

Diploma in Zoological Medicine

Please view the general documents to obtain copies of:

Introduction to RCVS Diploma Examinations
Timetable
Guidance Notes B.1 - for candidates on general requirements.
Application form E.1 - for enrolment and initial approval of experience.
Role of Advisers

The following papers are attached:

- B.2:** Specific Guidance Notes for the Diploma. These notes explain what is required in terms of experience and in terms of the content of the Diploma examinations.
- B.3** Guidance on the preparations of Dissertations
- C:** Syllabus and Commentary for the Diploma.
- D:** Reading list.
- E:** Application Forms E.1A, E.1B and E.2.
- E.1A** - for specific details of practice
- E.1B** Proposed title for Dissertation
- E.2** - for final approval of experience and for permission to submit an entry to the examination
- F.** List of Advisers – also refer to Lists of Diploma and Specialist holders in Register of Members.

A copy of the most recent Examination Question Paper is enclosed for your information.

April 2010

The Royal College of Veterinary Surgeons
Specialisation and Further Education

THE DIPLOMA IN ZOOLOGICAL MEDICINE

SPECIFIC GUIDANCE NOTES FOR CANDIDATES

[These notes must be read in conjunction with the B1 General Guidance Notes to Candidates]

MEMBERSHIP OF THE ROYAL COLLEGE OF VETERINARY SURGEONS

1. It is not a requirement of the Zoological Medicine Board that all Candidates entering for the Diploma are Members of the Royal College of Veterinary Surgeons (MRCVS).

SPECIFIC EXPERIENCE

2. The Diploma in Zoological Medicine allows candidates to select one of three specialty areas - **Avian, Mammalian or Reptilian** - in which to be examined in depth. A successful candidate's specialism is shown in brackets after the main title of the Diploma.

Approved Centre Route

3. Candidates following an approved training programme at an approved centre will not be permitted to enter for the examination until they have been Members of the College or held an approved veterinary qualification for **at least four years**. They are required to offer experience in the subject over **at least four years**.
4. **Applications for approval of a Centre must be made directly by the Centre to the RCVS and not by the candidate. An application form can be obtained from the RCVS.**

Approved Centres for Zoological Medicine

The following establishments have been granted Approved Centre status.

CENTRE	DIPLOMATE/ SPECIALIST	STATUS	APPROVAL YES/NO
Bristol Zoo Gardens (BZG) Veterinary Services Department	Ms S P Redrobe BVetMed BSc DZooMed(Mammalian) MRCVS	Expires Nov 2012	Approved Nov 2007
Royal (Dick) School of Veterinary Studies (Exotic Animal and Wildlife Service)	Ms A L Meredith MA VetMB CertLAS DZooMed MRCVS	Expires Nov 2012	Approved Nov 2007
Zoological Society of London Veterinary Department	Mr A D Routh BVSc CertZooMed MRCVS	Expires Nov 2011	Approved Nov 2006

(Incorporating London Zoo and Whipsnade Wild Animal Park)			
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Approved Practice Route

5. Candidates following the approved practice route will not be permitted to enter for the examination until they have been Members of the College or held an approved veterinary qualification for **at least five years**. They are required to offer experience in zoological medicine over either:

a. **at least five years including 200 days spent at an approved centre**

OR

b. **at least six years if gaining experience solely at an approved practice.**

6. **There is no separate application form other than the candidate applications forms included with this Information Pack. Practices are approved for each individual candidate.**

7. The Board has discretion to increase the requirements for experience for any candidate above the minimum specified if it is considered to benefit the candidate.

8. Experience accepted for the Certificate will count towards the experience required for the Diploma, at the discretion of the Board, whether the candidate is at an approved centre or an approved practice.

FINAL APPROVAL OF EXPERIENCE

9. Application on Form **E1B** must be made for approval of the proposed subject of the dissertation by **1 November**. No exemption is permitted. The Board recommends candidates to seek approval for their dissertation subject as early as possible during their period of enrolment.

10. An **outline** describing what the dissertation will cover and how much of the work will be undertaken by the candidate personally should be submitted with form **E1B**.

THE EXAMINATION

11. The examination consists of three Sections:

- (a) A Dissertation
- (b) TWO x 3 hour written papers, and
- (c) a clinical, oral and practical examination.

SUBMITTED WORK FOR EXAMINATION

Dissertation

12. Candidates must submit form **E1B** and an **outline** of their proposed dissertation either with their initial or final applications (E1 or E2) for approval of experience. Please see paragraphs 9 and 10.
13. Candidates may **not** use all or part of the work prepared and submitted for another postgraduate qualification including Diploma of Fellowship, as all or part of their dissertation for an RCVS Diploma.
14. **Three copies** of the dissertation should be submitted for examination. Dissertations need not be bound but should be submitted in a secure cover. **Candidates are asked to submit an electronic version of their submitted work together with their hard copy.** This will be retained at RCVS unless requested by the examiners for purposes such as checking the word count. The electronic version should be Microsoft Office 2000 or XP compatible and should be submitted on either CD or floppy disc/s. Please ensure that the disks are easily identifiable by placing them in an envelope with your name, and 'Electronic version of submitted work for Diploma in Zoological Medicine' marked clearly on the front.
15. Each copy of the dissertation should be accompanied by a declaration (template found in the B1 Guidance notes, Annex B). This should be inserted but not bound into the front cover of the dissertation.

