Issue 55 Spring 2015

# The Four Seasons

The newsletter of the Native Irish Honey Bee Society *Apis mellifera mellifera*

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# Editorial note

NO-ONE has yet come forward to take up the editorship of *The Four Seasons*. I have already made it clear that I can no longer fulfill the role. To ensure the continued survival of our magazine, it has been decided to try out a novel editorial scheme. It is hoped that each issue of *The Four Seasons* will be compiled by a different guest editor, whose role will be to organise material for the magazine, edit this material and forward it for publication.

This new scheme represents a great opportunity for members to place their own slant on *The Four Seasons* and highlight the issues they think are important in the conservation and propagation of our native honey bee.

This may seem a daunting task for some, but I assure you from what I know of our membership, the vast majority are more than capable of editing an issue. In addition, I am in the process of developing guidelines for editing the magazine, and these will provide step-by-step advice on the process. I will also remain on as editorial coordinator for the foreseeable future to help guide the new scheme.

We are immediately looking for guest editors for the summer and autumn issues, and anyone interested should contact me as soon as possible (Email: eemac@eircom.net).

**– Eoghan Mac Giolla Coda**


*Commemorative stamp for Apimondia – the World Beekeeping Congress, which was held in Dublin 10 years ago*



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**Cover image** courtesy of Rustem Ilyasov *(see page 27)*

**Layout/subediting:** Tara Horan, Email: tara@fusioncreative.ie

**Next issue:** All contributions for summer issue should be sent to Editorial Coordinator by April 30th **(email: eemac@eircom.net)**

# Editorial

## *Micheál C Mac Giolla Coda*

***Ar scáth na ndaoine a***
***maireann a chéile***
***In each other's shadows***
***do the people live***

This old saying is one of the important lessons that we all have to learn in our journey through life. In times gone by, it was put into practice on a seasonal basis. The proverb is also applicable to us beekeepers. In the past, it had much to do with manual work on the farms especially, prior to the arrival of agricultural machinery. Many farming operations required manpower to get a job done quickly and efficiently. This applied to the cutting of turf, the making of hay, the cutting of corn, and the threshing, etc. It also applied to animal husbandry and fishing operations. Although individuals today are much more independent, we can still be dependent on each other, even though we may not fully realize it.

It is important that we as beekeepers are willing to help each other. This can involve sharing our knowledge and experience and even some of our stock, such as breeding material, when necessary. This is especially applicable to NIHBS, which in order to survive and thrive is in need of our constant support. We can do this in many ways. We are so lucky to be involved in this wonderful organization. We must give due credit to the forethought and initiative of those who started it and kept it going over the past two years. Great credit is due to the officers in particular and the members of the committee, all of whom travelled long distances to meetings and various functions. This was all done on a voluntary basis without any form of monetary compensation for work done or distances travelled.

It is a great honour for me to have been given the opportunity of editing this issue of *The Four Seasons*. May I take the opportunity of paying a well-deserved tribute to our two former editors. In the first place, the late Claire Chavasse initiated and developed the magazine as a newsletter of the Galtee Bee Breeding Group. Even with limited resources for printing and photocopying, she set a very high standard in the early years of this century. Claire will always be remembered for her superb work on *The Four Seasons*, and her name will be forever associated with this publication. Fortunately Eoghan continued to maintain the high standard that Claire had set. Then in recent years, with new printing methods and the use of colour, and with help from Aoife as graphic designer, the newsletter took on a new lease of life to become the highly regarded colourful magazine that it is today.

Claire Chavasse was a lovely lady, and she had such a wonderful way of approaching people to get them to write a piece for *The Four Seasons*. The result was that during her term as editor, practically every member of GBBG wrote some article for the newsletter. Fortunately, Eoghan continued this tradition during his term in office and even widened the scope of the magazine by including articles from black bee enthusiasts across the whole of Northern Europe. It is only right that special tribute should be paid to all those who have cooperated with the editors by contributing articles, as it would not have survived without them. Many thanks are due also to Seamus Reddy, who has taken on the task of packing and posting the magazines. All in all, the spirit of cooperation continues to be practised to a high degree in all elements of this publication.

