

SCOTTISH BEEKEEPERS' ASSOCIATION

SCOTTISH APIARIAN CERTIFICATE

Issue November 2023

AIMS

To further improve the standard of beekeeping in Scotland by equipping beekeepers to manage their own bees to a very high standard and have the ability to pass on their knowledge to less experienced beekeepers and the general public.

1. To give knowledgeable beekeepers the confidence to mentor new and less experienced beekeepers and become the trainers of the future.
2. To give experienced beekeepers the confidence to give demonstrations on all aspects of practical beekeeping to other beekeepers and to the general public in a safe and competent manner.
3. To give experienced beekeepers the confidence to give lectures on a wide range of topics to groups of beekeepers and the general public.
4. To be able to carry out adult bee diseases diagnosis and give advice to others on the procedure to adopt if disease is found.
5. To give experienced beekeepers the opportunity to obtain the SCOTTISH APIARIAN CERTIFICATE.

CONDITIONS OF ENTRY

1. The Candidate shall have gained the SCOTTISH INTERMEDIATE PRACTICAL CERTIFICATE. The date when this certificate was obtained shall be entered on the application form.
2. The Candidate shall have owned and managed continuously at least five colonies of bees for at least seven seasons.
3. The appropriate application form and fees shall have been received by the Education Convener prior to the deadline published in the Scottish Beekeeper Magazine and on the SBA Website.

LOCATION OF EXAMINATION

The first two parts of the exam, the Practical and the Oral examination shall be held at an apiary with colonies unfamiliar to the candidate. The exam administrator shall arrange a suitable apiary.

The Demonstration part of the exam shall be held at a suitable apiary with at least 10 of an audience, including the two examiners.

The Lecture (Talk) part of the exam shall be held at a suitable ABA meeting with at least 15 of an audience including the two examiners.

Two examiners shall be present for all parts of the exam.

AWARD OF CERTIFICATES

- Exams shall be completed within a single season
Exceptions will only be made for exceptional circumstances - e.g. illness, weather, unavailability of venue or other criteria identified by the examiners.
A single season is defined as the year from final application date for the practical exams, beginning April to the end of March the following year.

- The SBA reserves the right to fail the candidate for a variety of reasons, including (but not limited to) illegal or unsafe activities, physical or verbal abuse, or actions that may bring the SBA into disrepute.
- Failing any part of the exam requires retaking the whole exam. Retaking only part may be allowed only at the discretion of the education sub-committee (again only for exceptional circumstances).
- Practical beekeeping exams, shall be completed early enough in the season to ensure colonies aren't too far into their winter plans and still have drones, brood etc.
- The marks sheet is a guide to the awarding of the exam based on suggested topics taken from the syllabus - however examiners may ask questions on any topic from the syllabus at their discretion. (This covers situations where a question is asked off topic and it leads to an issue resulting in a failure, even though it wasn't strictly an item on the marks sheet).

The SCOTTISH APIARIAN CERTIFICATE will be awarded at three levels- Pass 60%, Credit 70% & Distinction 80% but, the award will be made based on the minimum % of the 4 sections of the exam -Section A - Manipulations, Section B -Oral questions, The Demonstration and the Lecture e.g. If the marks in 3 of the sections are above 80% but the mark in one section is between 60 and 69% then the Apiarian will be awarded at Pass level. Less than 60% in any one section will lead to a fail.

A Candidate who has gained the SCOTTISH MICROSCOPY CERTIFICATE will not be required to sit the DIAGNOSIS OF ADULT BEE DISEASES section of the Practical Examination – Section A Pt 2, but shall be required to answer the oral section on diseases.

A Candidate who has gained the SCOTTISH HONEY JUDGE CERTIFICATE will not be required to sit the PRODUCTS OF THE HIVE section of the oral examination(Section B Pt 4).

The candidate shall be informed of the results of the examination in writing within 2 weeks of the completion of the final part of the exam. In the case of failure helpful advice on the problem areas shall be provided. If an unsafe practice leading to a failure is observed during the exam, this will not be disclosed to the candidate at that point and that part of the exam shall continue.

SYLLABUS

Introduction

The Examination consists of four parts a) a Practical Examination, b) an Oral Examination, c) conducting an Apiary Demonstration, d) giving a Lecture to a Local Association Meeting

General

- 1.1 The Candidate shall bring his apiary records to the exam including the past five years of Veterinary Medicines records
- 1.2 The Candidate shall provide all equipment for opening and handling colonies and performing manipulations at the request of the Examiner.
- 1.3 The Candidate shall provide microscopes and other equipment for checking for adult bee diseases.
- 1.4 The Candidate shall provide a suitable sample of freshly killed bees for checking for adult bee diseases.
- 1.5 The apiary demonstration will be held at a nearby Local Association 'field day'.