Word Count

16. **A word count must be shown on the front cover of the Dissertation.** A dissertation should be between 5,000 and 10,000 words in length (excluding references and appendices) and **should not** exceed **10,000** words in total.

Grading Scheme

17. The submitted work will be graded "Good Pass"; "Pass" or "Fail".
 - **Good Pass** - the work will be lodged in the RCVS Library as a suitable example for future candidates.
 - **Pass** – The work is adequate to enable the candidate to proceed to the remaining sections of the examination, but the submitted work may need to be revised by the date of the clinical, oral and practical for lodging in the Library if the candidate is successful in the examination as a whole.

- **Fail** – the work is not adequate to enable a candidate to proceed to the remaining sections of the examination for the year in question.

WRITTEN EXAMINATION

18. Candidates are warned that answers should be given specifically and that illegible handwriting may result in examiners being unable to award marks for information which candidates intended to convey. In addition, the Examiners will take into consideration spelling and whether or not the question has been answered in the form requested.

Format

19. This Section consists of 2 three-hour written papers.
20. Written examination: there will be two 3 hour written papers. **Paper I** will be a general paper covering the whole syllabus and will consist of ten compulsory questions. **Paper II** will be on the candidate's chosen field (Avian, Mammalian or Reptilian) and will consist of six essay-type questions of which the candidate must answer three.

Marks Scheme

Paper I will be marked out of 50 marks

Paper II will be marked out of 50 marks

Total Mark for this Section (b) = 100 marks

CLINICAL, ORAL AND PRACTICAL EXAMINATION

21. Clinical, Oral and Practical examination: the emphasis will be on the candidate's chosen field. Normally the examination will be in two sections – the clinical/practical followed by the oral. The candidate may be asked to perform a post-mortem examination and will be required to wear clean footwear. Other instruments and protective clothing will be provided.

Marks Scheme

Clinical/Practical will be marked out of 50 marks

Oral will be marked out of 50 marks

TOTAL Mark for this Section (c) = 100 marks

SYLLABUS AND READING LIST

22. The Board wishes to stress the importance of extensive reading around the subjects of the syllabus, particularly of those books recommended in the reading list. It is suggested that candidates might find it helpful to practise their written examination technique - particularly in the time allowed for the papers.
23. A syllabus, with a brief commentary, and a reading list for the Certificate is provided for reference. There is no separate reading list for the Diploma as candidates at this level are expected to be familiar with all literature in the area of their elective and most particularly so in the topic of their dissertation or submitted papers.
24. Candidates should note that the reading list for the Certificate in Zoological Medicine was frozen in 2002 and will eventually be withdrawn (see reading list for further details).

ADVISERS

25. Candidates should consult the RCVS Register of Members for a suitably willing and qualified individual (someone holding a Diploma or equivalent) who is familiar with the RCVS Certificate and Diploma examination system and clinically active.
26. Candidates are urged to seek advice from their advisers.

ATTENDANCE AT SHORT COURSES

27. Candidates are urged to attend as many relevant meetings, symposia, conferences, etc., as possible, during their studies prior to the examination. Attendance will be taken into consideration by the Board when deciding whether to grant final approval of experience. Candidates are recommended to consult their adviser as to suitable courses.

MEMBERSHIP OF VETERINARY ASSOCIATIONS/SOCIETIES

28. Enrolled candidates should be Members of the British Veterinary Zoological Society and other societies appropriate to their chosen field.

ABBREVIATION FOR QUALIFICATION

29. Successful candidates are permitted to use the abbreviation **DZooMed(Avian)**, **DZooMed(Mammalian)**, or **DZooMed (Reptilian)**, as appropriate, after their names in the RCVS Register of Members, on practice plates, stationery etc.

The dissertation should be presented in the normal format for a scientific article unless there are strong reasons why this is not appropriate: any different format should be approved by the supervisor before the first draft is produced.

The normal sections are:

Introduction

This should include a brief review of the literature on the subject giving appropriate references. References may be cited in one of two ways e.g. 'Smith and Brown (1993) found that parasites increased in July' or 'Previous studies have shown that parasites increased in July (Smith and Brown, 1993)'.

It should be a critical review to indicate what is already known and where the gaps are in our knowledge which you have set out to remove. At the end of the introduction, it should be possible to say ' In the light of the literature I have reviewed, the aims of this study are to plug the following gaps by carrying out the following work' or something to the same effect!

