



# ASSOCIATE PARLIAMENTARY FOOD & HEALTH FORUM



## The contribution of bee-keeping to UK horticulture and of allotments to UK food security and a healthy lifestyle

5-6.30pm, Tuesday 9 December 2008

Committee Room 4A, House of Lords

### Minutes

#### Introduction

Lord Rea welcomed members and guests to the meeting and introduced the subject of the meeting: beekeeping and allotments. He noted that questions about bee disease had been asked in Parliament and Parliamentarians had recently been lobbied by supporters of the British Beekeeping Association, who are trying to persuade the Government to increase the resources devoted to research into bee diseases. Lord Rea said the decline in the number of bees in recent years was not entirely understood and our first speaker, Tim Lovett, would speak about this.

Tim Lovett graduated in Biological Sciences at University of East Anglia, Norwich and has spent the majority of his working life in the pharmaceutical industry, more recently running his own company marketing dermatological products. Tim has been keeping bees for almost twenty years and is now the National Secretary of the British Beekeepers Association.

#### Tim Lovett, National Secretary, British Beekeepers Association

On a show of hands requested by Tim, it appeared that approximately half the members and guests present were beekeepers.

Tim introduced the British Beekeepers Association (BBA) as an educational charity, whose purpose is to promote and further the craft of beekeeping and to advance the education of the public in the importance of bees in the environment. The BBA also provides a range of practical services for members including, for example, public liability insurance (see slide 2).

Beekeeping has changed over the years from harvesting honey from wild hives to using the traditional skep, then the familiar (white) WBC hives, and more recently, the simpler National Hives. All these hives have a similar structure with an internal frame on which the honey is produced.

There are three levels of life/castes within the hive: the queen bee, the worker bee and the drones. In summer one hive will have one queen bee, some 60,000 worker bees and 2000 drones. By winter, the number of worker bees will have fallen to 10,000 and all the drones will have been driven out. The queen is an egg laying machine. She lives for 3-4 years and will lay 5m eggs in her lifetime at a rate of 2000 eggs a day – her egg production exceeds her body weight. The queen's pheromone levels have annually and when she is no longer able to produce a normal number of eggs she will be driven from the hive.

Bees reproduce by leaving a new queen with the drone bees sealed in a hive. As a result of mating with the queen, a drone dies. Worker bees have specific functions within the hive (see

Chairman: Lord Rea  
Vice-Chairmen: Dr Ian Gibson MP  
& Baroness Miller of Chilthorne Domer  
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slide 9), such as food production, cleaning and guarding the queen. Once they have learnt to fly, they forage for nectar, pollen, propolis and water for the rest of their lives, which last about 6 weeks if they are born in the summer. Winter bees live longer, for about 6 months.

The beekeeping year is directly related to the seasons. In the spring, the colony increases in size, the queen is laying eggs and the need for pollen and nectar rises. In the summer, the worker bees are busy gathering nectar and pollen, the bees begin swarming, the colony reaches its maximum size and the keeper harvests the honey. By the autumn, in preparation for winter, the colony decreases in size and the food stores are sealed. In the winter, the hive is inactive: the bees cluster, there is no egg production and the remaining bees survive by consuming their food stores.

Bees are incredibly hard working. In a life time they fly a distance equivalent to orbiting the earth. Although they only weigh 25g they will carry pollen and nectar weighing up to 40mg. They have to fly 30,000 round trips per pound of honey and each trip takes 30 minutes. However, beekeeping is not just about honey! It's also about pollination. Bees pollinate some 30% of the crops and wild plants that we eat. If pollination falls we may not lose whole food groups, but the availability of these foods will fall and their price will increase. We will have to depend increasingly on wind pollination foods if we continue to lose bees. Bees are also important because they improve the productivity of other foods – those that do not depend on them entirely for pollination – such as oil seed rape, sunflowers and borage (see slide 12).

Beekeeping in the USA is more commercial and migratory. Hundreds of hives are kept on large trailers and travel the country, pollinating crops in different states at different times of the year. They are used to pollinate the almond harvest in California in February, then the citrus crops in Florida before moving to central and northern states later in the year. It has been estimated that the value of the Californian almond crop pollinated by bees is about \$150m per year, exceeding the value of US honey sales. They have been working this way for a very long time, but in the last four years problems have emerged with increasing numbers of bees dying as a result of disease.

