BEE NEWS & VIEWS

The Mississippi Beekeepers Association Newsletter

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July-August 2014

The MBA Annual Convention

Our annual convention will be held at the Neshoba Coliseum at 12000 HWY 15 N, Philadelphia, MS 39350 (phone: 601-656-5775) on Friday-Saturday (October 31 – November 1, 2014). The Thompsons (Johnny, Kenneth and Joan) became the local program organizers after Derwin Thrash had trouble finding a suitable venue in central Mississippi.

As usual, there will be an annual business meeting on the Thursday (October 30) before the convention. This meeting will be at the Dancing Rabbit Inn (13240 HWY 16 W, Choctaw, MS 39350; phone 601-389-6600). Johnny has blocked off about 30 rooms for Thursday night, and this is also the hotel reserved for attendees of the convention staying over on Friday night.

The room charge is $69 + tax for Thursday night and $89 + tax for Friday night. To receive the convention rate, use the following room block code when you make your reservations: DGBEE14. The phone number for the reservation desk is 1-866-44-PEARL. **The deadline for making your reservations using the group rate is October 9, 2014.** Check-in time is 4:00 PM; check-out is 11:00 AM.

Speakers will include Blake Shook, Dr. Jennifer Tsuruda and Phil Craft.

Pine Belt Beekeepers form a New Club

The second meeting of the Pine Belt Beekeepers occurred on August 28, 2014 at the Lamar County Extension office in Purvis, MS. Guest speakers included Mr. John Mosby, Mr. D. L. Wesley and Dr. Jeff Harris. John Mosby is the owner of Southern States Bee Supply Company in Taylorsville, MS. He discussed and showed the basic hive components (bottom boards, hive bodies, lids, feeders, etc.). As part of his presentation, he offered a variety of alternatives (screened vs. solid bottom boards, medium vs. deep hive bodies, 8-frame vs. standard 10-frame hives, etc.) and explained the benefits of each option. Jeff Harris briefly discussed the importance of managing varroa mites and urged all new beekeepers to learn and understand the biology of this most serious of hive diseases. D. L. Wesley commented on various aspects of beekeeping, but he emphasized marketing of honey as an important activity. He asked that beekeepers not sell their honey for too low of a price, and he wanted them to understand the true value of their efforts to produce honey. As usual, he told many yarns about beekeeping that kept many of us entertained throughout the evening.

If you are interested in attending future meetings of this group, please phone Mr. Ross Overstreet (Lamar County Extension Agent) at 601.794.3910, or email him at rosso@ext.msstate.edu for more information.

Annual Field Day at the USDA Honey Bee Lab in Baton Rouge

By Margaret Prell

The USDA Honey Bee Breeding, Genetics and Physiology Laboratory and the Louisiana State Beekeepers Association will hold the 18th Annual Field Day on Saturday, October 11, 2014. The event will be held at the laboratory, located at 1157 Ben Hur Rd. This is near the intersection of Nicholson Drive (Hwy 30) and Brightside Dr., which is about two miles south of the LSU football stadium.

Gates will open at 9:30 a.m.; activities are scheduled from 10:00 a.m. to 3:30 p.m. A nonrefundable pre-registration fee of $30.00 is required for attendees 12 years of age and above. Children eleven and under must stay with their parents at all times. You must pre-register by October 1, 2014. You may register

on-line at labeekeepers.org and pay through PayPal or credit card or you may mail your registration form that is located on the labeekeepers.org web site and your check payable to the Louisiana Beekeepers Association to: David Ferguson, P.O. Box 716, Brusly, LA 70719. If you do not pre-register by October 1, 2014, the cost will be $35.00 per person.

The registration fee covers expenses including coffee, pastries and a great-catered lunch that includes Bar B Q Chicken Leg Quarters, Smoked Sausage, Dirty Rice, Bar B Q Beans, and Garden Salad with choice of 4 Dressings, Fresh Baked Honey Wheat Rolls, Honey Bee Cake and Coke Products.