Materials and methods

This should include an account of the animals or flocks or specimens used and the experimental methods and techniques you have used in order to obtain your results. There is no need to give details of well-known techniques but it is important that a reader should be able to repeat the work and certainly be able to decide on the reliability of your techniques, which obviously affect the value of your results. If you use techniques developed by other people, you should refer to a book or journal where the details are published.

Results

There should be a logical description of what you have found by the techniques you have described. This section may benefit by the inclusion of tables, graphs, figures or photographs which should have captions which are sufficiently self-explanatory to stand alone, though they should also be referred to in the appropriate part of the text. This section should not contain any comments on the significance of the results or to any inconsistencies or problems encountered.

Discussion

This section should contain a critical discussion of the significance of the results and of the extent to which the aims described in the introduction have been achieved. It should also relate the new findings to previous work and it may therefore be necessary to quote again some of the papers cited in the introduction but for a different purpose. In the introduction, it was to show

where the gaps were, here it is to show how your results agree, disagree or add to the previous work. Any conclusions or new ways of tackling the problem should be indicated here.

References

Unfortunately, there are a number of different ways used by different journals to list references in this list, so it isn't possible to lay down the one correct way! Since you might also wish to write your work as a paper for a journal, however, it is best to use a style which can be adapted to any journal, which means that the reference should be cited in full as follows:

Smith, M. J. and Jones, W. B. (1993). The seasonal fluctuations in parasite numbers in sheep in Britain. *Veterinary Record*, 134, 123 - 134.

A very careful check should be made to ensure that the references in the text are exactly the same as those in the list. (Trying this out on articles in any journal will give you a good idea as to the care with which the articles are edited by the authors or the journal).

Acknowledgements

This section gives you the opportunity to thank anyone who has helped with the work or the dissertation.

Appendices

If there is a great deal of detailed data such as laboratory findings, it may be helpful to place most of it in appendices with only summaries such as mean values in the results section.

Prepared by Professor M J Clarkson
April 1997

THE ROYAL COLLEGE OF VETERINARY SURGEONS
Specialisation and Further Education

DIPLOMA IN ZOOLOGICAL MEDICINE

Syllabus and Commentary for:
Diploma in Zoological Medicine (Avian)/(Mammalian)/(Reptilian)

Zoological Medicine has been defined by Professor Murray Fowler (Zoo and Wildlife Medicine, 1986) as 'a broad spectrum of disciplines involved with the medical problems of all animals not classed as companion animals or livestock'.

Subjects in which candidates may be examined are listed below. It is likely that there will be variation in the range of species with which candidates from different backgrounds within the three fields (Avian, Mammalian and Reptilian) will be familiar. It is, however, recommended that candidates should strive to obtain knowledge of a broad range of taxa within their field.

The syllabus and reading list are intended to guide candidates to a course of study which will focus and extend the knowledge gained from the Certificate in Zoological Medicine (or equivalent) into a depth and breadth of knowledge expected of a consultant in avian, mammalian or reptilian medicine.

Candidates for the Diploma examination will be expected to demonstrate that they have sufficient breadth and depth of knowledge to meet the demands of their professional role in their chosen field.

The purpose of the Diploma examination is to give the candidates the opportunity to demonstrate that they have gained the necessary knowledge, professional competence and practical skills to Diploma level.

Thus the knowledge, skills and attitudes required to pass the Diploma examination are those which would command respect and be regarded as authoritative amongst other veterinarians in the field. It is the College's aim that Diploma holders will give leadership in the field of Zoological Medicine.

It is recognised that Zoological Medicine is a diverse subject, involving many species and sub-disciplines, and that no single person has a deep knowledge of all its aspects. Accordingly, for the examination, a candidate must choose a subject which will be examined in depth (avian, mammalian or reptilian medicine). A candidate will be required to submit a dissertation on an approved subject. One written examination paper will be on the chosen field and the emphasis of the clinical, oral and practical examination will be on the chosen field, with the remainder of the written and clinical, oral and practical examinations being general.

1. Biology

- 1.1 *Phylogeny and taxonomy.* Candidates should have knowledge of the classification and evolutionary relationships of vertebrates and also some knowledge of the classification of invertebrates.
- 1.2 *Ecology, population and conservation biology.* Candidates should be able to demonstrate knowledge of the biology, population dynamics, status and distribution in the wild of the species with which they have a particular knowledge, and of conservation issues concerning these animals.
- 1.3 *Anatomy and physiology.* Candidates should have a broad knowledge of the diversity in anatomy and physiology within the animal kingdom. Candidates should also have knowledge of variation between species in metabolic rates, growth rates and other aspects of physiology relevant to veterinary science.
- 1.4 *Behaviour.* Candidates should have knowledge of the normal behaviour and social structures of a range of species.