In the UK there are some 25, 000 beekeepers, 99% of whom are amateurs, and some 300 bee farmers. Overall honey consumption in the UK is 25,000 tonnes. UK honey production is about 5000 tonnes, worth approximately £12m, from 250,000 colonies. There are virtually no wild hives left, so British beekeepers are the guardians of our bees and, thereby, protectors of the bee pollination process.

There is very little paid pollination in the UK, although it has been estimated (ADAS report, 2007) that bees contribute £165m to agriculture, making each hive worth approximately £600. At the present time, Defra spends £1.5m on bees, with the EU providing some €750,000 of support, which is absorbed by the Treasury. Only £200,000 of Defra expenditure is spent on research.

Beekeeping in the UK faces various threats, including: climate change, contamination by GMOs, litigation, economics (only a handful of bee farmers earn a living from beekeeping), diseases, pests and regulation. The regulatory threat emerged in 2004, when the Veterinary Medicines Directive was published, leading to the Veterinary Medicines Regulations in 2005. These classify bees as “food producing animals” with the consequence that all medicines for bees became available only with a veterinary prescription, increasing their cost. The BBKA has had extensive discussions at an EU and UK level and, as a result, most medicines used for bees no longer require a prescription. However, some of the most important medicines required to treat bee diseases are still only available with a prescription, although the Veterinary Medicines Directorate (VMD) is doing its best to be helpful.

Many diseases affecting bees are understood: foul brood, for example, is ever present; varroa is now endemic (having spread from Devon as far as Scotland) and is unresolved; a third major disease, nosema ceranae, is new to the UK. Bees are also killed by viruses vectored by varroa. These three diseases remain the likely causes of colony collapse, which affected 30% of British hives in 2007/8, with honey production falling 50%. It remains to be seen what affect this fall in the number of bees will have on pollination and crop production.

In conclusion, bees contribute £165 million to economy, but Defra spends just £1.5m on bees, including £200,000 on research (with support of €750,000 from the EU). The BBKA has proposed that Defra funding should increase to a still modest £8m over 5 years. Over that period, bees will contribute an estimated £825m to agriculture so it would be a modest investment on the part of the Government. Lord Rooker acknowledged the problems facing British beekeeping and the importance of bees but said at a meeting in December 2007 with the BBKA: "there's no way more Government money will be found for bee health research."

Following that meeting, the BBKA launched a campaign to seek to persuade the Government to increase the resources invested in bee research, culminating in the recent lobby of Parliament and the delivery of a petition signed by 140,000 supporters to Downing Street on 5 November. The Early Day Motion supporting the campaign has been signed by 110 MPs, an adjournment debate on the subject attracted all party support and the BBKA has also received strong support from the media and the public.

On 6 November, Hilary Benn, Secretary of State for the Environment, Food and Rural Affairs, said: "the National Audit Office is looking at our expenditure on bee health research. We are working with the Veterinary Medicines Directorate to get medicines on the market more quickly in order to help beekeepers. We give a lot of advice through the beekeeping inspectorate, and once we have the benefit of the NAO advice, I intend to respond on what else we might be able to do."

The BBKA hope Defra's response to the NAO advice will be to increase support for beekeeping and research into bee disease. Bees make a major contribution to pollination, they occupy an important ecological niche, they are essential to our food security and they must be better supported. Albert Einstein said: "If the bee disappeared from the surface of the globe, then man would have only four years left to live."

## Questions

**Lord Rea** asked if the BBKA is concerned about the use of certain pesticides used for seed dressings and referred to an incident in Germany which had resulted in a temporary ban on pesticide use for a period. **Tim** said that incident had been caused by an error in applying the pesticides which meant they did not stick to seeds and blew over nearby colonies. The BBKA is concerned about the use of those pesticides and thinks that the sub-lethal affect of these pesticides needs to be given further consideration. **Emma Hockridge** of the Soil Association said some EU countries had banned the use of specific pesticides and there is also some concern in the USA that they are affecting their hives. **Tim** said that in France, where the pesticides were banned, there was no effect on bee deaths, so more research is needed.

