a strong alfalfa, sweet clover, or canola honey that can be so pure it ranges in color from nearly a clear white to a pale yellow. This highest commercial-grade honey is generally sold to small canneries or bulk wholesalers. The health food craze that started in the early 1980s makes it highly desirable as an all-natural, unrefined replacement for cane sugar. Some portions of the valley, overrun by pervasive weeds like leafy spurge or Russian thistle, create a dark honey ranging in color from deep brown to light green that contains a slight odor reminiscent of the particular weed from which it was created. Such low-grade honey is not wasted but is sold as “ingredient honey” to cereal or yogurt companies, which use it as a natural sweetener in their products. Honey creates a secondary product: beeswax. Pure wax, smelted into blocks, is sold to companies to make consumables like candles and lip balm. Other harvestable products include bee-collected pollen, propolis, and royal jelly. Packed into capsule form, pollen is often used as a natural way to boost the human body’s immunity to allergens. Propolis, selling from $18 to $20 a pound, has been used for over 2,000 years as a “cure-all.” Its chemical structure makes it good at fighting a myriad of bacterial infections, with uses ranging from general wound healing to oral surgery measures. Royal jelly is often packaged and sold as a nutritional supplement because it contains amino acids and vitamin B. Much like cattle and sheep provide secondary or tertiary consumer goods (such as tallow or wool) aside from their main product, meat production, \textit{Apis mellifera} creates a wider array of goods that are much more easily capitalized upon by the producer.

As the equipment and methods of traditional agriculture have changed, so have the tools and machinery of the apiarist. Shortly after round-balers and centerline pivot irrigation rigs started to appear en masse for farming, beekeepers did away with the boom truck for moving bees between their winter grounds and their summer yards (Figs. 6–8). Palletizing hives into groups of four and using mobile swinger forklifts have greatly changed the industry requirements for terrain for the placement of colonies. Innovations have also occurred in the extraction plant. Belt-driven honey spinners and heat exchangers have allowed producers to process honey crops at a much higher rate. Nevertheless, some tasks of the trade have remained fairly labor intense. Apiarists work the bees and stack supers (the removable system of comb housed in a box and placed on top of a colony) by hand, and the extractor still loads and unloads extracting machines manually (Fig. 9). Like other agriculturists, the beekeeper also faces problems from abroad.

\textbf{The World Market, Problems of Industry, and Future Innovations}

One change in the modern era is the global marketplace. Honey prices in the 1990s averaged fifty cents a pound; by 2004 that figure had tripled to $1.50. The price increase was due in large part to antidumping suits filed by American beekeepers against China and Argentina. In the 1990s foreign countries such as the People’s Republic of China (accounting for 60 percent of honey imports, equating to 77,000 pounds a year by the early 1990s) significantly undercut
FIG. 6. Boom truck towing swinger forklift. Photo courtesy of Faron Thompson.

FIG. 7. Swinger forklift carrying palletized hives. Photo courtesy of Faron Thompson.

FIG. 8. Scattered beeyard near Lavina, Montana. Photo courtesy of Faron Thompson.

FIG. 9. Working hives by hand. Note the system of movable comb. Photo courtesy of Faron Thompson.

honey prices by bringing their honey crop to the United States in bulk and selling it well below cost. After massive antidumping suits, both China and Argentina (which followed the Chinese dumping example in the 1990s) now have to pay a duty that reflects the American cost of production. Although this has created some semblance of parity for American apiarists, Chinese beekeepers still try to get around the tariff by claiming their products are from places like Vietnam or Malaysia. The global market is a tough arena for regional beekeepers. Large-scale operations (like that of Parks) can adapt quickly to market changes, while small family-oriented apiaries cannot and have started to disappear. The family farmer or cattle rancher can sympathize with beekeepers in this situation, as it has been happening to them for decades within their small niche of agriculture.