The Field Day will include courses for beginners and more experienced beekeepers as well as workshops for those interested in a variety of topics. The beginning beekeeper course will teach those who do not yet own bees how to get started and manage a few colonies. Topics will include equipment needs for the beginner, nectar producing plants, maintenance of colonies, pests, safety and etiquette in beekeeping, and hands on training in an active colony. The intermediate beekeeping course was a hit last year and it will be offered again with a variety of topics focused on the beekeeper with a moderate amount of experience that is now ready to take it to the next level. Topics will include anticipating equipment needs throughout a season, pest management, honey processing, and swarm catching. There will be a variety of focused workshops for those not attending the courses (typically the more advanced beekeepers), i.e., queen rearing, instrumental insemination, small hive beetle control, good honey plants and artificial nutrition sources. These workshops will represent both the USDA-ARS Bee Lab's research and beekeeper experiences. At the end of the day, the intermediate and advanced groups will come together over active colonies. Here they will have the opportunity to discuss a variety of topics and ask laboratory personnel and experienced beekeepers questions while gaining some hands-on experience in an open hive.

For additional information please contact Dr. Lanie Bourgeois (225-767-9299), Sandra Hineman (225-767-9280) or Joe Sanroma (318-346-2805).

Musings from Mr. Dwight L. Wesley

By Jeff Harris

I don't like to gossip; so pay attention the first time you read my summaries of tales that Mr. D. L. told me the other day. Those who know him, can attest to Mr. D. L.'s shyness, and it is quite understandable that I write this little summary for him. I may have embellished things a bit….

His first tale involves an attempt to hive stray bees that were left when a large commercial beekeeper trucked bees from Mississippi to Michigan. Mr. Dwight Gunter had moved several truckloads of bees from his staging area in Lumberton, MS earlier this spring. We do not know the total number of colonies moved, but it was probably several thousand.

For those who don't know, there are several commercial beekeepers who winter bees in Mississippi starting in November each year. Their bees grow and fatten on our wonderfully early nectar flows in southern Mississippi, and these beekeepers can split colonies before moving them back to the northern states for honey production during the summer. Most of these guys have left Mississippi by mid-May each year.

In a typical staging area, thousands upon thousands of bees stray from hives as they are being fork-lifted onto the 18-wheelers. These lost bees accumulate on tree limbs near the loading zone, and most of the migratory beekeepers simply leave the bees hanging in the trees.

Our hero, Mr. D. L., chanced upon the Gunter operation just after the last load of bees headed northward. To his amazement, there was a tree that had a mass of bees that weighed over 50 lbs. He had to have those bees – he simply dreamed of capturing them and making anywhere from 10-20 splits from the collective mass of bees.

However, Dwight Gunter warned that those bees were older foragers and that they would be difficult to hive successfully. Undeterred, Mr. D. L. shook the bees into hive bodies to which he had added combs and brood. He waited on them to settle. Feeling good about capturing the large mass of bees, he took a lunch break to let them settle down before

he attempted loading them onto his truck for the relatively short drive to Foxworth, MS.

50 lbs. of honey bees hanging in tree behind the colonies.

Upon his return, Mr. D. L. was dismayed to find the large mass of bees were back in the trees. They simply would not stay in the hive bodies. Go figure? I guess it pays to listen to the commercial guys!

Our second adventure with Mr. D. L. involves everyone's favorite hive pest, the Small Hive Beetle (SHB). Mr. D. L. detests these vermin. One day he discovered that one of his colonies had the obvious signs of a severe infestation by SHB. A brown ooze leaked out of the hive entrance, and the maggot-like larvae of the beetle were writhing among the debris inside the hive that once housed combs with bees.

Mr. D. L. was so disgusted with the sight that he quickly thought of a way to vent out his anger and frustration. Yes, you guessed it – he sought revenge with household bleach!

Mr. D. L. combined bleach and water in the large plastic tank shown in the photo. He was so furious at the SHB that he really does not remember the recipe of his concoction, but after creating the disinfecting bath, he lowered the ENTIRE hive into the vat and left it for a day or so.

When he returned, the entire surface of the vat was covered with a floating mass of dead SHB larvae that was several inches thick. Pure elation. Just seeing those dead larvae made our hero feel better. Another pleasant surprise was what had happened to the combs. The disgusting brown ooze was dissolved, and the brown wax of the combs had bleached white. Mr. D. L. rinsed the combs with water, air dried them and re-used them in his colonies. He highly recommends the technique for cleaning up after the SHB – if nothing else it will do you some good just to see thousands of dead larvae killed by bleach.

The tank of bleach water showing the layer of SHB larvae floating on the surface.