**The Countess of Mar** asked whether much research has taken place into the fact that bees lack genes to detoxify their bodies and drew attention to the possible threat to bees caused by repeated use of pyrethroid strips (to counter mites) on hives. **Tim** said the Prince of Wales has drawn attention to poor bee immunology and related issues and the BBKA hope that Wellcome Trust type funding will address these issues. The BBKA is concerned that the pyrethroid strips and the inappropriate use of pesticides may be affecting bees.

**Dr Ian Gibson**, chairing the meeting following Lord Rea's departure, introduced the second speaker, Geoff Stokes, the National Secretary, National Society of Allotment and Leisure Gardeners (NSALG). Geoff has been the full time Secretary to the National Society of Allotment and Leisure Gardeners Ltd since 1988. He has worked with various Government departments and other organisations on environmental and other food related projects. He has also grown his own fruit and vegetables since moving to Northamptonshire in 1974.

## **Geoff Stokes, National Secretary of the National Society of Allotment & Leisure Gardeners**

Geoff said that relatively few of the 8000 allotment sites in the UK have bee hives on them, mainly because allotment holders feared being stung, but also because Local Authorities have to be

persuaded that they are safe and appropriate. So more public education is required if the number of hives on allotments is to be increased.

Allotment gardening has provided the landless poor with the opportunity to grow their own food to feed their families for over 150 years. Unfortunately, the true value of allotments in terms of produce grown is rarely considered except in times of national emergency, such as the two world wars, when the crops grown provided a vital addition to the disrupted food imports. In 1941 the Ministry of Agriculture estimated the annual production of food grown on allotments at 1.3m tons. The war time size of plots was 1/10 of an acre, so this was the equivalent of just under ¾ ton grown on current standard sized plots of 250 square metres.

In 1975 the Royal Horticultural Society (RHS) maintained a trial plot manned by students who spent 180 hours working on it. By 22 November the total weight of produce grown was recorded at 1435 lbs (0.64 ton) and this excluded the weight of lettuce, radish, spring onions, sweetcorn and soft fruit grown on the site as well as the winter crops remaining on the site. If that tonnage were multiplied by the 330,000 plots currently available, it suggests that some 241,560 tons of food is capable of being grown on the UK's existing allotments, much of which might otherwise be imported at considerable cost in financial and environmental terms. It is the equivalent of 116 journeys by a 40 ton lorry per week. Such vehicles use an estimated £650 of fuel per day and contribute 403kg of carbon per 270 mile journey, adding considerably to the UK's carbon footprint.

Vegetable growers and allotment gardeners also help to maintain a wider range of vegetable varieties and cultivars which might otherwise be lost because they would not be commercially viable. Commercial growers require varieties which all mature at the same time, enabling a whole field to be cleared, whereas amateur growers require varieties which mature over a longer period. The NSALG offer a seed scheme to our members containing 41 varieties of potatoes, 25 varieties of tomatoes, 28 varieties of lettuce, 16 varieties of carrots and 15 varieties of cauliflower, most of which are not available in the market place! This allows allotment gardeners to find varieties which suit their local climate and growing conditions.

Amateur vegetable growers are also preserving wide ranging horticultural skills because of the many different types of crops they grow. This is particularly important as most commercial growing appears now to be closer to mono-culture. Allotment gardeners add some 300,000 gardeners to the estimated 400,000 agricultural workers in the UK.

Only 10% of the fruit consumed in the UK is grown here and it would be interesting to see what contribution is made by allotment gardeners. Geoff's own 200 square metre plot contains 5 apple, 3 pear and 2 plum trees, plus strawberries, blackberries, raspberries, gooseberries, black and red currants and blueberries.

In addition to the dietary benefits of access to fresh fruit and vegetables, gardening is acknowledged by many as beneficial to health. This is particularly the case with allotment gardening, where regular exercise is carried out over a prolonged period and in the open air. Gardening is also beneficial to mental health due to the contact with nature and – in some cases – peace and quiet.