Local matters are much different for commercial beekeepers in the Upper Musselshell Valley, and in Montana, which can probably be considered one of the “breadbaskets” of American
honey production. There are 6,500 registered beeyards within Montana (over 175,000 colonies), with well over 150 in the Upper Musselshell region alone. Their presence benefits not only the beekeeper but also local farmers, who reap the benefits of pollination and rent honey. *Apis mellifera*, like the livestock and crops of traditional ranchers and farmers, is subject to problems that can significantly harm crop production, particularly molds, fungus, and various forms of mites. A honey crop can be devastated by tracheal or varroa mites, the small hive beetle, fungal spores that cause American foulbrood disease, or bacteria that cause chalkbrood disease. Although chemical measures such as Apistan strips, miticides, or Terramycin help protect bees, apiculturists and academic scientists are trying to breed a more resistant strain of bees. For example, Park is crossbreeding the Park Italian with a hardier, more disease-resistant breed of Russian bees. While the Russian strain of *Apis mellifera* is more aggressive than the Italian breed and darker in color, after about a decade of breeding, a tougher bee will emerge with some inherent resistance to mites, molds, and fungi. Such breeding programs help keep honey purer, as approved chemicals like Apistan or Terramycin may be able to be removed from the process. New challenges await apiarists like Park, as the formation colony collapse disorder (CCD) and other natural problems occur. Just as bovine spongiform encephalopathy (BSE, or mad-cow disease) affected cattle ranchers, CCD has had a profound influence upon the bee industry.

Other developments in the future of Montana apiculture are not so dour. Professor Jerry Bromenshenk of the University of Montana helped found Bee Alert Technology, Inc., in 1995. Bromenshenk and his company “want to revolutionize beekeeping” based on the fact that the honeybee can detect, and be trained to find, chemical agents. Additionally, bees can be used to locate landmines, a function that could prove extremely beneficial to countries like Cambodia or Myanmar. The potential for de-mining contracts is nearly a limitless business proposition, as are research and development grants from the military for practical applications of bees in homeland defense. Other innovations, such as the HiveTracker™, HiveMarker™, and HiveSentry™ that Bromenshenk and his colleagues have helped to develop, affect all apiculture. Their functions include tracking bees entering and exiting a hive (monitoring things like hive health and potential honey flow), notifying owners when a hive or pallet has been moved, and locating and distinctively marking an owner’s hive (much as a cattle brand is used).13

Although technological improvements to apiculture have broadened the scope of the industry and revolutionary uses of *Apis mellifera* have been advanced by entomologists, the insect’s main use has been, and probably will remain, significantly an agricultural endeavor, one that often mimics the trends of traditional agriculture (such as sheep or cattle) in terms of world issues, technological innovations, and labor. Apiculture in central Montana has a long history beginning with the wild swarms that preceded white settlement. The state now ranks in the top ten honey-producing regions in the United States. From pioneer honey hunting to large commercial operations, *Apis mellifera* has long called the Upper Musselshell home. As a form of agriculture, it has followed the trends of traditional farming and ranching, reflecting the use of mechanization and chemicals to bolster crops. Further parallels can be seen in technology. Farming saw the advent of the big round-baler, which significantly altered the farming lifestyle, just as apiculture implemented all-terrain swinger forklifts to adapt to new challenges. Aside from modern workplace and production innovation, the local bee farms, especially those like Steve E. Park Apiaries, Inc., have long-term regional, social, and economic effects. They provide significant employment and enhance communities through being a very active economic contributor. The various breeds of *Apis mellifera* have certainly played a larger role in modern human agriculture, economics, and society than their diminutive status could ever imply. They are certainly not your typical family farm endeavor.
NOTES


6. Steven Park, interview by author, July 15, 2003, Harlowton, MT.

7. Steven Park interview.

8. Dean Thompson, interview by author, July 11, 2003, Harlowton, MT; Steven Park interview.

9. Steven Park interview; Dean Thompson interview.


12. Landowners are compensated for having bees located on their land with several pounds of honey instead of cash rent.