2. Husbandry of captive and free-living populations

- 2.1 *Housing, management, restraint.* Candidates should be able to demonstrate knowledge of housing, restraint (physical and chemical), breeding management, capture, transport and, where appropriate, release techniques.
- 2.2 *Nutrition.* Candidates should be able to discuss the feeding and nutrient requirements of species, including: special diets and supplements, force-feeding and neonatal feeding.

3. Welfare, ethics and law

- 3.1 *Welfare and ethics.* Candidates should be able to discuss potential welfare problems in both captive and free-living individuals and populations, and to discuss methods of welfare assessment. Candidates should have knowledge of relevant ethical debate on the capture or maintenance of wild animals for the pet trade, display, farming, treatment and rehabilitation, conservation programmes, research, or other purposes, and on release of animals after periods in captivity (eg of wildlife casualties or captive-bred animals).
- 3.2 *Law.* Candidates should have knowledge of legislation and professional and other codes of conduct relevant to treating, keeping, selling, showing, transporting, importing and exporting non-domesticated species, and of legislation relevant to health and safety and notification of certain diseases.

4. Disease

- 4.1 *Approaches to disease investigation.* Candidates should be able to investigate causes of disease and mortality in captive and free-living individuals and populations, and to have experience in clinical and *post mortem* examinations of a range of animals. Candidates should have knowledge of the application of and interpretation of appropriate diagnostic investigative techniques in non-domesticated species.
- 4.2 *Diseases of captive and free-flying wild animals.* Candidates are expected to be able to demonstrate knowledge of the clinical signs, diagnosis, aetiology, pathogenesis, pathology, epidemiology, treatment and control of infectious (including parasitic) and non-infectious (including nutritional) diseases of captive or free-living animals.

5. Anaesthesia

- 5.1 *Anaesthesia.* Candidates will be expected to have knowledge and experience in the induction, maintenance and monitoring of anaesthesia and in pre- and post-anaesthetic management of a variety of animals.

6. Therapeutics

- 6.1 *Therapeutics.* Candidates will be expected to have knowledge of and to have experience in supportive therapy and in the treatment, including surgery and medicine, of common diseases in a variety of animals. Candidates will also be expected to have knowledge of methodology of dose estimation and of techniques for drug administration including remote injection systems.

July 1996

January 2002.

THE ROYAL COLLEGE OF VETERINARY SURGEONS
Specialisation and Further Education

CERTIFICATE AND DIPLOMA IN ZOOLOGICAL MEDICINE

Candidates should note that the reading list for the Certificate & Diploma in Zoological Medicine was frozen in 2002 and will eventually be withdrawn. Candidates are expected to research the literature for themselves and are recommended to make use of the RCVS Library and Information Service for this purpose (<http://www.rcvslibrary.org.uk/>, e-mail - library@rcvs.org.uk or telephone 020 7222 2021). Candidates should also seek advice on suitable reading matter from their advisers.

The following is a list of journals and books that candidates may find helpful.

Journals, Annuals, Proceedings

Animal Welfare

International Zoo Yearbook

Internationalen Symposiums uber die Erkrankungen der Zoo- und Wildtiere (Berlin)

Journal of Wildlife Diseases

Journal of Association of Avian Veterinarians

Journal of Zoo and Wildlife Medicine

Proceedings of the American Association of Zoo Veterinarians

Proceedings of the Association of Avian Veterinarians

Symposia of the British Wildlife Rehabilitation Council

Zoo Federation News

Books

Anderson, R.S. & Edney, A.T.B. (1991) Practical animal handling. Pergamon Press, Oxford.

Appel, M.J. (Ed) (1987) Virus infections of carnivores. Elsevier Science Publishers B.V., Amsterdam.

Arnall, L. & Keymer, I.F. (1975) Bird diseases. Bailliere Tindall, London.