Among the many items in this issue, we have a most interesting article on the dark bees of the Ural Mountains area of Russia, bees that are basically the same as the *Apis mellifera mellifera* that we have here in Ireland. This article and the accompanying pictures arose from a meeting between Eoghan and the author at the BIBBA/SICAMM Conference at Llangollen in Wales last September. I was amazed to learn that there was somewhere between 500,000 and 1,000,000 colonies of dark European honey bees still surviving in that region and that 99% of them are managed in bar-frame hives for honey production. It is fascinating also to learn that the ancient tradition of managing bee tree colonies is still practised today.

In this issue also we have a report of the AGM of GBBG, and it is heartening to see that this group, which could well be regarded as the 'mother colony' of NIHBS, is still going strong, and its activities are well supported. There is also a detailed account of the AGM and mini-conference held by NIHBS at Tullamore, which proved to be another successful milestone in the life of this society. Eoghan has also given his annual report on the scale hives, and many thanks are due to those who continue each year to monitor the weight gain (or loss) throughout the season. Irene Power has a very interesting article on observations at the hive entrance. As we progress as beekeepers, our powers of observation increase accordingly and in the springtime, especially, while it is still too cold to open up the hive, we can learn a lot from merely watching what is happening around the hive entrance.

*Claire Chavasse, Editor 2001-06*

*Eoghan Mac Giolla Coda, Editor 2006-13*

I must say I have enjoyed editing this issue of *The Four Seasons*. I felt neither confident nor competent when asked to do so, but with the advice and encouragement that I got from the previous editor, I improved gradually, as I learned the techniques involved. Like various aspect of beekeeping, it seems to involve putting theory into practice. I do hope that someone of our members will take on this position on a permanent basis. It is probably a good exercise to just do one issue for a start, so as to get the feel of what it entails. I have no doubt that Eoghan, drawing on his years of experience, will be there to advise and assist in every way possible.

early in the year. I am so lucky to know both speakers, who were delighted to get the year off to a buzz before the official beekeeping programmes were up and running.

On the information evening, there were about 20 people very interested in bees. Each speaker talked for about half an hour, followed by a short questions and answer session. Afterward, we enjoyed light refreshments and discussed the event. All who were in attendance are hoping to see more events like this in the future. From this night, we now have a list of people interested in bees, some in pollinators, some in honeybees, and some in both.

While setting up the event in the morning I had brought bees, wax and hives to the centre where we run a parent and toddler group. I discussed the honey and bees with them and then showed them the queen, drone and workers I had kept for demonstration to others. These children and their minders were very interested in the bees.

We need to have more open seminars and information evenings to get the wider public knowledgeable on the welfare of the bees. I hope to go to local schools in the future to give a talk on bees and awareness of their benefit to us.