Allotment gardeners themselves have cited fresh air and exercise as one of their main reasons – second only to access to fresh food – for having an allotment. They are also concerned about the use, or overuse, of chemicals in commercial growing, particularly food produced in other countries where controls do not seem to be as rigorous as in Britain. Not all allotment growing is organic, but the major of allotment holders practise organic gardening until it doesn't work. They rarely use chemicals as a preventive measure, but do use them to treat pests and disease.

Any surplus produce grown on allotments could be sold into the local community especially in rural communities, where village shops may be rare. NSALG members often express disappointment at the lack of British grown produce available in the marketplace, particularly during our main growing seasons.

Allotment gardening has grown in popularity recently and it has been estimated that there could now be up to 100,000 people on waiting lists. Many believe the credit crunch will lead to increased demand as households seek cheaper food. Support from celebrity chefs has also increased demand for allotments. The NSALG believes more land should be made available for allotments, but some Local Authorities have responded to the increase demand by reducing the size of the plots available; the NSALG regards this as a retrograde step. A standard 250 square metre allotment is just about sufficient to provide a reasonable proportion of the annual fruit and vegetable needs of a family of four. Although smaller plots would enable more people to garden, it would actually reduce the total amount of produce grown on allotments (because of space set aside for paths, sheds, etc) and force the plot holders to buy what they would otherwise have grown themselves.

Local Authorities are legally obliged to provide a sufficient number of allotments were they are of the opinion there is a demand for them. Large waiting lists clearly indicate that many Local Authorities are failing to make the adequate provision the law requires. What the allotment movement needs, and the public is increasingly demanding, are more allotments. It should be borne in mind that the 1922 definition of an allotment garden is an area "not exceeding 40 poles" (1000 square metres), which is four times larger than the current standard sized plot.

In 1950 the Allotment Act was amended, limiting Local Authority obligations to the provision of allotment gardens, and in the case of Local Authorities with a population 10,000 or upward, to the provision of allotment gardens not exceeding 20 poles (500 sq m). It is therefore arguable that Local Authorities should be providing much larger plots and it does not seem unreasonable to expect a minimum provision of at least 250 square metres per plot.

If allotments are to continue to provide fresh, wholesome and local produce, we need more good quality sites, preferably sited away from polluting motorways and dual carriageways. We urge all MPs to encourage Local Authorities in their constituencies to ensure that an adequate number of standard sized plots are provided in their area – something they are legally obliged to do.

Several years ago, Geoff finished an article by asking whether we would have to wait for another national emergency before allotments received the full recognition and support they deserve. With the increase in fuel costs, threatened loss of jobs associated with recession and concerns about the environment, that time has now arrived. We should be encouraging more people to grow their own food.

## Questions

**The Countess of Mar** asked whether Local Authorities trying to sell land for development is affecting the supply of allotments. Geoff said that it had over the last 20 years, but this had not been such a big problem in the last year or two. **Ian Gibson** asked about the supply of land around schools. **Geoff** said that lots of other organisations, but not the NSALG, were working with schools to encourage school children to grow their own fruit and vegetables.

**The Countess of Mar** asked whether, although the British are notoriously bad at working cooperatively, a group of people could own and work an allotment together. **Geoff** said they could and that not every family requires a 250 square metre plot, but plot-holders need to be aware of the tactics employed by Local Authorities. One Local Authority decided to double the number of plots available – to satisfy demand from people on its waiting list – by halving the size of all its plots.

**Professor Jack Winkler** asked if there was an equivalent private sector movement in England to the one in Germany which leases land cooperatively to provide sites for allotments and whether there was any action in England to acquire land for allotments other than from Local Authorities. **Geoff** said action to acquire land for allotments in England had concentrated on Local Authorities because they have a legal obligation to provide allotments. In Germany there is no similar

requirement on Local Authorities, so private sector cooperative action is necessary. Moreover in the UK Local Authorities are not allowed to dispose of land set aside for allotments without Ministerial consent. As a result, English allotment holders have more protection than their German counterparts because the German leases typically only last for 30 years. The NSALG does encourage Local Authorities facing unmet demand for allotments to contact local farmers because it is a good source of income for farmers seeking to diversify.

Professor **Jack Winkler** asked whether land banks built up by developers might be a useful alternative source of land for allotments and how long allotment holders needed to have the land to make it worthwhile. **Geoff** said that for practical purposes 7 years would be a reasonable minimum. In fact most current allotment holders only have tenure for 1 year, which seems unfair when community groups are given 7 year tenure as a norm to help them secure grants.