- Benirschke, K. (1986) Primates: the road to self-sustaining populations. Springer-Verlag, New York.
- Beynon, P.H. & Cooper, J.E. (1991) Manual of exotic pets. BSAVA, Cheltenham. Beynon, P.H., Forbes, N.A. & Harcourt-Brown, N.H. (Eds) (1996) Manual of raptors, pigeons and waterfowl. BSAVA, Cheltenham.
- Beynon, P.H., Forbes, N. & Lawton, M.P.C. (Eds) (1996) Manual of psittacines. BSAVA, Cheltenham.
- Beynon, P.H., Lawton, M.P.C. & Cooper, J.E. (Eds) (1992) Manual of reptiles. BSAVA, Cheltenham.
- Britt, D.P. (ed) (1985) Humane control of land mammals and birds. Universities Federation for Animal Welfare, Potters Bar.
- Broom, D.M. & Johnson, K.G. (1993) Stress and animal welfare. Chapman and Hall, London.
- Burr, E.W. (Ed) (1987) Companion bird medicine. Iowa State University Press, Ames, Iowa.
- Calder, W.A.III (1984) Size, function and life history. Harvard University Press, Cambridge, Massachusetts.
- Coles, B.H. (1985) Avian medicine and surgery. Blackwell Scientific Publications, Oxford.
- Cooper, J.E. & Greenwood, A.G. (eds) (1981) Recent advances in the study of raptor diseases. Chiron Press, Keighley, Yorks.
- Cooper, J.E. & Jackson, O. (1984) Diseases of the Reptilia. Volumes 1 and 2. Academic Press, London.
- Cooper, M.E. (1986) An introduction to animal law. Academic Press, London.
- Davis, J.W. et al (1970) Infectious diseases of wild mammals. Iowa State University Press, Ames.
- Dierauf, L. (1988) Handbook of marine mammal diseases. CRC Press.
- Fairbrother, A., Locke, L.N. & Hoff, G.L. (Eds) (1996) Noninfectious diseases of wildlife. 2nd Edition. Manson Publishing, London.
- Flecknell, P.A. (1996) Laboratory animal anaesthesia. 2nd Edition. Academic Press, New York.
- Fowler, M.E. (1978) Restraint and handling of wild and domestic animals. Iowa State University Press, Ames.
- Fowler, M.E. (1983) Zoo and wild animal medicine. Second Edition. W B Saunders Co, Philadelphia.

Fowler, M.E. (1989) *Medicine and surgery of South American camelids*. Iowa State University Press, Ames.

Fowler, M.E. (1993) *Zoo and wildlife medicine: current therapy 3*. W.B.Saunders Co, Philadelphia.

Fowler, M.E. (1997) *Zoo and wildlife medicine: current therapy 4*. W.B. Saunders Co, Philadelphia.

Fox, J.G. (1988) *Biology and diseases of the ferret*. Lea & Febiger, Philadelphia.

Friend, M. (1987) *Field guide to wildlife diseases*. United States Department of the Interior, Resource Publication 167.

Frye, F. (1994) *Biomedical and surgical aspects of captive reptile husbandry*. Volumes 1 & 2. Krieger, Melbourne, Florida.

Frye, F.L. (1992) *Captive invertebrates: a guide to their biology and husbandry*. Krieger Publishing, Melbourne, Florida.

Frye, F.L. (1993) *Iguanas: a guide to their biology and captive care*. Krieger Publishing Co, Melbourne, Florida.

Frye, F.L. (1994) *Reptile clinician's handbook*. Kreiger, Melbourne, Florida.

Gipps, J. et al (1992) *Beyond captive breeding*. Symposia of the Zoological Society of London.

Griner, L. (1983) *Pathology of zoo animals*. San Diego Zoological Society.

Harknes, J.E. & Wagner, J.E. (1990) *The biology and medicine of rabbits and rodents*. Third Edition. Lea & Febiger, Philadelphia.

Hawkey, G.M. & Dennett, T.B. (1989) *Comparative haematology*. Wolfe Medical Publications Ltd.

Hillyer, E.V. & Quesenberry, K (1996) *Ferrets, rabbits and rodents*. STM Books, London.

Hoff, G.E., Frye F. L. & Jacobson E. R. (1984) *Diseases of amphibians and reptiles*. Plenum Press, New York.

IATA (1993) *IATA live animals regulations*. 20th Edition. International Air Transport Association, Montreal, Canada.

Jacobson, E.R. & Kollias, G.V. (Eds) *Exotic animals*. Churchill Livingstone, New York.

Jensen, J.M., Harvey-Johnson, J. & Weiner, S.T. (1992) Husbandry and medical management of ostriches, emus and rheas. Wildlife and Exotic Animal Teleconsultants, PO Box 10541, College Station, Texas 77842.

Johnson-Delaney, G.A. (1996) Exotic companion medicine handbook for veterinarians. Wingers Publishing, Lake Worth, Florida.

Kertesz, P. (1993) A colour atlas of veterinary dentistry and oral surgery. Wolfe, London.

Kiley-Worthington, M. (1990) Animals in circuses and zoos: Chiron's world? Little Eco-farms Publishing, Pitsea, Essex.

Kirkwood, J.K. & Stathatos, K. (1992) Biology, rearing and care of young primates. Oxford University Press, Oxford.

Kleiman, D.G., Allen, M.E., Thompson, K.V. et al (Eds) (1996) Wild mammals in captivity. University of Chicago Press, Chicago.

Krautwald, M.E., Tellheim, B., Hummel, G., Kostka, V. & Kaleta, E.F. (1992) Atlas of radiographic anatomy and diagnosis of cage birds. Paul Parey.

Laber-Laird, K., Swindle, M. & Flecknell, P.A. (1996) Handbook of rodent and rabbit medicine. Pergamon Press, Oxford.

Lumeij, J.T. (1987) A contribution to clinical investigative methods for birds. Rijksuniversiteit Utrecht.

Mader, D.R. (Ed) (1996) Reptile medicine and surgery. W.B. Saunders Co, Philadelphia.