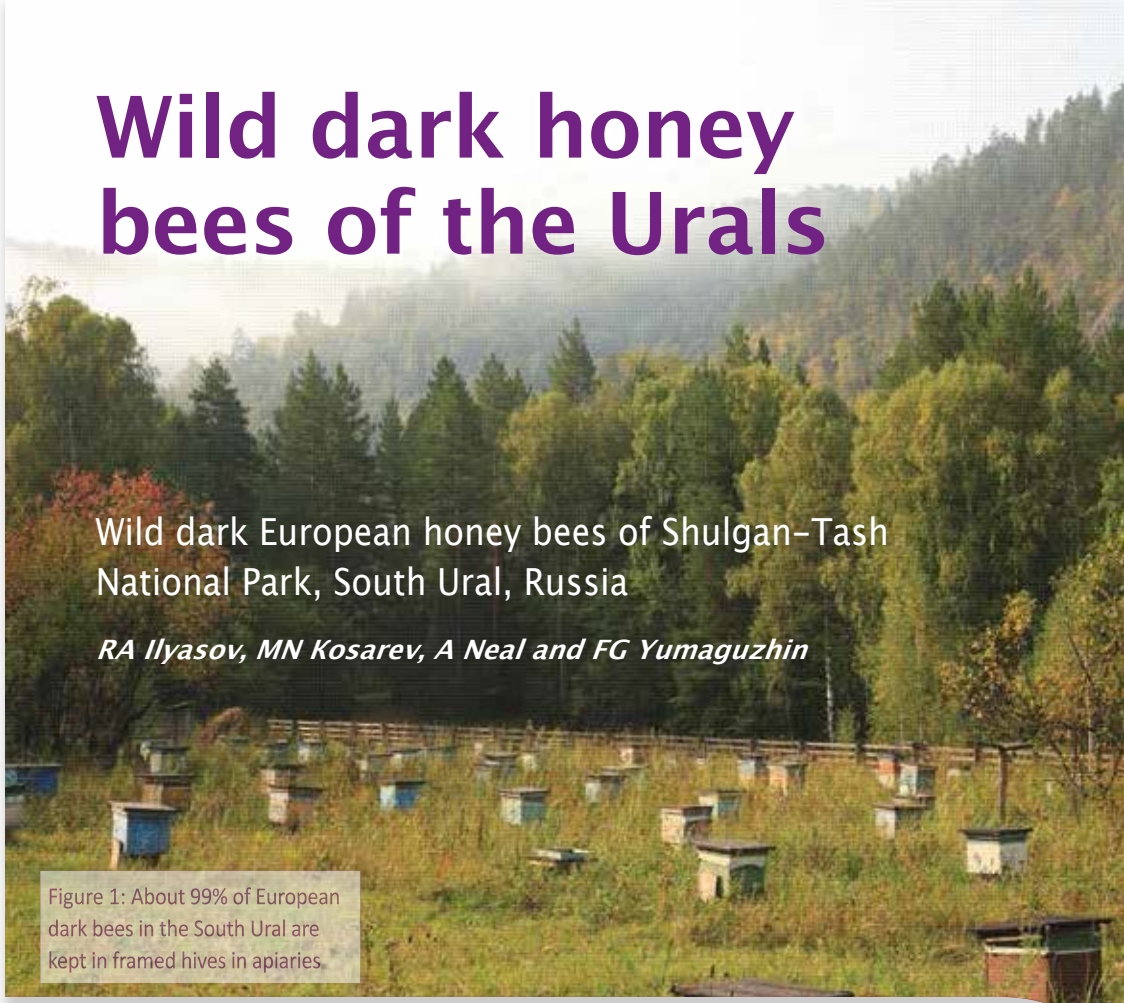
Pauline is helped to check her bees by her grandson, who suits up and helps carry the hive tools and other equipment

In my first year I have had my grandson working with me when checking the bees. He is so interested and he suits up and brings the hive tool or other equipment. In the photo shown he asked me 'granny can I rub the bees because they know me now' this was about five weeks into the working with them. At Christmas we were just down checking the apiary and he wanted to know when can we check the bees properly. With each trip he is learning vastly and in doing so I am relearning all I have been taught. His little brother is following on in the interest already at a year and a half. I never take them to the open hive on my own for safety reasons. I may only have two hives but this journey has only begun and I am addicted to this venture.

**– Pauline Walsh, Knocklong, Co Limerick**



# Wild dark honey bees of the Urals



## Wild dark European honey bees of Shulgan–Tash National Park, South Ural, Russia

***RA Ilyasov, MN Kosarev, A Neal and FG Yumaguzhin***

Figure 1: About 99% of European dark bees in the South Ural are kept in framed hives in apiaries.

A SPONTANEOUS hybridisation among honey bees in most European countries has led to the loss in the gene pool of the dark European honey bee (*Apis mellifera mellifera*). We believe Russia still has a considerable array of purebred populations of European dark bees. The most common bee, the Burzyan honey bee, lives under protection in the mountain forest zone of South Ural in the Shulgan-Tash State Nature Biosphere Reserve, the Altyn Solok Regional Nature Reserve and the Bashkortostan National Park. These wild tree-hollow honey bees are of great interest among beekeepers and scientists around the world, as they could be used to reconstruct the natural history of bees.

The European dark bee is a unique subspecies of *A. mellifera* evolutionarily adapted to live in the continental climate of northern Eurasia, which has long cold winters.

Today, this subspecies mostly survives only in a few isolated reservation areas. The biggest areas are in Russia, with about 300,000 colonies having avoided spontaneous hybridisation in the South Ural area of the Republic of Bashkirostan, about 200,000 colonies in the Middle Ural area and about

Figure 2: The Burzyan wild-hive honey bee

Figure 3: A tree-hollow beekkeeper at work

Figure 4: Bashkir beekeepers developed 'Koloda' beekeeping, which involves the use of handmade hollows inside tree trunks

250,000 colonies in the Volga region of the Republic of Tatarstan. We also have information about large populations of European dark bee in the Altai region of the Republic of Udmurtia. About 99% of European dark bees in the South Ural are kept in framed hives in apiaries *(Figure 1)* and about 1% in both natural and specially made tree hollows. The evolution of the dark bee was synchronous with the evolution of the widely spreading linden tree *Tilia cordata* and therefore the main forage crop for these bees is when these trees blossom.