Becoming a Beekeeper in Mississippi

By Jeff Harris

Beekeeping has grown in popularity across the U.S. over the last decade or so. The increased popularity stems from an awareness of Colony Collapse Disorder (CCD), which describes some episodes of high colony losses in the commercial beekeeping industry beginning in 2006. Although not fully understood, CCD appears to be caused by multiple stressors acting in concert on colonies of bees that are used in commercial pollination of crops. These stressors include parasitic mites, viruses, malnutrition, pesticides and fungal and bacterial diseases. No single stressor correlates perfectly with all of the deaths, but the parasitic mites and the viruses that they vector to bees are viewed by scientists as the most dangerous single risk. While scientists continue to decipher the problem, many citizens want to participate in beekeeping as a way to reconnect with nature and to help grow colonies of honey bees that are so important to the pollination of crops.

Dramatically higher attendance at beginning beekeeper workshops is evidence for the increased interest in beekeeping. There are meeting venues

that 15 years ago would have only 20-25 people attending, but in the last few years attendance has sky-rocketed to hundreds per event. Recently, I participated in two spring beekeeping meetings with 350 and 550 attendees, and most of these people were just beginning the hobby and had no bees of their own yet. It has been a truly astounding and unprecedented time for those of us who have taught beekeeping to people for decades.

The renewed vigor of beekeeping craft flourishes in Mississippi too. The climate here is ideal for growing bees, and there has been a long history of commercial queen and package bee production here. As in other southern states, most of the beekeepers in Mississippi are small-scale or hobbyists. However, we do have a few large commercial operations that specialize in honey production. Typically, these operations manage 4,000 – 6,000 colonies that will average nearly 100 lbs. per colony in annual honey yield. There are also at least 20 family businesses that supply bees to other beekeepers. These people sell queens and worker bees that are needed to start a colony of bees. Additionally, there are several beekeepers who rent their bees to pollinate blueberries and melons or cucurbits. Mississippi also hosts companies that supply beekeeping equipment.

So, you want to become a beekeeper! What should you do first? Your best approach is to read as much about beekeeping basics as you can BEFORE buying equipment and ordering your bees. There are endless popularized books on the subject, and the *American Bee Journal* and *Bee Culture* are beekeeping magazines that are published monthly. Both journals are filled with articles and features about every aspect of beekeeping. Another good way to learn is to join a local bee club and attend regular meetings and outdoor activities. Quite often these clubs invite knowledgeable speakers to discuss a particular beekeeping subject, and some clubs actually have colonies of bees that are used to help teach the newest members on the various aspects of beekeeping. If you join a club, don't be bashful. Ask a lot of questions. Beekeepers love to share the craft, and you will benefit more by initiating the conversation.

The Mississippi Beekeepers Association (MBA) is a state-level organization that serves the beekeepers here. They conduct an annual convention during the end of October or early November. Quite often the MBA invites notable speakers with national or international reputations to give presentations on important beekeeping topics at the convention. There is always a session for beginning beekeepers as well.

The MBA also hosts beekeeping workshops throughout the year in different cities or towns. As the MSU Extension expert in beekeeping, I work closely with the MBA to provide the workshops and good speakers for the convention. If you can find no one else, you can always consult me with your beekeeping issues and concerns. My office phone is (662) 325-2976, and my email is JHarris@ext.msstate.edu. I am currently developing my beekeeping website that will be available through MSUCares and the MSU extension service. It should be up and running soon. Until I can post things to this website, I can supply you lists of (1) contacts for all of the beekeeping clubs in Mississippi and the MBA, (2) suppliers of queens and bees available from Mississippi, (3) beekeeping supply companies from throughout the U.S., and (4) pamphlets about how to start in beekeeping. Just send me an email, and I will respond with the desired information.

Note: The website is now active, http://blogs.msucares.com/honeybees/

Be wary of the vast array of beekeeping videos offered by internet sources like You Tube. Just about anyone can make a video and appear to be an expert. Perhaps the majority of beekeeping videos relay good information. However, I have seen misinformation delivered handsomely via some well-meaning newbies in some of these videos. It is tough for most new beekeepers to filter the good information from the bad – so try to stick with books, magazines and people known to be good beekeepers as your primary resources.

