



Dear Member

The season is turning once more. Soon it will be time to dig out your thermals and extra thick socks to put on under your bee-suits and wellies. This thought takes me quite sweetly to the not so distant Winter Workshop you may be interested in attending at Aberdeen University. There's nothing quite like a day learning about bee identification to keep you warm, wouldn't you agree? From morphometry to microscopy, the course is ideal for native honeybee enthusiasts who want to improve on their working knowledge of Amm. We'll be getting in touch with all of our membership with more details on the course and a link that will let you book your place – so hold out for that – you will not be able to reserve a place until then. In the meantime, you can read more about what the course will entail in this newsletter and if you're interested, mark the date in your diary, **Saturday November 18th**.

If the thought of that doesn't warm you, perhaps news of the successful summer workshop will. With fellow beekeepers descending on Perth from all over Scotland, the Summer workshop on queen rearing was a huge success. Many thanks to the Ochil Hills Breeding Group for providing the training and organising these hugely rewarding and informative days.

Please do peruse at your leisure John Durkasz's article on his Colonsay beekeeping experience and our Chair, Gavin Ramsay's, opinion piece 'To Be or Not To 'Black' Bee – what's in a name?' And if your desire for bee-reading material still isn't satiated, gorge on Ewan Campbell's update on his experiments with breeding material (see what I did there?). These experiments are hugely promising and are a giant leap towards our ambition in strengthening Amm across Scotland by posting breeding material to interested members.

Enjoy all - and we'll be in touch again soon with further details about the winter workshop.

Yours,

Emily
SNHBS Secretary

Introducing our SNHBS Patrons

We are delighted to announce that both Professor Tom Seeley and Morna Stoakley have agreed to be Patrons of the Society. It is a great honour for those of us involved in the running of the society for them to agree to recognise us in this way.



Prof. Tom Seeley

Thomas D. Seeley is the Horace White Professor in Biology in the Department of Neurobiology and Behavior at Cornell University. His contribution to the understanding of honey bees and their behaviour cannot be overstated and it has been a delight in recent years to see him, like the animal he studies, become a communicator of the highest order. His research has elucidated the way in which bee colonies, particularly swarms, arrive at shared decisions through the phenomenon of Swarm Intelligence. The signals and other communication used by individual bees to achieve this and the insightful experiments designed by Professor Seeley to understand these processes have given so much to both the beekeeping community and wider society. He is the author of several books on honeybee behaviour, including *Honeybee Ecology* (1985), *The Wisdom of the Hive* (1995) and *Honeybee Democracy* (2010). Tom has been supportive behind the scenes and encouraged us in the planning period prior to our launch.

Morna Stoakley, together with husband John, were leading lights in the movement to conserve native honey bees in the 1970s and 1980s. John was an entomologist working for the Forestry Commission and he and Morna ran classes in Stobo Village Hall for those interested in beekeeping and bee improvement. The couple ran a ground-breaking survey of honey bees in Scotland, finding that native types persisted widely across Scotland but particularly in relatively isolated areas where there had been little importation over the years. After John's untimely death Morna has retained an interest in native honey bees and has been very supportive of our attempts to reinvigorate the work started by herself and husband and the breeding work of their friend, Bernard Möbus.



Morna Stoakley



Morna and John Stoakley (two taller figures)

What's in a name? To Be or Not To 'Black' Bee

by Gavin Ramsay

Does it matter what name we use for the original native honey bee that lived here before man began introducing honey bees from other countries? Not to them perhaps, but maybe it matters to us. In Germany the original native bee is called Die Dunkle Biene, the dark bee. The European dark honey bee is a commonly used term in the scientific literature and is used by both BIBBA and the European organisation for its conservation, SICAMM. The term black bee is also widely used and features in the Scottish Government regulation to establish the UK's first reserve for our native bee on Colonsay, 'The Bee Keeping (Colonsay and Oronsay) Order 2013'.

