

# APPLICATION TO ENTER

## Application to Enter

Should be made through the Local Examination Secretary of the County Beekeeping Association or directly to the BBKA Examinations Board Secretary at the Address given below. Applications are required not later than 28<sup>th</sup> February in the year the assessment is to be taken.

## Application Form

Any application must be accompanied by a completed Application Form together with the Examination Fee. Cheques should be made payable to BBKA. The dates when relevant certificates were obtained must be entered on the Application Form. Certificates should not be sent.

Ensure that the Certificate of Qualification, on the Application Form, is completed by a Competent Person.

## Assessment Fee

The current fee for the Assessment may be obtained from the Local Examination Secretary or the Board Secretary.

## AUTHORITY

The above is issued by the BBKA Examinations Board and all communications in respect of this Assessment should be addressed to:

The Secretary,  
BBKA Examinations Board,  
The British Beekeepers' Association,  
National Agricultural Centre,  
Stoneleigh Park,  
Kenilworth,  
Warwickshire.  
CV8 2LG

Price £1:00

Published October 2003

# Advanced Certificate in Beekeeping Husbandry

## PROSPECTUS

### Aims

Candidates for this assessment will be experienced beekeepers who wish to:

- give informative lectures to the public and other beekeepers on a wide range of practical beekeeping topics;
- carry out adult bee disease diagnosis by dissection of suitable samples of honeybees, examining the preparations under the microscope and recognising the presence of the pathogens associated with Amoeba disease, Nosema and Acarine;
- safely and competently demonstrate to others how to manipulate colonies of honeybees in order to control swarming, rear queens, make increase, examine for disease, detect and solve other potential problems;
- provide advice to individuals on a range of beekeeping topics.

### Conditions of entry

- The candidate shall have been awarded the BBKA General Certificate in Beekeeping Husbandry or an equivalent certificate acceptable to the Board. The date when this certificate was awarded shall be entered on the application form to enable verification.
- The candidate shall have managed honeybees for at least five years and will be managing at least five production colonies at the time of the Assessment.
- The secretary to the Board shall have received a completed Application Form and fee by the 28th February in the year the candidate wishes to be assessed for this award. Application forms can be obtained from the BBKA National Beekeeping Centre.

### Assessment

- The assessment will normally be carried out during the active beekeeping season at the BBKA National Beekeeping Centre at Stoneleigh by assessors appointed by the Board on a day determined by the Board. The Board reserves the right to use alternative venues if the situation requires it.
- The candidate will be asked to complete a series of tasks. The order in which the tasks are undertaken will be determined by the assessors.

### **Task 1: A presentation/ lecturette (of about 15 minutes duration)**

- This activity will test candidates' ability to communicate to an audience.
- The topic for the presentation will be of a practical beekeeping nature chosen by the candidate from the list provided by the Board. This list will be forwarded to the candidates at least eight weeks prior to the assessment to allow candidates sufficient time to prepare their lecture notes and visual aids. The quality and relevance of the lecture notes and visual aids will form part of the assessment.
- A wipe board, marker pens, flipchart, OHP or slide projector can be provided on request. Candidates wishing to deliver their lecturette with the aid of computer presentation software (e.g. Microsoft® PowerPoint) or other aids must provide all the necessary equipment required.
- The audience will include the assessors and other invited beekeepers. The candidate will be expected to answer relevant questions on their topic asked by members of the audience. The candidate's ability in answering these questions will form part of the assessment.

### **Task 2: Adult bee disease diagnosis 30 - 45 minutes**

Candidates will provide microscopes (and associated equipment) and a suitable sample of freshly killed honeybees. They will be expected to demonstrate skills in:

- dissecting honeybees to enable the detection of the acarine mite;
- preparing microscope slides for detection of parasitic protozoans' ( nosema and amoeba);
- setting up and using a microscope;
- recognising the presence of the organisms responsible for adult bee diseases and/or describing what they would expect to see under the microscope;

The candidate will also be expected to answer questions about:

- how the samples were obtained, killed and the significance of sample size;
- the use of the microscope and its component parts;
- The action a beekeeper can take if any of the adult bee diseases are confirmed.