Another point that new beekeepers should understand: the beekeepers that produce queens and worker bees for starting colonies must grow those bees after the winter. Therefore, obtaining bees to start colonies has seasonal constraints. Colonies emerging from the winter may only have 20,000 – 25,000 bees. These colonies can explode to >60,000 bees in a relatively short period beginning in early spring. The timing of growth depends on weather,

which directly impacts the availability of flowers that bees need for food. Bees obtain nectar to produce honey, which is the major energy source for the colony of bees. They also obtain pollen from flowers, and the pollen provides amino acids, fatty acids and vitamins that are key factors into growing bees. A colony of bees cannot grow more bees without access to lots of incoming pollen.

I emphasize the biology of bees to make the point that you cannot call a beekeeper in March and expect him or her to supply you with the bees you need to start your colony by April. It is simply too unrealistic to expect that kind of turnaround. In fact, my advice is that you order the bees you need to start your colonies during the previous autumn or winter. Your name will be placed on a priority list. This is the way many bee suppliers operate. If you wait to call in March, there are probably tens or hundreds of orders in front of you. Typically, if you wait to order until the spring of the year in which you need the bees, you will not get any bees – or worse – you will get them too late in the year for them to grow well. It is best to start new colonies of bees in April and early May in our area.

Finally, without getting into the details of starting a colony of bees, I wanted to emphasize that keeping bees is more than just putting a hive of bees in your yard and walking away. A beekeeper must be as involved with his or her bees as an owner of other livestock like horses and cattle. Good beekeepers learn the biology of the honey bee, and they learn how to manage their hives for maximal honey production while preventing swarming. Good beekeepers learn how to prepare their colonies for winter, ensuring that the bees will not starve to death before the flowers begin to bloom again in the following spring. Good beekeepers learn how to protect their bees from weather and how to locate their hives to get the most nutrition from the landscape. Most importantly, good beekeepers learn how to effectively manage diseases and parasites that threaten their colonies. All of this knowledge comes with time and enduring some failures.

A new beekeeper can expect to lose colonies from some kind of mismanagement. The key is to learn from the mistakes and to keep trying. It sometimes takes years to muddle through all of the problems, but you will become a better beekeeper with experience. I have kept bees for more than 40 years, and I still lose colonies. Usually, this occurs when I get too busy and do not give adequate attention to my bees. In short, beekeeping is an interactive venture: the best beekeepers are those that understand that keeping a hive of bees requires dedication and attention to details of the hive's condition.

It sounds like a lot of work, and it is. However, the benefits are astounding. I could rattle off the benefits of honey bees to U.S. agriculture (> $19 billion value from honey bee pollination of our crops), but the pure joy of opening a bee colony and being in their mist is beyond words. The experience has many textures. The bees smell good, especially when on a honey flow. I opened a colony the other day to the wonderful smell of grape. I am not sure what flowers the bees were visiting (my co-worker thought it was probably kudzu flowers), but the perfumed odor of grape mixed with the smell of bees was pleasant. Of course, the taste of the honey is something good that most of us understand. There is also the warmth of the broodnest where the baby bees are raised. You can feel the warmth by placing your hands just above the combs. Then there are the sounds – so many thousands of bees buzzing as they fly in and out of the hive. Additionally, there is something magical about working with an animal that can hurt you with stings when you make mistakes. The trick is to keep your mistakes to a minimum. Good beekeepers learn how to do this with persistence and precious time.

The Gene Thief

By Jeff Harris

Pete Colby grew sick and tired of that big mouth spewing tall beekeeping tales. The mouth belonged to his nearest commercial beekeeping neighbor and rival – Rhett Hume. Although they grew up in the same small southern town and attended all grade levels of school together, they were not friends. Most of the animosity stemmed from a long history of competition among several generations of their beekeeping families. The market for queen and package bees was limited, and the two families struggled to secure a loyal customer base both locally and regionally.

Pete took great pride in selecting queen and drone parents with the same care and precision that his father had taught him. He and his father would

carefully evaluate potential breeder colonies over many months of one field season, and then select parents to overwinter. The surviving selected queens served as drone and queen sources in the subsequent spring when they replaced all or most of the queens in their operation of a few thousand colonies. They kept records for each potential breeder in a database, and parents were selected based on performance averages throughout the year. They also established minimum standards for all characteristics important to them. Failure to meet a minimum threshold for any one of the characteristics meant exclusion from the breeding pool.