The bees I keep are usually dark brown. Some are distinctly black but not all are like this and even queens raised on Colonsay can be blackish or brown and stripy. This variation reflects the variation originally found in the subspecies. Within *Apis mellifera mellifera*, before man blurred the lines, there were heath bees found in heather districts across Western Europe (black forms such as race *lehzeni*), the dark form *nigra* favoured by breeders in Switzerland and other, more widespread, forms of the native bee with an overall brown coloration. These days with so much mixing taking place, even within countries, these original forms seem to have disappeared into the mix. However, Beowulf Cooper's book on The Honey Bees of the British Isles explicitly describes the body colour of native bees to be brown to jet black, that some lighter pigmentation is seen in the eastern part of the UK and also in preserved specimens from before the time of bee importation. Ruttner's book also describes the mellifera race of subspecies mellifera as being a brown bee.

Of course, with so much importation over many years, even of continental *Apis mellifera mellifera*, we cannot be certain that any stock is pure native but the bees we aim to keep will be the nearest approximation to the original type that is possible today. But, for me, native honey bees can be brown or black and the term black bee can only describe a subset of the bees that were native to these lands.

Does this really matter? No really, but breeders using the term 'black bee' sometimes think that the blacker their stocks appear, the better, and unconsciously select against the more brown forms. I know some beekeepers have been surprised to see that native bees commonly look brown rather than black and have even thought that their own native-looking stock cannot be *Apis mellifera mellifera* as they were not dark enough! The opposite also happens: people have selected local black bees and found eventually that they align more to the original carniolans than native honey bees. Although much of the carniolan stock traded internationally is a hybridised brownish form, some of the purer types sourced in their homeland can be at least as black as the darkest dark bee. All things considered, I'm sticking with calling our native honey bee the dark honey bee.

The Colonsay Experience with Andrew Abrahams - 2 - 4 June 2017

by John Durkacz

Our group sailed from Oban on a calm sea with blue skies on a crossing full of promise for the next two days. We were not disappointed. Met by Andrew Abrahams near the pier there was no mistaking the demeanour of the island man both beekeeper and oyster farmer making his living from the land and the sea. Two of the group camped and the rest stayed at the backpackers' hostel which more than met our needs. The following morning Andrew was there with bee suits for all and a brief plan for the day.



Colonsay queen



Colonsay dark bee

The sun shone most of the time though a cooling breeze typical of the island climate followed us while we visited the scattered apiaries. Once, clouds gathered, thunder rolled and a heavy shower hit us but not before the foraging bees had rushed back. This passed quickly and bees and beekeepers were back to work. Andrew was well organised from years of experience running beekeeping classes of different skill levels.



Andrew inspecting bees

We soon learned that the Colonsay bees were what Andrew said they were, both manageable and docile. A lifetime as a bee farmer on a small island coping with many seasonal visitors meant that swarming had to be controlled and bees gentle and tolerant of strangers near apiaries, something that Andrew could rightly claim he had achieved. Andrew demonstrating at one of the first apiary visits

Andrew sits to examine his bees and work with them. Required tools are carried on a belt so everything is easily accessible. Here he is examining a nuc and making a careful assessment of the new queen and the colony behaviour. His veil is always at the ready and most of the time not required though all apiary visitors must wear them. Freshly laundered bee suits are handed out to all for the duration of the visit. No honey bees are allowed to be brought to the island as it is a designated Black Bee Reserve. As it is also Varroa free anyone visiting for any beekeeping courses should not bring beekeeping equipment or clothing that has been used elsewhere.



View from the south of the island over the strand.

Colonsay has a gentler climate than many parts of western Scotland and the northern isles. The early summer frequently has wonderful periods of dry and sunny weather and the rainfall is less than on the mountains of the western mainland. For a small island there is a surprising range of habitats from the exposed coastal dunes and rocky outcrops, heather clad higher ground, wild meadows and central sheltered woodlands. The bees have adapted to foraging in exposed conditions and frequently changing weather at all times taking advantage of the succession of varied flowering plants. Watching honey bees working sea pink in a strong breeze along the exposed strand reminds us just how adaptable they are. As a result, Colonsay honey is a high quality unique blend of these nectars and much sought after.



