

**EXAMINATION BOARD FOR THE NATIONAL DIPLOMA IN BEEKEEPING AND THE UNITED KINGDOM CERTIFICATE IN BEEKEEPING.**

March 1994.

Paper 'A'.

Time allowed - 3 hours.

*Instructions to Candidates:-*

ANSWER FOUR QUESTIONS ONLY.

All questions carry equal marks.

Marks will be deducted for irrelevancy or for faulty English.

Marks will be awarded for clear diagrams where relevant.

1. You are a beekeeping adviser. What advice would you give to a beekeeper of 20 years experience now managing 15 colonies on:-
  - a) Dealing with 30 supers of solid crystallised oil seed rape honey?
  - b) The preparation of 500 1 lb jars of liquid honey from 35 lb buckets of crystallised honey. These are to be sold to a retail outlet in 50 jar quantities over a period of six months?
  - c) How to deal with 100 1 lb jars of set honey that have started to ferment on top?
2.
  - a) You have a very bad tempered queenright colony which you wish to requeen. Describe in detail the method you would use to introduce a purchased mated queen received through the post, giving the reasons for your method.
  - b) Describe how you would requeen a colony that had developed laying workers.
3. A beekeeper managing 100 colonies has lost 50 % of them in overwintering. Describe fully a system of management that could be used to make good the losses from the surviving colonies.
4. *"In the last 30 years there has been considerable change in the sources from which honey is obtained in the British Isles".* Discuss this statement.
5. Give an account of the use of insects other than the honey bee to pollinate commercial crops.
6. You have undertaken to give a course of six lectures on advanced practical beekeeping to an audience of reasonably experienced beekeepers. List the subjects you would choose and write brief notes on three of them.
7.
  - a) Give a full account of the "ten day system". Your account should include the principles on which the system is based.
  - b) Discuss the merits & demerits of the system.

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1.
  - a) Give a brief account of the classification of the Animal Kingdom.
  - b) Name 10 of the orders of the Class Insecta. State the common names of the insects covered by those Orders.
2. You wish to produce a set of microscope slides for reference purposes of the pollens of those plants whose pollens may be found in English honey. Each slide will depict the pollen of one plant.
  - a) List the plants you consider to be the most important.
  - b) Describe fully how you would produce the slides.
  - c) Describe the main features of pollen grains that are used for identification purposes.
3. Explain six of the following terms using diagrams where appropriate: meiosis; ovariole; enzyme, fat body; maxillae; gymnosperm; monocotyledon; pulvilli; dioecious.
4.
  - a) Give an account of the composition of honey bee venom.
  - b) Describe the effect of honey bee stings on human beings including allergic reactions and their treatment.
  - c) Describe methods of collection of venom and possible uses for it in the field of medicine.
5.
  - a) Describe, with diagrams, the location and general functions of the endocrine glands in the adult honey bee.
  - b) Explain the relevance of the endocrine glands in terms of caste determination, larval development and the division of labour within the colony.
6.
  - a) Describe the basic principles involved in the use of artificial insemination in bee breeding.
  - b) Explain what is meant by 'progeny testing' and the particular difficulties when applied to honey bees.
7. Discuss the role of water vapour in the hive with particular reference to its role in the overwintering process.