- 1.6 The lecture will be held at a Local Association (eg. evening) meeting.
- 1.7 For 1.5 and 1.6, above, the audience, other than the organising committee, need not be aware that the Candidate is under examination. The Candidate will be expected to answer questions from the audience, including the examiners in both instances.
- 1.8 The examination will be conducted in three parts (Sections 1.1 – 1.5, 1.6 and 1.7).
Separate Examiners may conduct the three parts of the examination.
- 1.9 The assessments will be arranged to the mutual convenience of the candidate and the Examiner(s) and, for 1.5 and 1.6, a Local Association Organising Committee.
- 1.10 Two Examiners, approved by the Education Committee will conduct each part of the examination. Each examiner shall complete a mark sheet and in the case of mark discrepancies the averaging system outlined in the mark sheets shall be used. One of the examiners shall report the agreed mark to the exam administrator
Normally, except for the DEMONSTRATION and LECTURE, only the Examiners and the Candidate will be present. Should the Education Committee wish a Trainee Examiner or a member of the Education Committee to be present as an observer, the Candidate will be informed prior to the examination.
- 1.11 Although some of the material in the Apiarian will have been covered in the Intermediate Practical Exam, the Apiarian questions will be more searching, and the candidate will be expected to give more comprehensive answers.

(A) Practical Examination

1.0 MANIPULATION – Approximately 30 minutes

- 1.1 Manipulations will be performed with due regard to the welfare of the bees and the safety of spectators.
- 1.2 The Candidate will explain the procedure being performed as if they were demonstrating to an audience.
- 1.3 Two manipulations will be carried out at the request of the Examiners and will be chosen from the following list:
 - (i) finding, clipping and marking a queen, (using a drone if necessary),
 - (ii) inspection for brood diseases,
 - (iii) requeening a colony,
 - (iv) uniting two queenright colonies,
 - (v) a method of swarm control,
 - (vi) testing for varroa resistant to a particular miticide
 - (vii) perform a shook swarm
 - (viii) perform a Bailey comb change

The candidate shall answer questions related to the manipulation being performed. These questions shall involve the benefits and drawbacks of the manipulations being carried out.

2.0 DIAGNOSIS OF ADULT BEE DISEASES – 45 minutes

The Candidate shall be able to:

- 2.1 set up and use a dissecting and a compound microscope including set up and focussing of the condenser and light source on the compound.

- 2.2 demonstrate the method of checking for Acarine disease and describe what they would expect to see if Acarine was present
- 2.3 demonstrate the method of checking for Nosema apis, Nosema ceranae and Amoeba and describe what they would expect to see if any of these diseases were present
- 2.4 explain what action to take should any of the above diseases be found.

3.0 **QUEEN REARING - 30 minutes**

The Candidate shall be able to carry out two of the following manipulations at the request of the Examiner:

- 3.1 demonstrate a method of obtaining five to ten queen cells from a strong queenright colony which is not preparing to swarm;
- 3.2 demonstrate how to prepare a nucleus to receive a sealed queen cell for mating purposes and explain the precautions to be taken to optimise the chances of obtaining a mated queen;
- 3.3 demonstrate the method of making up a cell raising colony suitable for introduction of grafted larvae;
- 3.4 demonstrate a method of selecting larvae suitable for grafting and grafting them into prepared queen cups and answer questions related to the manipulations being performed.

(B) Oral Examination – 45 minutes

1.0 **PRACTICE OF BEEKEEPING**

Much practical beekeeping will have been examined during the Scottish Intermediate Practical examination.

The Candidate shall be able to discuss:

- 1.1 advice to be given to beginner beekeepers on purchase of equipment, acquisition of bees and pitfalls for the unwary.
- 1.2 the concept of bee space and how it is applied in hive construction
- 1.3 the range of hives and frame types available on the British market, their strengths and weaknesses
- 1.4 the merits and demerits of various methods of frame spacing
- 1.5 the optimum site for an apiary and the criteria used to decide the number of colonies which it can contain profitably
- 1.6 the problems associated with drifting and how it can be minimised
- 1.7 how and when to feed bee colonies and nuclei to avoid their being robbed out
- 1.8 the causes and dangers of robbing and methods of dealing with it once started
- 1.9 the value of good nutrition in the development of a colony
- 1.10 the management of colonies for the production of honey from:
 - (i) oil seed rape,
 - (ii) bell heather,
 - (iii) ling heather;
- 1.11 the management of colonies for the production of cut comb and section honey
- 1.12 natural and artificial swarming
- 1.13 methods of handling bad tempered colonies so that they do not become a nuisance to apiary visitors and members of the public

1.14 how to requeen a very bad-tempered colony.