Mini nucs



Mini frames being drawn out

The wildlife of Colonsay is a precious resource. A visit to the island takes us back in time and reminds us of what has been lost from many parts of the mainland. Glimpses of choughs and their graceful wheeling flights, the numerous wild flowers and above all the evocative evening calls of the corncrakes, make for a memorable experience. And the weather. Mainly fine during our visit the rapid changes were evident with huge rolling clouds darkening the skies and bringing heavy showers. The bees showed how well they are adapted to foraging in exposed conditions, taking advantage of all the wildflowers available and when heavy rain threatened rushing back to the shelter of their hives.

Sympathetic care and handling of the bees is a vital part of colony management and careful selection of colonies backed up by queen rearing through the active season is a constant concern. Andrew sets up queenless double nuc boxes which are regularly given additional hatching brood to provide them with young bees. They are kept near home and cells and grafts transported by a 'Carricell' (queen cell incubator); pollen is regularly collected from other colonies to ensure a constant supply for the queen rearing units should there be periods of lack. Queen cells due for hatching are moved to mininucs and then various mating apiaries around the island. Successful mating of the virgin queens is weather dependent and it is not uncommon to have a good start to the season early on and then have poor wet summer weather which leads to some drone laying queens. All part of the difficulties with beekeeping in the Scottish islands.

It is remarkable how well Andrew knows his colonies, even subtle differences in their behaviour. A small number show slightly more 'edginess' but are kept as they represent a particular 'line' and in a closed island population some diversity must be maintained. There is 'open' mating on the island and so far the original choices of dark native bees, many years ago, have been ideal and there are no significant signs of in-breeding. We were able to see for ourselves fine regular slabs of brood in each apiary.



Pollen collected from several colonies



Frame of brood

Searching for and improving the native honey bee of Scotland is a prime aim of the Scottish Native Honey Bee Society. A group of society members visited Colonsay to learn how Andrew Abrahams manages his bees and rears queens.

The SNHBS plans to run surveys searching for other remaining colonies of native and near native honey bees around Scotland from next year. By raising awareness of the need to conserve our biodiversity and improve skills in selection and queen rearing we hope to turn around the fortunes of native honey bees and arrest their decline in the face of continued imports of non-native honey bees.

The Colonsay experience shows just what can be done to select and improve our native bees. The involvement of other populations of native honey bees in breeding programmes on the mainland will be a step forward. This is a long term project which I hope many others will support by joining the Scottish Native Honey Bee Society. For more information see Andrew's website.

Summer 2017 Queen Rearing Workshop in Perth

by Gavin Ramsay

Forty-six beekeepers, mostly SNHBS members, came to Perth for the queen-rearing workshop organised by the Ochils Breeding Group over two days in August. After a classroom session going through the principles of selection, queen rearing, queen mating and subsequent management, the attendees divided into three groups for the three practical sessions occupying much of the day. Jeff took them through the grafting session, showing the right stage of larva to use and the methods employed to move the larvae into cups for cell raising. Participants worked in pairs to ensure that everyone had a chance to try grafting for themselves, many using magnifying headbands to help the careful handling of larvae of the right stage. John took his groups through everything to do with mating nuclei, the types available with their good and less good points, making them up with young bees and their management. I showed finding and handling queens and demonstrated harvesting queens from mating nuclei after the new queens were established. Everyone was encouraged to try their hand at lifting young workers and handling them as if they were queens. The yellow-spotted workers can still be seen in the MiniPluses now!



Although I had been reluctant to have gazebos erected for the day, their value was clear on the first of the workshops as torrential rain forced us under them to continue beekeeping. However on the second day wind was the bigger issue and one of the gazebos collapsed, but despite that the bees were well behaved throughout.

The dismal weather in the run-up to both events was affecting our ability to generate queen cells. However, several colonies were dedicated to the generation of queen cells and all participants who wanted one were eventually supplied with either a ripe cell or a freshly emerged virgin. We understand that several made it home safely tucked into cleavages and other parts of the body to keep them safe and warm! Reports since have been encouraging with at least a few of these queens now laying and being prepared for the winter.