(Candidates awarded the BBKA Microscopy Certificate may be exempt from this task)

### **Lecturette Topics**

- 1) Swarm control.
- 2) Compare and contrast AFB and EFB.
- 3) The spring management of honeybee colonies.
- 4) Autumn management.
- 5) Clearing honeybees.
- 6) The effects of stings and suitable first aid treatment.
- 7) The regulations for handling, packing and selling honey.
- 8) The management of honeybees for the production of oil seed rape honey.
- 9) The management of honeybees for the production of ling heather honey.
- 10) The extraction and bottling of oilseed rape or heather honeys.
- 11) Why keep honeybees?
- 12) The storage of honey.
- 13) Preparation of soft set and liquid honey.
- 14) Management for comb production.
- 15) Fumigation of combs.
- 16) The control and treatment of varroa.
- 17) The control and treatment of nosema.
- 18) The detection of laying workers and drone laying queens and how to deal with them.
- 19) Conducting a public demonstration of beekeeping., including risk assessment.
- 20) Advising potential beekeepers on how to start and then continually improve their knowledge and skills in beekeeping.

## Bee Breeding

The candidate shall be able to answer questions and discuss:

- 4.1 the criteria used to select breeder queens and drones;
- 4.2 a system of record keeping used in the assessment of queens and their progeny;
- 4.3 methods of queen rearing suitable for a beekeeper with five to ten colonies and methods more suitable for larger scale queen rearing operations;
- 4.4 a method (in outline) of instrumental insemination and assess the role this technique could play in honeybee breeding;
- 4.5 alternative methods of queen introduction; the principles underlying the processes involved; the precautions to be taken; and the attendant difficulties in relation to different strains of bee and colony condition;
- 4.6 The setting up of mating nuclei and precautions that need to be taken;
- 4.7 give an account of the races and strains of honeybee commonly used by beekeepers in Europe with particular reference to their appearance and behavioural characteristics;
- 4.8 the genetic basis of sex determination in the honeybee including parthenogenesis;
- 4.9 the mating behaviour of honeybee queens and drones including the roles of pheromones and drone congregation areas;
- 4.10 the causes of drone laying queens and laying workers and ways to recognise the presence of these in a colony;
- 4.11 ways of dealing with colonies with laying workers and drone laying queens;
- 4.12 the signs of queenlessness and how this may be confirmed;
- 4.13 methods of marking and clipping queens and the advantages and disadvantages of these practices;
- 4.14 how to distinguish between queen cells produced under emergency, supersedure and swarm impulses.

## Task 3: Manipulation of colonies of honeybees 30 minutes

- Colonies of honeybees and all necessary equipment except protective clothing will be provided by the Board.
- All manipulations will be carried out with due consideration for the safety of the bees and the audience. The candidate will be expected to manipulate one or more colonies of honeybees and provide a running commentary as if demonstrating to an audience of beekeepers or non-beekeepers.
- An understanding of the need to carry out a risk assessment for public demonstrations of beekeeping will be required.
- The candidate will be expected to carry out two of the following manipulations:
  - find the queen, mark and clip her and release her back into the colony; (A drone may be substituted for the marking and clipping)
  - make up a nucleus suitable for the purpose requested by the Assessor;
  - a swarm control method using the equipment provided;
  - brood disease inspection;
  - requeen a large potentially aggressive colony with a queen from a better strain;
  - Unite two or more colonies together. These colonies may vary in size.
- The candidate will be expected to answer questions relating to any of the above.

## Task 4 : Practical aspects of queen rearing 30 minutes

Colonies of honeybees and all necessary equipment will be provided by the Board

The candidate will be expected to carry out two of the following manipulations.

- demonstrate the making up of a shook swarm suitable for introduction of grafted larvae;
- demonstrate the selection of suitable larvae and their grafting into prepared queen cups;
- demonstrate the transfer of a sealed queen cell into a mating nucleus taking adequate precautions to protect the cell.
- The candidate will be expected to answer questions on selection of breeder queens, queen mating and alternative methods of queen rearing.