Scientists at the Biochemical Insects Adaptation Laboratory in the Ufa Scientific Centre of the Russian Academy of Science have been monitoring the gene pool of the Burzyan honeybees for the past 20 years using polymorphism of loci COI-COII of mtDNA and microsatellite loci ap243 and 4a110 of nuclear DNA.

This extensive research confirmed the pureness of the gene pool and that this gene pool is of the *A. m. mellifera* subspecies. In 2011, upon request by the Institute of Beekeeping and the Shulgan-Tash State Reserve, bees from this population were classified as a separate breed type: the Burzyan wild-hive honey bee *(Figure 2)*. This breed was registered patent No. 5956 from 14.06.2011 by the State Commission of the Russian Federation in the state register.

According to artefacts found at a burial site of the Bahmutin culture near Birsk, beekeeping in the southern Ural started no later than 500-600BC among local Finno-Ugric tribes. Later beekeeping was adopted by ancestors of the Bashkir people, which assimilated and drove away the Bahmutin. Beekeeping did not require tools of iron, and the skills accumulated were passed on by many generations of tree-hollow beekeepers *(Figure 3)*.

Bashkir beekeeping flourished in the 18th century. It took it longer to develop than in Germany, Poland, Lithuania, Belarus and central regions of Russia, but the Bashkir beekeepers had a more perfect, convenient and reliable set of tools and accessories. With



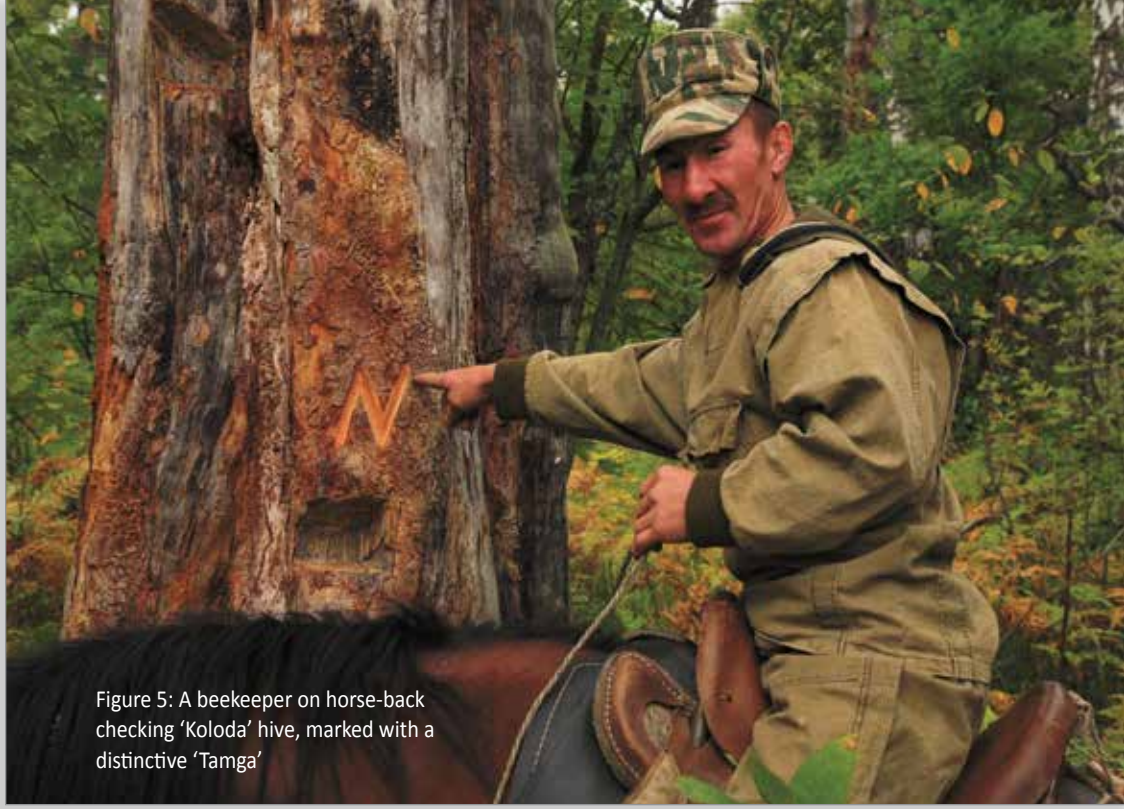


Figure 5: A beekeeper on horse-back checking 'Koloda' hive, marked with a distinctive 'Tamga'

special land tenure rights, the Bashkirs could avoid compliance with the requirements of the Forest Service in Russia, which in 1882 had banned beekeeping in state forests as a source of forest fires.