Everyone seemed pleased with the organisation and the content of the event. Tracy and Karen deserve special praise for their professional approach to managing the day and for delivering an excellent buffet lunch in a lovely spot on the banks of the Tay.



Grafting



Filling mini nucs

Many of the participants took up our offer of a visit to our queen mating site afterwards where further questions were answered and everyone had the chance, after refreshments, of seeing the mating station in action. Both the presenters and the participants enjoyed their day with excellent feedback given at the end of the day.

Summer 2017 Bee Breeding Conference in Aberdeen

By Gavin Ramsay

There is a dynamism in beekeeping in the Aberdeen area these days with an excellent team leading a thriving association covering a large area of the north east. This year they organised a one day spring conference on bee breeding, bringing in two excellent speakers to inform the membership and trigger debate and action. The event was held in the Kinnellar Hall, Blackburn, on 17th June. Eoghan McGiolla Coda is the son of Micheál, the father of Irish native honey bee breeding, and now himself also a native bee farmer and breeder in Ireland. Eoghan lives in Co Louth and runs 150 colonies of Irish native honey bees. Margaret Murdin is the Chair of the BBKA's Board of Trustees and runs 20 colonies in Lancashire. She is an experienced educationalist and is active in the BBKA's education and examination system.

Eoghan gave two talks, on the biology and origins of the native honey bee and on methods of improving stocks and raising queens. Margaret spoke to us on all aspects of the biology of queens and also gave us a tour de force on the scoring and selection of local bees for desirable traits. The enthusiasm in Aberdeen for practical action to improve bees locally was tangible and the turnout for an all-day event in the main swarming season was impressive. Bernard Mobus, the beekeeping adviser at the North of Scotland Agricultural College through the 1970s and 80s, would have been delighted to see that there is a commitment to restart some of his breeding work in the area, despite the extensive mixing with imports since his time.

An experiment in distributing native honey bee material

by Ewan Campbell

It's early September and up here in Aberdeenshire the drizzle and grey clouds have moved in with an air of permanence. Along with the skeins of Pinkfoot and Greylag geese for me this weather heralds the end of the summer and the start of autumn. It also generally means the end of queen rearing. The few remaining active mini-nucs and Apideas in my back-garden apiary are getting relentlessly hammered by wasps. In a few days, they will be emptied as I will use the queens to replace older stock in full sized hives. Rearing queens is remarkably simple and hopefully the lucky ones of you that attended the Ochil Breeding Group queen rearing workshops in August will have had some of the mythos and mystique of raising your own stock removed!

One of the major objectives of the SNHBS is to get native bees out to members that are keen to start breeding groups and raise their native stock. Early in the summer the committee discussed a small trial to find simple, effective and cheap ways of getting material to members. We would love to be able to offer large numbers of mated native queens but the effort required and considerable costs of large scale queen production are simply too prohibitive at the moment.

It was in these discussions that we hit on the idea, from old scientific papers, discussions with researchers and existing knowledge from our own Andrew Abrahams, that we could, relatively easily, get around the queen rearing part by simply getting eggs / young larvae to members. This material could then be introduced into hives ready for queen rearing (queenless or Ben Harden set-up etc) and the resultant virgin queens would be of native stock. Of course, her worker offspring genetics will depend on what drones she mates with ... but crucially all her drone offspring will be complete pure original native stock as the drones take no genetic input from the paternal side. If members use these colonies as drone producers then future reared eggs / larvae will have a good chance of mating with the pure native drones.

The issue was how to move eggs and larvae about ... and does it work?!

In July I contacted Amanda Clydesdale and Gavin Ramsay about plans to test a simple method. At this point it didn't really matter if the colonies were native or not as it was the viability that was being tested ... but Amanda had some eggs and young larvae on nice new comb from native stock which seemed a good opportunity not to miss. A week prior to the trial I readied a non-native aggressive colony that needed the queen replaced by removing the queen and, over the next week, I removed any developing queen cells to make the colony hopelessly queenless.