### Task 5: Interview 40 minutes

Attend assessors to answer a series of questions and discuss a range of beekeeping topics.

The range will be limited to those topics outlined in the syllabus.

- 3.17 the scientific names of the causative organisms associated with diseases of honeybees;
- 3.18 an outline account of the life cycle of *Braula coeca*, its effect on the colony and a description of the differences between adult braula and varroa;
- 3.19 an outline account of the signs and symptoms of poisoning by natural substances, pesticides, herbicides and other chemicals to which honeybees may be exposed;
- 3.20 a list of crops most likely to be sprayed with chemicals harmful to honeybees;
- 3.21 a detailed description of the action to take and practical measures possible when prior notification of application of toxic chemicals to crops is given;
- 3.22 an outline description of a spray liaison scheme operated by a beekeeping association;
- 3.23 an account of the action to be taken when spray damage is suspected;
- 3.24 a description of the damage caused to colonies and equipment by mice, woodpeckers and other pests and ways of preventing this;
- 3.25 a detailed account of wax moth damage and the life cycle of both the lesser and greater wax moth (*Achroia grisella* and *Galleria mellonella*);
- 3.26 a detailed account of methods of treating or storing combs with particular reference to preventing wax moth damage;
- 3.27 an awareness of other honeybee pests and diseases that may enter the United Kingdom.

## Honeybee Diseases, Pests and Poisoning

The candidate shall be able to answer questions and discuss:

- 3.1 methods of monitoring and maintaining the health of colonies;
- 3.2 the concept of Integrated Pest Management in relation to beekeeping;
- 3.3 the field diagnosis of American Foul brood (AFB) and European Foul Brood (EFB) and the signs of these two diseases;
- 3.4 the development of AFB and EFB within a colony and the ways in which AFB and EFB are spread from one colony to another;
- 3.5 the treatment of colonies infected with EFB and AFB including methods of destruction of colonies and the sterilisation of equipment;
- 3.6 the statutory requirements relating to foulbrood and varroosis in the United Kingdom;
- 3.7 the life cycle and natural history of *Varroa destructor* including its development within the honeybee colony and its spread to other colonies;
- 3.8 the signs of varroosis describing methods of detection and ways of monitoring the presence of the varroa mite in honeybee colonies;
- 3.9 methods of treatment and control of varroosis currently available in the United Kingdom;
- 3.10 the detection and control of resistant varroa;
- 3.11 the cause, signs and recommended treatment (if any) of the following brood diseases and conditions: chalk brood, sac brood, chilled brood, bald brood, neglected drone brood and stone brood;
- 3.12 the cause, signs and treatment (if any) of adult bee diseases currently found in the UK; these diseases to include nosema, dysentery, acarine, amoeba disease, chronic bee paralysis virus (both syndromes);
- 3.13 an outline of the life cycles of the causative organisms of adult honeybee diseases;
- 3.14 the laboratory methods of diagnosis of acarine, nosema and amoeba disease in worker honeybees;
- 3.15 the fumigation of combs using ethanoic acid (acetic acid) including the safety precautions to be taken;
- 3.16 a description of the effects of acute paralysis virus and an elementary account of other viruses affecting honeybees including their association with other bee diseases where applicable;

## Advanced Certificate in Beekeeping Husbandry

### SYLLABUS

#### Practical Beekeeping

The candidate shall be able to answer questions and discuss:

