

Examination Board for the National Diploma in Beekeeping.

March 1998.

Paper A.

Time allowed - 3 hours.

Instructions to candidates:-

Read the questions carefully.

Answer 4 questions only.

Marks will be deducted for irrelevancy and faulty English.

Marks will be given for clear diagrams, where relevant.

All questions will carry equal marks.

1. What do you understand by apiary hygiene and what importance is it in the management of an apiary of 20 colonies?
2. Of recent years most of the positions of County Beekeeping Lecturers have disappeared and the craft of beekeeping has become less and less important in the curriculum of agricultural colleges and Institutions. Why has this occurred? Describe the arguments you would advance to persuade the Principal of your County Agricultural College that this is a short sighted attitude and beekeeping should form part of the curriculum of every agricultural establishment.
3. To many beekeepers a crop from oilseed rape is a mixed blessing. Describe the advantages of the crop, the problems that may arise from it and the methods by which the problems can be overcome.
4. You observe on an unusually warm day in February that the temperature in your home apiary is 14° C (57° F) and that the colonies are all flying moderately strongly and bringing in nectar and pollen. What deductions do you make from this observation? What sources of nectar and pollen would you expect to be available at this time of the year? Describe what is known about the temperatures at which honey bees can fly.
5. Discuss briefly any Five of the following:-
 - a) The prevention and control of swarming.
 - b) The current legislation in respect of honey bee diseases.
 - c) The processing of beeswax.
 - d) European Foul Brood.
 - e) The regulations applicable to the labelling and sale of honey.
 - f) The compulsory registration of beekeepers.
 - g) The use of visual aids in lecturing and teaching.
6. Discuss fully the impact that *Varroa jacobsoni* has had on *Apis mellifera*. Give your views on the long-term future of this disease.
7. A number of British beekeepers and scientists have made significant contributions to our knowledge of the honey bee; name Four who in your view have greatly influenced our beekeeping practices and give brief accounts of their work.

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1. *"The trouble with people is not that they don't know but they know so much that ain't so"* Josh Billings, 1874.
The above was applied by Professor Len Heath to the assumptions made in the past about Chalk Brood (*Ascosphaera apis*.) Describe how conventional or historical views on the nature and spread of Chalk Brood have altered in the past twenty years.
2. Give an account of the pheromones used within honey bee populations.
3.
 - a) Describe the main bumble bee species to be found in the British Isles, with brief descriptions of their nesting habits and colony development throughout the season.
 - b) Explain how the water requirements in these species vary from those of *Apis mellifera*.
4. You are asked to give a lecture on the alternative methods of varroa control in use at the present time, other than "Bayvarol", "Apistan" and the removal of drone brood. Prepare notes for this purpose, drawing out the relevant difficulties and dangers known to exist with these alternative methods.
5.
 - a) Itemise the main factors involved in the crystallisation of honey.
 - b) Describe the effect of heating on bulk honey, giving the critical temperatures involved.
 - c) Explain the importance of H.M.F. in relation to honey prepared for sale.
6.
 - a) Describe the factors affecting queen /worker determination in *Apis mellifera*.
 - b) Explain the phenomenon known as "laying workers" and the conditions under which it may become a problem within the hive.
 - c) How would you deal with a case of laying workers?
7.
 - a) There are mixed opinions in the beekeeping world regarding the existence of "drone assembly" areas. Give the popular definition of such a phenomenon and list the arguments "for" and "against" in this debate.
 - b) What would be the benefits to the honey bee within such an assembly?