The approaches to producing bee stock differed significantly between the two families. Pete's grandfather and father had always practiced at least a modest form of selective breeding for good honey production, good spring build up and low defense behavior. The Colbys especially emphasized the latter quality, and if "we cannot work our bees naked and not get stung, we won't sell them to you" was a proud family motto. The Hume family more-or-less sold unselected stock that survived well in their environment, but they did no formal selection for breeding parents. Incidentally, both families could sell every queen that they could produce.

The contrast in effort for selective breeding between the rivals would not have been an issue for Pete if Rhett did not brag so much about the fine quality of the Hume bees. He often contrasted the Hume bees to the Colby bees publicly, especially at a local café where the two families often crossed paths at breakfast or lunch. Rhett would say that "Hume bees are puppy dogs when compared to those Colby wolves". On several occasions Pete wanted to slug the braggart, but his father would restrain him and say, "Let him talk all he wants, Pete. We speak with the quality of what we sell. Don't let him bait you into a fight. It simply ain't worth it, son." Pete was also reminded by his father that some folks can only feel good about themselves by degrading someone else. Self-confident people, or those confident in the qualities of their own bees, would never need to slam us to increase sales.

The boasts from Rhett were especially irritating because they directly countered Pete's own experiences with the Hume bees. On many occasions, Pete had been called to help a new beekeeper in the local community with some kind of beekeeping issue. Often the bees owned by the new beekeeper were purchased from the Hume family, and the defense behavior of these bees would be best described as highly variable with some colonies stinging quite heavily during simple management maneuvers. To call them "puppy dogs" just seemed especially misleading from Pete's perspective. That's business though.

Although Pete admired the composure that his father (and grandfather) showed when confronted by the Hume clan, he could not understand how his father never seemed to anger. Pete often slipped into quiet periods filled with thoughts of passive aggressive retaliation whenever his father stifled his urge to punch Rhett. He never acted on these impulses, but he seemed to be reaching a climax of frustration that might one day spawn the worst behaviors from him. One day he would snap!

The final straw involved the Colby mating yards. Pete and his father practiced standard drone saturation techniques in order to control the matings of their queens as much as possible. They had two mating areas. The largest and most saturated occupied an area with a 5-mile radius immediately around their home. They had 25-30 apiaries scattered throughout, and all queens were requeened with daughters from breeder queens. These colonies provided drones needed to mate virgin queens from two mating yards that were placed more or less near the center of the circular area occupied by the other apiaries. Each mating yard consisted of 500 five-framed mating nucs at the height of the queen rearing season each year.

A smaller mating yard was more than 12 miles from their home on the other side of town. They had less control of the drone sources here, but they had established four drone source yards, each within 1.5 miles of the small mating yard that could house about 300 nucs. The four drone yards were located at the four compass points, and the mating yard was at the center of the compass. There were no other beekeepers in the immediate area; therefore, although they had a more limited number of their own drone sources here, they still felt like the mating control was good. However, this secondary mating yard was only used during the height of the queen

rearing season once the other two mating yards were full.

The Colbys were also keenly aware of the potential for inbreeding, so every few years they added a few queens from Italian stocks that were unrelated to their stock from several different suppliers on the west coast. Another precaution to offset inbreeding was to keep the minimum brood quality at a 90% capped pattern (*i.e.* no more that 10% cell misses in an area of capped brood) as a criterion for all queen breeders. This measure helped avoid the shotgun patterns expected of inbred bees.

Any time they brought in new stock, there was a potential for bringing in some poor qualities that could diminish the overall quality of their bees that had been gained from decades of selection. They screened all new queens carefully and tried to limit any drone production from them until they had been evaluated. The undesirable queens were usually pinched and replaced. Undesirables had colonies with runny bees, or they stung excessively, or exhibited chronic problems with chalkbrood (etc.).

The final straw for Pete involved the more distant mating yard. One day he noticed an apiary almost hidden along a tree line about 100 yards from the roadside and, more importantly, within 1.25 miles of one of the drone source yards. He pulled over along the side of the road, and using a binocular that he always kept in the car for bird watching, he could tell that the pallets of bees had the unmistakable look of Hume hives. Initially he thought that Rhett was simply trying to compete for honey yield.

The real reason occurred to him after checking all of the remaining drone source yards. He found another apiary within a short distance of one of these yards, and this apiary consisted of 200 mating nucs. They were not trying to compete for honey Pete realized; they were sponging off the qualities of our bees by mating queens near us.

Pete's head ached and his face reddened later as he told his father, "Rhett Hume is a nothing but a gene thief!" "He's stealing our qualities right under our noses. What are we going to do about it, Pop?" Pete continued.