- 1.1 how to begin beekeeping, including the acquisition of honeybees, sources of equipment, costs and any precautions necessary;
- 1.2 the types of hives and frame used by beekeepers in the United Kingdom;
- 1.3 the concept of bee space;
- 1.4 the use of foundation;
- 1.5 methods of fitting frames with wax foundation including wiring and embedding;
- 1.6 methods of spacing frames in hives, the usual measurements used and the advantages and disadvantages of varying the spacing;
- 1.7 the use and types of queen excluder used in the United Kingdom;
- 1.8 the criteria used in the selection of apiaries and the siting of colonies within them at home and in out-apiaries;
- 1.9 good apiary hygiene;
- 1.10 the drifting of honeybees, the dangers caused and arrangements made to minimise the problem;
- 1.11 the work in the apiary and how this is dependent upon the annual colony cycle and the timing of local bee forage;
- 1.12 the value of honey and pollen to the honeybee colony;
- 1.13 the production and use of pollen supplement and substitutes;
- 1.14 the assessment of the quality of a colony for honey production;
- 1.15 the management needed to cope with different districts, weather conditions and the timing of the flowering of the major forage plants;
- 1.16 management of honeybee colonies for honey production from oil seed rape and ling heather;

- 1.17 the management of colonies for the production of comb honey (sections and cut comb);
- 1.18 the management of colonies used for migratory beekeeping for both honey production and pollination services;
- 1.19 the use of honeybees as pollinators in orchards and fields of seed crops including arrangements to be made with the farmer/grower;
- 1.20 moving colonies and the difficulties and dangers involved;
- 1.21 the methods of making nuclei and the uses to which nuclei can be put;
- 1.22 the setting up, and management throughout the season, of an observation hive, and the uses to which it can be put;
- 1.23 the conditions leading to swarming
- 1.24 summer management including methods of prevention, detection and control of swarming suitable for use in small and large beekeeping enterprises;
- 1.25 methods of taking and hiving swarms of honeybees;
- 1.26 the principles of supering honeybee colonies and the relationship between supering and swarm prevention;
- 1.27 how swarms and nuclei can be turned into productive colonies;
- 1.28 the conditions leading to supersedure;
- 1.29 the methods used to unite colonies of honeybees, the underlying principles of these methods and any precautions that should be taken;
- 1.30 robbing by honeybees and wasps and its associated dangers, including prevention and curtailment;
- 1.31 different methods of "clearing" honeybees from supers;
- 1.32 how colonies are prepared for the winter period and the principles underlying this preparation;
- 1.33 the principles involved in feeding honeybees, including types of feeder, amounts of food, types of food and timing of feeding;
- 1.34 the variable temperament of honeybees in relation to management and public relations;
- 1.35 the actions which can be taken to avoid bad-tempered honeybees causing a nuisance to members of the public;
- 1.36 the effect of honeybee stings and recommended first aid.

## Bee Products

The candidate shall be able to answer questions and discuss:

- 2.1 the main requirements of the current UK statutory regulations affecting the handling, preparation for sale, composition, labelling and weight of packs of honey;
- 2.2 the methods used to decap honeycombs and separate the cappings from honey;
- 2.3 the extraction of honey from combs and the types of extractor used;
- 2.4 the techniques involved in overcoming problems associated with the extraction of ling heather honey and oil-seed rape honey;
- 2.5 the straining and settling of honey after extraction;
- 2.6 the storage of honey including the underlying principles of storage;
- 2.7 the preparation and bottling of liquid honey including ling heather honey;
- 2.8 the preparation and bottling of naturally granulated, soft set and seeded honey;
- 2.9 the process of granulation in honey including factors that affect its speed, crystal size and the texture of the final product;
- 2.10 the preparation of section, cut-comb and chunk honey for sale;
- 2.11 methods of determining the moisture content of honey;
- 2.12 the properties of honey including relative density (specific gravity), refractive index, viscosity, hygroscopicity, reactions to heat and ageing;
- 2.13 the spoilage of honey particularly by fermentation (including the effect of water content, storage temperature and the presence of yeast);
- 2.14 the major nectar and/or pollen producing plants of the United Kingdom and their flowering periods;
- 2.15 floral sources of undesirable nectar;
- 2.16 the factors affecting nectar secretion and the variations in its composition in different plant species and differing weather conditions;
- 2.17 the origins of honeydew with a brief description of the characteristics of honeydew honey;
- 2.18 methods of recovering saleable beeswax from used comb and cappings;
- 2.19 the commercial uses of beeswax, propolis, venom and pollen.