Manser, G.E. (1992) The assessment of stress in laboratory animals. RSPGA.

Mckay, J. (1989) The ferret and ferreting handbook. Rowood Press, Avon.

Mckenzie, A.A. (Ed) (1994) The capture and care manual: capture, care, accommodation and transportation of wild African animals. Wildlife Decision Support Services, Box 73528, Lynwood Ridge, 0040 South Africa.

Montali, R.J. & Migaki, G. (1980) Comparative pathology of zoo animals. Smithsonian Institution Press, Washington, D.C.

Norton, B.G., Hutchins, M., Stevens, E.F. & Maple, T.L. (1995) Ethics on the ark. Smithsonian Institution Press, Washington DC.

OIE (1992 and 1993) Health and management of free-ranging mammals. OIE, Paris.

Olney, P.J.S., Mace, G.M. & Feistner, A.T.C. (Eds) *Creative Conservation: interactive management of wild and captive animals*. Chapman & Hall, London.

Paul, A.A. & Southgate, D.A.T. (1978) McGance and Widdowson's the composition of foods. HMSO, London.

Poole, T.B. (Ed) (1986) UFAW Handbook on the care and management of laboratory animals. Longman Scientific and Technical, London.

Petrak, M.L. (Ed) (1982) Diseases of cage and aviary birds. 2nd Edition. Lea & Febiger, Philadelphia.

Price, C.J. (1988) Manual of parrots, budgerigars, and other psittacine birds. BSAVA, Cheltenham. See Beynon et al (1995) for a more recent edition.

Redig, P.T., Cooper, J.E., Remple, J.D. & Hunter, D.B. (Eds) (1993) Raptor biomedicine. University of Minnesota Press, Minneapolis.

Reichenbach-klinke, H. & Elkan, E. (1965) Diseases of reptiles. Academic Press, London.

Ritchie, B.W. & Carter, K. (1996) Avian viruses: function and control. Wingers Publishing Inc, Lake Worth.

Ritchie, B.W., Harrison, G.J. & Harrison, L.R. (1994) Avian medicine: principles and application. Wingers Publishing Inc., Lake Worth, Florida.

Robbins, C.T. (1983) Wildlife feeding and nutrition. Academic Press, New York.

Roskopf, W. & Woerpel, R. (Eds) (1996) Diseases of cage and aviary birds. 3rd Edition. Williams & Wilkins, Baltimore.

Rubel, G.A., Isenbugel, E. & Wolvekamp, P. (1991) Atlas of diagnostic radiology of exotic pets. Wolfe Publishing, Hannover.

Sandys-Winsch, G. (1984) Animal law. Shaw & sons, London.

Schmidt, R.E. & Hubbard, G.B. (1987) Atlas of zoo animal pathology. CRC Press, Boca Raton.

Scott, M.L. (1986) Nutrition of humans and selected animal species. John Wiley & Sons, New York.

Tully, T.N., Shane, S.M. (Eds) (1996) Ratite management, medicine and surgery. Kreiger, New York.

Wallach, J.D. & Boever, W. (1983) Diseases of exotic animals. W.B. Saunders Co, Philadelphia.
Wright, K.M. (1997) Amphibian medicine and captive husbandry. Kreiger, New York.

JKK, MCPL, PWS 18.4.1995

Updated November 1996, Revised January 1997

PLEASE ENSURE THAT YOU COMPLETE A FORM E1 (TO BE FOUND IN THE COMMON DOCUMENTS) AND ATTACH IT TO THIS FORM

DIPLOMA IN ZOOLOGICAL MEDICINE

Please delete as applicable:

- Diploma in Zoological Medicine (Avian)
- Diploma in Zoological Medicine (Mammalian)
- Diploma in Zoological Medicine (Reptilian)

Details of the establishment in which experience is being gained to meet the requirements of the byelaws for the Diploma in Zoological Medicine:

(If experience is being gained in more than one place, please photocopy this form and complete in respect of each such practice)

To be completed and returned, together with **four copies**, to the RCVS, Belgravia House, 62 – 64 Horseferry Road, London SW1P 2AF.

1. Please tick the route by which experience is being gained (see B2 notes)

Approved practice route _____

Period of experience being offered (from/to) _____

Approved centre route* _____

Period of experience being offered (from/to) _____

**Applications for approval as an approved centre must be made by the centre directly to the RCVS and not by the candidate. An application form can be obtained from the RCVS.*

2. Place of employment and address _____

3. Date of commencing employment _____
(and date of leaving, if you are no longer employed at this address):

4. Numbers of veterinary surgeons usually working in your place of employment _____

5. Approx. percentage of practice-time devoted to Zoological Medicine _____

6. Approx. percentage of your own time devoted to Zoological Medicine _____

7. Description of your work in relation to the syllabus indicating numbers of Zoos or other centres with which you personally have veterinary contact and numbers of visits and for what purposes:

8. Brief description of your other duties:

9. Special equipment or facilities at your place of employment related to Zoological Medicine:

Name (block letters) _____

Signature _____ Date _____

Please enclose a SAE for acknowledgement.