In the 19th century due to deforestation and the destruction of their cultural traditions by the migrant population, Bashkir beekeepers developed 'Koloda' beekeeping, which involves the use of handmade hollows inside tree trunks *(Figure 4)* that could be fixed high on a tree. Trees with 'Koloda' were considered by Bashkirs as personal property and were marked with 'Tamga', distinctive signs of tribal affiliation *(Figures 5 and 6)*. Every beekeeper knew his mark and did not touch the property of others, and these trees with 'Koloda' and 'Tamga' were traditionally kept by a family for generations.

In the second half of the 20th century, Bashkir beekeepers started using

Figure 6: Examples of 'Tamga', which are distinctive signs of the tribal affiliation of Bashkir beekeepers

movable-frame hives, which gave rise to modern beekeeping. Despite the hard labour and low productivity, tree hollow apiculture in remote areas of the South Urals still continues. Inspections of hollow-tree hive bees require working at heights of up to 16 meters, and because they are located away

from populated areas, the beekeeper has to travel on horseback a distance of 40-50km per day *(Figures 7 and 8)*. Tools used by Bashkir beekeepers are mostly homemade but are similar to tools used in other countries. Tools unique to the Bashkir wild-hive beekeepers are the 'Kiram', a braided leather belt up to 5m in length for climbing a tree, and the 'Lange', a small portable platform or footrest *(Figure 9)*, which is fixed on the trunk with a rope.

In the last centuries, when there were enough natural tree hollows containing bees, Bashkirs, like beekeepers around the world, in the autumn took all the honey from the colony and the bees, left without reserves, died. In spring, beekeepers checked these tree hollows, cleaned them and made them ready for a new occupation by a swarm.

This system of killing colonies to remove the honey was used until the 19th century and in some areas until the 1950s. The advantage of this system was that a new comb was created every year, tree hollows rot less and, as a result, bees were rarely sick, their body size did not decrease due to using old comb, and there was less chance of inbreeding and degeneration.

However, when the number of natural tree hollows declined sharply, beekeepers were forced to carefully treat the wild-hive bees and leave the best of them with sufficient honey for the winter. As a result, colonies were able to live a long time in the same place (up to 18-25 years!) and beekeepers had to learn how to replace a comb but the life of the hollows was reduced. *Figure 10* shows an interior view of an artificial hollow-tree hive.

Wild-hive bees in the Ural area also have many natural enemies that weaken the colony and cause their death. These are the brown bear (*Ursus arctos*), the pine marten (*Martes martes*), the forest mouse (*Apodemus uralensis*), the great spotted woodpecker (*Dendrocopos major*), the European bee-eater (*Merops apiaster*), the large wax moth (*Galleria mellonella*), the European hornet (*Vespa crabro*), the red wood ant (*Formica rufa*), and the red wasp (*Dolichovespula rufa*). They also have not escaped modern honey bee diseases and parasites, such as the varroa mite, *Nosema apis*, chalkbrood disease, and American and European foulbrood. However, these diseases are more severe in modern, movable-frame hives than in tree-hollow hives. The population of tree-hollow bees has cyclical swings that depends on solar activity.