Amanda simply cut a few chunks of eggs / larvae from her native colony in the Borders, wrapped them in damp kitchen roll and popped into very small cheap Tupperware boxes and posted next day delivery to my house in Aberdeenshire. The weather over the trial period was fairly good, about 18°C and from posting to arrival was only 24 hours. Unfortunately, my real job (still bee related!) gets in the way of beekeeping so I actually never got hold of the package until that evening. When I went out to the hives I opened my grumpy queenless hive – a big double-box Langstroth – removed a frame from the centre of the brood box and cut a similar sized shape of wax / honey to the pieces Amanda had sent. I then added Amanda's pieces to the frame and closed up.

A few days later I returned to the hive and the bees had started rearing six Queen cells from this material. Bingo! I had to leave Aberdeenshire for a while and decided to leave the hive with all six cells and harvest five on return for mating nucs. Unfortunately, this part went a bit awry as I was delayed. One of the queens emerged and destroyed the rest but other than that it has proceeded smoothly. The queen got mated and the colony is now in good shape and headed by a native queen and producing pure native drones. I plan on using this colony as a drone producer next season – success!



Top: Tupperware with donated eggs; Bottom left: eggs positioned on comb; and right; fixed in place.

The method was simple, cheap (about £10 for next day delivery but I suspect it could be made cheaper) and effective. I could have theoretically had six queens from these very small pieces of material.

We did try a second trial to refine the method but alas the summer was fast running out! Gavin Ramsay sent me material from some of his native colonies and this time we decided to send strips of eggs. These were posted fine and arrived next day. With a strip of cells, it is possible to attach them to the top bar of a frame with a bit of melted wax in a long line facing downwards, which meant there was far better potential for the bees to start a large number of queen cells. Unfortunately, mother nature intervened at this point and our washout end to the summer arrived. My bees never started any queens from this second attempt although it must be noted that none of my usual queen raisers attempted starting cells during this period so I believe it was nothing to do with the material from Gavin. We intend on carrying out a second medium-sized scale trial between multiple members early next season and then afterwards starting to send out material in a larger scale. A large proportion of SNHBS members are already experienced queen breeders but key to any new or updated methodology such as posting of genetic material is making the methods simple, cheap and effective. Thanks to Amanda, Gavin, Emily and Kate for your input and the posters on SBAi and Andrew for their knowledge!

If you are interested in future trials then we will be planning next year's early trial soon.

Up-and-Coming Winter Workshop

by Ewan Campbell

This November SNHBS will be holding a native honey bee identification workshop for the membership. We see this as the first step on the path toward carrying out a large-scale survey of native bee populations and stock in Scotland in 2018 and beyond. Key to a survey of this scale is the accurate identification of stocks and the workshop will have hands-on demonstrations and practicals on using the currently available tools at our disposal as well as some of the more expensive genetic tools which we may employ at a later date.

The workshop will take place on Saturday November 18th from 10:00 – 16:00 at the University of Aberdeen in one of their large state-of-the-art teaching laboratories. Numbers will be limited but the facility is large enough to accommodate a relatively high attendance.

The day will include grouped practical sessions on:

1. Image analysis of exemplar native bees and also of members' own stocks (get snapping!).
2. Microscopy of samples looking at various traits of native honey bees vs other subspecies.
3. Morphometry of wings and practical demonstration of analysis using DrawWing and Morphplot as well as a discussion of its uses as a practical tool.
4. DNA analysis will be discussed and there will be examples of a simple RFLP-PCR method to show maternal lineage in bees.
5. Discussion of the planned survey of native stocks and how to get involved.

Further notice will go out to the membership when plans are finalised on how to book and what will be included. It is likely that the only fee will be a donation. To keep costs down and due to University catering rules participants would be advised to bring a packed lunch, but teas and coffees will be provided.

We are really looking forward to the workshops and hope these will provide the membership with a springboard towards identifying native bee populations across Scotland.



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