PLEASE RETURN ORIGINAL FORM PLUS FOUR COPIES

**PLEASE ENSURE THAT YOU COMPLETE A FORM E1
(TO BE FOUND IN THE COMMON DOCUMENTS) AND ATTACH IT TO THIS FORM**

E1(b)

**THE ROYAL COLLEGE OF VETERINARY SURGEONS
SPECIALISATION AND FURTHER EDUCATION**

DIPLOMA IN ZOOLOGICAL MEDICINE

Please delete as applicable:

- Diploma in Zoological Medicine (Avian)
- Diploma in Zoological Medicine (Mammalian)
- Diploma in Zoological Medicine (Reptilian)

Application for approval of dissertation subject

to be completed and returned to the RCVS, Belgravia House, 62 – 64 Horseferry Road, London SW1P 2AF **by 1 November** for consideration at the same time as enrolment or at a subsequent Board meeting.

1. **NAME** (block letters) _____

2. I propose the following title for my dissertation and append an outline of the dissertation to this form.

3. I have discussed the dissertation with my adviser

Signed: _____ Date: _____

THE FOLLOWING SECTION SHOULD BE COMPLETED BY YOUR ADVISER

Name (block letters) _____

Signed: _____ Date: _____

PLEASE RETURN ORIGINAL FORM PLUS FOUR COPIES

DIPLOMA IN ZOOLOGICAL MEDICINE

Please delete as applicable:

- Diploma in Zoological Medicine (Avian)
- Diploma in Zoological Medicine (Mammalian)
- Diploma in Zoological Medicine (Reptilian)

Application for FINAL approval of experience and for permission to submit an entry to the next examination

to be completed and returned, **with four copies**, to the RCVS, Belgravia House, 62-64 Horseferry Road, London SW1P 2AF **by 1 November** prior to the examination which you wish to enter. **NO LATE APPLICATIONS WILL BE ACCEPTED.**

1. NAME in full (block letters)

2. DEGREES/DIPLOMAS/CERTIFICATES

in abbrev.form

3. ADDRESS for all correspondence (block letters)

4. TELEPHONE NO(s) for contact during day

FAX NO(s) for contact during day

5. DATE OF ENROLMENT

(MONTH/YEAR)

6. PERIODS OF EXPERIENCE BEING OFFERED to meet the requirements of the byelaws

Approved practice or approved centre (name & address)	Period of employment (from/to)	Certified by Practice Principal

If there has been any change in the work-load of the practice/centre, or in your personal work-load, since you applied for enrolment, please give details below:

7. ATTENDANCE AT RELEVANT SHORT COURSES

Please give details of the course title, dates and venue:

8. OTHER INVOLVEMENT IN RELATION TO ZOOLOGICAL MEDICINE

List any attendances at relevant congresses, conferences, meetings, symposia, etc., with dates: (Additional sheets may be attached if necessary)

9. PUBLICATIONS/ARTICLES/PAPERS/LECTURES

(Additional sheets may be attached if necessary)

10. OTHER POSTGRADUATE STUDIES

During the period of experience being offered, have you been or are you studying for any other postgraduate qualification? YES/NO

If yes, please give brief details:

11. SUBMITTED WORK

Title _____

The subject and title of my dissertation were approved by the Board on _____

12. I HEREBY APPLY FOR APPROVAL OF EXPERIENCE AND FOR PERMISSION TO SUBMIT AN ENTRY TO THE NEXT CERTIFICATE EXAMINATION IN ZOOLOGICAL MEDICINE.

I certify that the period of experience being offered has not been/is not being offered to meet the requirements of the byelaws for any other RCVS Certificate or Diploma.

13. CONFIRMATION OF INTENT TO SIT THE EXAMINATION

If approval of experience is granted, I do/do not (delete as appropriate) intend to submit an entry to the next examination (closing date for receipt of entries is 1 March).

Signature _____ Date _____

Please enclose a SAE for acknowledgement.

PLEASE RETURN ORIGINAL FORM PLUS FOUR COPIES

THE FOLLOWING SECTION SHOULD BE COMPLETED BY YOUR ADVISER.

I confirm that I am acting as this candidates Adviser

Name _____
(block capitals)

Signature _____ Date _____

If an acknowledgement is required, please enclose a stamped addresses envelope.

Letters granting approval of experience will be sent as soon as possible after the Zoological Medicine Board has considered the applications received by the annual closing date of 1 November.

DIPLOMA IN ZOOLOGICAL MEDICINE ADVISER LIST

Candidates should consult the RCVS Register of Members for a suitably willing and qualified individual (someone holding a Diploma or equivalent) who is familiar with the RCVS Diploma examination system and clinically active.