Figures 7 & 8: Inspections of hollow-tree hive bees equire working at heights of up to 16 metres

Figure 9: Tools unique to the Bashkir wild-hive beekeepers are the 'Kiram', a braided leather belt up to 5m in length for climbing a tree, and the 'Lange', a small portable platform or footrest, which is fixed on the trunk with a rope

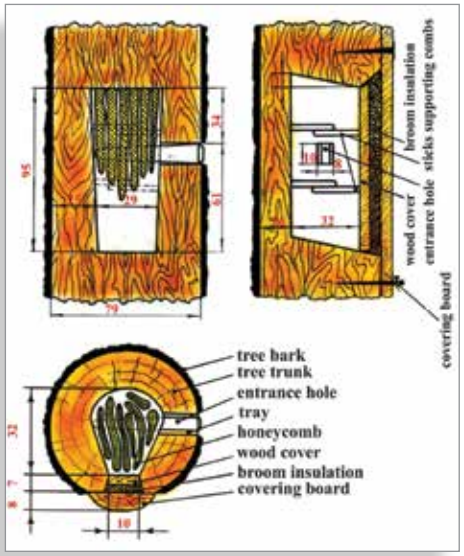



Figure 10: An interior view of an artificial hollow-tree hive

Currently, dark European bees exist in the southern Urals in the Shulgan-Tash State Reserve, where they live in natural and handmade tree hollows. The reserve was established in 1958 and it covers an area of about 54,000 acres. The bees also live in the Altyn Solok regional nature reserve, established in 1997 with an area of 222,000 acres, and the Bashkiria national park, established in 1986 with an area of 203,000.

At the end of 2014, these three national parks had about 1,200 trees with handmade tree hollow hives but only 300 of these had bees. About 4,000 colonies are kept in apiaries with modern movable-frame hives, and 200-400 colonies live in natural tree hollows. In 2012, these reserves were listed as specially protected areas, together with a number of others, and acquired the status of a 'biosphere' by UNESCO called the Bashkir Ural complex, with a total area of 855,000 acres. The Altyn Solok regional reserve is also protected by the Ministry of Environment of the Republic of Bashkortostan. Currently, in order to preserve the Burzyan honey bee, it is planned to expand the Shulgan-Tash reserve in a north-west direction through undeveloped territory between the rivers Nugush and Uruk.

The staff from Shulgan-Tash, Altyn Solok and Bashkiria, together with local beekeepers, are constantly taking measures to increase the bee population and carry on selection work to improve immunity, winter hardiness and productivity of the Burzyan bees. This policy of state protected reservations allows us to save a unique population of these *A. m. mellifera* bees in Eurasia in the face of new threats of spontaneous hybridization and habitat destruction.

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*References*
*There is an extensive bibliography (mostly in Russian) associated with this article. For a list of these references, please contact Eoghan Mac Giolla Coda (eemac@eircom.net).*



# From the Four Corners

***The 'Four Corners' feature was initiated by Claire Chavasse, our first editor, and it has been continued up to the present, the aim being to include articles on a particular aspect of beekeeping from different parts of the island. In this issue, I have included two articles from the Gaeltachts of Connemara and Corca Dhuibhne. I feel it is only fair that native Irish speakers should be given a chance to use their everyday language in this magazine, which purports to support the conservation of something that is endangered. I am sure that most people will be able to read these articles, but if not, they will surely be able to find somebody close by who will be glad to translate them. The main subject of the articles in this instalment is the writers' aspirations and forward planning for the new beekeeping season.***

## Co Kilkenny

APPLE production is the main operation here at Clonmore House (little.irish.apple@hotmail.com). Bees are for pollination, ideally at a hive per acre. We like to move hives into the orchard during full blossom if we get a good weather forecast. The bees wake up in a new site for a fine day and work the abundant apple blossom for a day or two. Generally, they head off to find better forage as soon as they can. I tend to leave the bees there for a week to 14 days to catch up on my systems. Often, I will find queen cells in the stronger colonies at this stage.

Bees do not do well on the apple blossom; it's a huge cost to the bees. I much prefer to get them to oilseed rape. However, that is not what I grow. Beekeepers who supply bees to apples need to be much better rewarded than they have historically been. Apple growers can buy bumble bees at €175 per box and have the honour of disposing of a plastic polystyrene package. I think many are spending €100 per acre or even a full box per acre. The bumblebees are imported of course. I prefer to invest that money into hives. I also have previously paid beekeepers to bring bees in, but of course I see now that I did not pay enough. I don't know if anybody has done a study on the economic benefit of our pollinators; it sounds like the sort of thing that would have been done by now.

My objective is to have my out-apiaries holding permanent colonies and just move nukes for pollination. Up to now, I have stimulated my colonies very early to have huge stocks ready for apple blossom. I am changing my mind on this procedure. I think very early stimulation can cause problems in itself. What happens to all that brood when I bring my bees to the apples? It has pollen available but not a huge nectar flow and, as a result, I

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