Pete's father responded, "We are not going to do anything, son. It's a free country, and we do not own the land on which they have placed their bees. We simply have no recourse."

Pete said, "Are you kidding me? We work hard to produce high quality bees, and you're just going to give it away?"

"What would you have me do?" replied Pete's father.

Pete's anger neared a crescendo as he exclaimed, "We should move those bees ourselves or poison them!"

Pete's father gave him that paternal look of disappointment as he suggested that such actions were not only criminal but well below the moral standards that he had expected of his son. "We do not steal or kill other people's livestock. We are better people than that Pete," he retorted. Pete's body posture shifted from puffed up belligerence to one of head-lowering shame. Pete's father continued, "We are not even using that mating yard this year, and we probably won't use it anytime soon to avoid outcrossing our stock with the Hume bees. We will just have to make do. You will refrain from doing anything to harm the Hume bees, and I do not want you to tell Rhett that we know about their new apiaries."

Pete stormed away and festered. Several days passed, and he decided to poison the Hume bees. He would sneak in at night and deliver a powdered insecticide into the entrance of every colony at the two yards. Although dusting every hive increased the chance that he might get caught, he could not poison the bees with an open syrup feeder because of the possibility that his own bees might visit the poisoned syrup. He had decided that someone had to teach Rhett Hume a lesson. He thought that his father was just too nonchalant about the matter, and Pete knew that one day he would be running the family business. He wanted Rhett to know that he was not the push-over that his dad was.

Pete arrived to the Hume mating yard at just a little after midnight. He pulled his truck into the long driveway that wound back to the apiary, and he stopped about 150 yards from the apiary. He hid the truck so that it could not be seen from the country

road, but he really did not expect traffic any way. "So this is it", he thought to himself. He sat quietly for 10 minutes not realizing how tightly that he gripped the steering wheel. His mind raced as anger at Rhett and the words of disappointment from his father seemed to randomly mix within his consciousness. He grew paralyzed, not so much from fear of being caught, but from the fear of becoming a pariah within his own family. He pounded his head repeatedly against the top of the steering wheel as he tried convincing himself to follow through with his plan.

Suddenly, he knew that he could not poison the bees. He loved bees, and the thought that he was about to kill all of those colonies sickened him. How could anger bring him so close to doing something so totally against his ethos? More importantly, he loved his father and all that he represented. He knew that poisoning the bees would destroy his relationship with his father. That price was just too high, and Pete sat quietly until his pulse rate returned to normal. He drove home and never mentioned to anyone how close he had come to killing the Hume bees.

That queen rearing season passed, and the Colbys did not use the distant mating yard that year. One day the following spring, Pete and his father were culling breeder queens from some west coast stock they had bought the previous spring. Most of the colonies were good, but they encountered several undesirables. Pete announced that the blue-painted queen in colony 34 continued to have chalkbrood as she had done in the summer and fall of last season. "You want me to pinch her, Pop?" asked Pete. "Oh, no, son. We have a new procedure for undesirables." replied his father. He continued, "Put her into a queen cage with attendants, and I have a special place for her."

"A special place?" queried the bewildered Pete. His father answered, "Awe, yes. Last summer your grandfather began placing all undesirables into our distant drone yards." Pete look stunned as he watched the fiery twinkle of his father's eyes. His father continued, "We have replaced about 70% of the existing queens with the undesirables!" Pete flashed a big toothy grin, and he never felt closer to his father than that moment.

Upcoming Events

Beginning Beekeeper's Workshop sponsored by the South-West MS Beekeepers Association; at the Pike County Fairgrounds, 3134 Wardlaw Road, McComb, MS 39648; **October 4, 2014** – contact Michael Scheel at 601.595.9410 for details.

B Binding and strengthening: bow strings, sewing thread, ropes and dread locks.

E Exceptional ingredient which makes it useful in steel works, optical factories, aircraft industry, candles, cosmetics, bullet lube and many more products.

E Exclusively used by bees for honey storage and a nursery for the next generation.

S Seals: metal, wood, cement, paper, leather and more.

W Waterproofing: matches, tent seams, shoes, boots, fishing flies, nets and others.

A Artistic application for encaustic paint: "wax painting".

X "X-ceptional" to lubricate nails and screws in fine woodworking and making furniture polish.

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