2.0 HONEYBEE DISEASES, PESTS AND POISONING

The Candidate shall be able to discuss:

- 2.1 the field diagnosis of AFB and EFB, action to be taken if either is suspected and how these diseases are spread
- 2.2 the destruction of diseased colonies and subsequent sterilization of hives and personal equipment
- 2.3 methods of monitoring for the presence of varroasis and associated viruses and Integrated pest management methods for its control
- 2.4 the signs, cause and possible treatment of chilled brood, chalk brood and sac brood
- 2.5 the method of fumigating combs with glacial acetic acid, including precautions taken
- 2.6 the signs and symptoms of poisoning by natural substances, pesticides, herbicides, fungicides and other chemicals and the actions to be taken if poisoning is suspected
- 2.7 the crops likely to be sprayed with chemicals harmful to bees and precautions which can be taken to protect colonies when notification of intention to spray has been given
- 2.8 the damage by wax moths to stored combs and methods of preventing this infestation
- 2.9 other potential pests and diseases which might be found in Britain in the future.

3.0 BREEDING HONEYBEES

The Candidate shall be able to discuss:

- 3.1 their method of record keeping
- 3.2 the criteria used when selecting breeder queens and drone colonies
- 3.3 the recognition of queen cells produced under emergency, supersedure and swarming Impulses
- 3.4 methods of obtaining five to ten good quality queens
- 3.5 the formation of nuclei, including mini-nucs, for the purpose of queen mating
- 3.6 methods of introducing mated queens
- 3.7 the setting up of mating nuclei and precautions to be taken
- 3.8 the mating behaviour of virgin queens and drones including the roles of pheromones and drone congregation areas
- 3.9 the recognition and possible causes of laying workers and drone laying queens and methods of dealing with these
- 3.10 the recognition of in-bred queens and their effect on worker numbers
- 3.11 the relative merits of clipping and marking queens and the optimum time to perform these tasks.

4.0 PRODUCTS OF THE HIVE

The Candidate shall be able to discuss:

- 4.1 the main regulation requirements for extraction premises and labelling of honey packs
- 4.2 methods of uncapping, extracting and straining honey
- 4.3 methods of dealing with oilseed rape and ling honey
- 4.4 methods of storing honey including ideal temperatures
- 4.5 how to control the level of HMF

- 4.6 methods of determining the moisture content of honey
- 4.7 the production of liquid honey for sale including a method of delaying granulation for up to six months
- 4.8 the production of soft set honey for sale by seeding, suggesting temperatures to obtain optimum results
- 4.9 the preparation of cut-comb, section and chunk honey for sale
- 4.10 how honey can be spoiled, with reference to moisture content, temperature and the presence of yeast
- 4.11 the factors affecting nectar secretion and variations in its composition in different plant species
- 4.12 the origin and characteristics of honeydew
- 4.13 a method of recovering saleable beeswax from old combs and cappings
- 4.14 the commercial uses of beeswax, pollen, propolis and venom.

(C) DEMONSTRATION — 20 to 40 minutes, as required

- 5.1 The Candidate shall give a demonstration of some aspect of practical beekeeping at a Local Association 'field day'. The subject to be chosen shall fit into the programme devised by the Local Association in consultation with the Administrator and Examiners.
- 5.2 The Candidate shall have carried out a written risk assessment prior to the demonstration.
- 5.3 The Candidate shall carry on a running commentary while demonstrating and be able to answer questions posed by members of the audience.

(D) LECTURE — 25 to 60 minutes, as required

- 6.1 The Candidate shall give a lecture at a Local Association meeting, probably during an evening, on a topic chosen by the Candidate in consultation with the Local Association and the Examiner
- 6.2 The lecture shall consist of a short introduction to the chosen topic, followed by the body of the lecture and finally a short summary or list of main points.
- 6.3 The Candidate will be expected to make full use of visual aids and/or a PowerPoint presentation as appropriate.
- 6.4 The Candidate will answer questions posed by members of the audience.

7.0 SUGGESTED TOPICS FOR LECTURE AND DEMO (to be agreed with examiners and hosting Local Association)

- 1. Autumn and winter management.
- 2. Spring management.
- 3. Fumigation of combs.
- 4. Feeders and feeding.
- 5. Supers and supering.
- 6. Monitoring for varroa.
- 7. Integrated pest management.
- 8. AFB and EFB.
- 9. Reading a colony.
- 10. Three types of queen cells.
- 11. Swarming.
- 12. Methods of swarm prevention.

13. Swarm control.
14. Artificial swarming.
15. Demaree method of swarm control.
16. Clearing supers.
17. Extraction of honey.
18. Making and using nuclei.
19. Queen rearing.
20. Uniting colonies.
21. Honey production.
22. Comb honey production.
23. Recognition and treatment of laying workers and drone laying queens.
24. Preparation of soft set honey.
25. Honey labelling regulations.
26. Hygiene regulations when handling honey.
27. Record keeping, including medicinal records.
28. Nectar and pollen sources in your area.
29. Introduction to bees and beekeeping
30. Choosing hives and frames.

Reading List

The Apiarian reading list is included in the reading list table in the exam section of the SBA website

UPDATES –Nov 2023 Updated to reflect changes to the award of certificate at Pass 60%, Credit 70% and Distinction 80% and from the award being made based on the lowest mark section of the exam i.e. if the lowest section achieved is at Pass level, then the overall award will be a Pass.

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