**Myles Bremner** of Garden Organics said that Local Authorities sometimes “close” waiting lists, so Geoff’s figures for unmet demand may underestimate the current position. Allotments are a sign of a more holistic approach to food growing alongside more community involvement in schools and reflect increasing concern about food security, the environment, healthy eating and the importance of exercise. He referred to research which showed that even a slight involvement in growing food lead to significant changes in attitudes to food and the environment.

**Tim Lovett** asked what planning conditions apply to allotments and whether they are protected by Green Belt regulations. **Geoff** said that allotments are classified as agricultural land, so they are not restricted by Green Belt regulations.

**Ian Gibson** asked whether new legislation was needed to protect and support the allotment movement. **Geoff** said the current legislation does not specify the type or quality of land that should be provided for allotments. The courts have defined it as land “fit for cultivation by spade”, which is imprecise, so new guidance for Local Authorities would be helpful. **Ian Gibson** asked if the land had to be free from contamination. **Geoff** said that lots of Local Authorities had used former landfill sites and this had caused problems when collectors of Victorian objects had dug them up.

**Andrew Warde** of the Veterinary Association thanked both speakers for making the point that beekeeping and allotments are relevant to food security and he referred to the current Government consultation on food security. He also thanked Tim for making it clear that the VMD is trying to help British beekeepers and said that their ability to do this may be affected by proposals for reorganisation which could see the VMD subsumed within a larger agency. He also made a personal plea as a small holder to the Government to reduce the red tape concerning the sale of food by small producers.

**Ian Gibson** asked if there is enough diversity in bee breeding to protect them against disease. **Tim** said that there is a relatively small gene pool in the USA because bees are not indigenous to the USA, but there was some addition to the gene pool when African bees migrated to the USA. In the UK, it is arguable that the gene pool is too big because of the migration of African and Asian bees. The bee genome has now been sequenced so if funding becomes available research could be undertaken in the future.

**Dr Chris Hartfield** of the National Farmers’ Union said that Defra has a wildlife team that investigates pesticide poisoning incidents. They found that the bee population is now at the lowest since records began in the 1980s, although there have been no incidents involving the approved use of pesticides since 2003, which suggests that the main threats to bees come from pests and disease rather than pesticides. The **Countess of Mar** agreed, saying she was aware of the figures and her own concern was about the repeated use of low levels of pesticides which could have an as yet unknown long term effect.

**Dr Ann Blackburn** said that very few academic departments are researching bee disease and that without a certain minimum amount of research no progress could be achieved. **Ian Gibson** agreed

and said that the Government had a habit of cutting research just when progress was being achieved. Tim cited the case of Brenda Bull at Rothamsted, who was made redundant 3 years ago, having developed 17 antibodies for viruses, which are now located in Sweden. The BBKA are concerned that very few students are now studying entomology so we are not developing the scientists we need to undertake the research that is required.

**Robin Dartington** of Buzz Works said his organisation had succeeded in securing a grant from their Local Authority, as well as £30,000 of private sector support, to support beekeeping near Hitchin. He argued that it was necessary to raise public awareness both of the threat to bees and the contribution of beekeeping to pollination. He expressed the hope that more allotment holders would support beekeeping on their plots because there is a lack of alternative green spaces in urban areas. **Geoff** said it would be necessary both to persuade allotment holders that they would not be harmed by the bees and to persuade Local Authorities to give permission because bees cannot be kept on allotment without the approval of the Local Authority.

## **Conclusion**

**Ian Gibson** thanked the speakers for their presentations and urged them to keep both their campaigns going. He invited them to write to the Forum to pursue the issues that had been discussed so that Parliamentary members of the Forum could consider what action they could take to support them. He also encouraged the BBKA to work with the NFU and the allotment movement.

The next Forum meeting will take place on Tuesday 20 January 2009, when we will be discussing novel foods. Our speakers will be Lindsey Bagley of the Institute of Food Science and Technology and Bob Marsh of the Food Processing Knowledge Transfer Network.

**CLC, December 2008**