For 'Role of Advisers' see Common Documents

THE ROYAL COLLEGE OF VETERINARY SURGEONS

DIPLOMA IN ZOOLOGICAL MEDICINE

TUESDAY 7 JULY 2009

PAPER I
(GENERAL)
(3 hours)

Candidates are required to answer **ALL TEN** of the following questions.

Allow 18 minutes per question.

Illegible handwriting or failure to answer the question in the form requested may result in examiners being unable to award marks for information which candidates intended to convey.

1. Explain **briefly**, the nitrogen cycle in aquaculture.

List possible causes and effects of increased concentrations of:

- a) ammonia
- b) nitrite
- c) nitrate.

2. **Discuss briefly** how you would investigate an outbreak of sudden death in common frogs (*Rana temporalis*) in a United Kingdom garden pond.

3. **List** possible contraceptive methods for the following animals, giving your reasons:

- a) male lion (*Panthera leo*) in a safari park
- b) female golden-headed lion tamarin (*Leontopithecus chrysomelas*) in a zoo
- c) a herd of fallow deer (*Dama dama*) in a deer park.

P.T.O. for Questions 4 - 10

4. **List** the causes of urine scalding in the domestic rabbit.

 5. **List** the main groups of animals which may suffer from iron storage disease in captivity. For **ONE** of them, **describe** the clinical signs, diagnostic testing and possible aetiologies for the disease.

 6. Write **brief notes** on the following:
 - a) mange in wild foxes
 - b) snake mites
 - c) tick-associated deaths in captive birds.

 7. An owner with an aviary of pope cardinals (*Paroaria dominicana*) is concerned by the number of individuals looking in poor condition and fluffed-up. Food intake has dropped and there have been one or two deaths. **Describe briefly** how you would investigate the problem and give a **list** of differential diagnoses.

 8. **Discuss briefly** suitable protocols for safe general anaesthesia in the following situations:
 - a) an adult female spur-thighed tortoise (*Testudo graecae*) undergoing a coeliotomy for the removal of retained eggs,
 - b) a juvenile male Harris hawk (*Parabuteo unicinctus*) undergoing investigation for dyspnoea,
 - c) an obese domestic ferret undergoing surgical removal of a skin tumour.

 9. Write **short notes** on the following:
 - a) bat lyssavirus infections
 - b) lymphocytic choriomeningitis virus infection
 - c) transmissible spongiform encephalopathies in non-domestic species
 - d) paramyxovirus infection of pinnipeds.

 10. **Write short notes on bumblefoot in birds. Compare and contrast** the treatment options for the disease in raptors and waterfowl.
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THE ROYAL COLLEGE OF VETERINARY SURGEONS

DIPLOMA IN ZOOLOGICAL MEDICINE

TUESDAY 7 JULY 2009

PAPER II
(MAMMALIAN)
(3 hours)

Candidates are required to answer **FOUR** of the following **six** questions.

Allow 45 minutes per question.

Illegible handwriting or failure to answer the question in the form requested may result in examiners being unable to award marks for information which candidates intended to convey.

If insufficient time is available to answer a question fully, it will be acceptable to complete in note form.

1. **List** the species of *Baylisascaris* and **describe** their life-cycle in their natural hosts. **Discuss** the pathogenicity of *Baylisascaris* species in their definitive and any intermediate and aberrant hosts, and **describe** methods of treating and controlling disease.
2. **List** the major neurological diseases found in captive exotic Felidae, indicating for **each** the clinical signs, aetiology, and the species which are mainly affected.
3. Zoo staff have arrived one morning to find a two year-old male giraffe dead in its outdoor paddock. No clinical signs were evident when staff left the previous evening, and the remaining giraffes are unaffected. As staff veterinarian, you are in overall charge of dealing with the veterinary and management aspects of this incident.

Describe how you would do this. Include in your answer the differential diagnoses you would need to consider, and how these may influence subsequent events.

P.T.O. for Questions 4 – 6

4. A small cetacean (unknown species) has been reported as stranded at low tide on a local rocky beach by a member of the public. You are called in by the police as a wildlife veterinarian to respond to the situation.
- a) What criteria would you use to decide whether this animal should be refloated?
 - b) What would you need to organise if this were to be attempted?
 - c) What are the welfare issues involved?
5. Ten confiscated young chimpanzees (*Pan troglodytes*) have been handed to a wildlife rehabilitation centre. How would you advise the centre on the **advantages and disadvantages** of rehabilitation and release, taking into account their health, the health of free-living chimpanzees in the same area, and the health of staff and local people?
6. You are asked to investigate chronic poor condition and increased mortality in a herd of scimitar-horned oryx (*Oryx dammah*) released into a fenced reserve in orth Africa. **List** your differential diagnoses and **describe** how you would carry out an investigation to diagnose the cause(s) and any predisposing factor(s).
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