

IMPORTANT INFORMATION FOR CANDIDATES

Please note that the RCVS Diploma for this subject has been phased out in favour of the European College of Veterinary Anaesthesia (ECVA) Diploma. No more applications for this subject will be accepted.

Candidates who are already enrolled will still have the remainder of their enrolment in which to enter for the examination.

Diploma in Veterinary Anaesthesia

Please view the general documents to obtain copies of:

- Introduction to RCVS Diploma Examinations
- Timetable
- Guidance Notes B.1 - for candidates on general requirements.
- Role of Advisers to Candidates

The following papers are attached:

Important information for candidates

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.

THE ROYAL COLLEGE OF VETERINARY SURGEONS

THE DIPLOMA IN VETERINARY ANAESTHESIA

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 a requirement of the Veterinary Anaesthesia Board that ALL Candidates entering for the Diploma are Members of the Royal College of Veterinary Surgeons (MRCVS).

SPECIFIC EXPERIENCE

Approved Centre Route

2. 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** and are required to offer experience in the subject over **at least four years**.
3. 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 Practice Route

4. 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** and are required to offer experience in the subject 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.
5. There is no separate application form other than the candidate application forms included with this Information Pack. Practices are approved for each individual candidate.
6. *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.*
7. 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

8. You will need to submit a form E1(b) either with the application for initial approval or for final approval of experience.

THE EXAMINATION

9. The examination consists of three Sections:
 - (a) Submitted work
 - (b) TWO x 3 hour written papers
 - (c) A clinical, practical and oral examination.

SUBMITTED WORK FOR EXAMINATION

10. This shall comprise of **300** case records
AND
Either a) **ONE** principal author paper or **TWO** papers in which you have made a major contribution.
OR
b) a dissertation

Case Records

11. When applying to enter the Diploma examination, candidates must submit **300 records of cases of anaesthesia** (including techniques of local analgesia but not diagnostic nerve blocks) observed and recorded in detail by them. **At least 100** of these case records **must relate to cats and dogs, and 100 to large animals** which must include a significant proportion of horses. They should be divided according to species of animal and each section arranged in chronological order.
12. The purpose of the case record books within the examination is to provide the examiners with some idea of a candidate's range of experience, and to form the basis of discussion where any anaesthetic problems may have arisen. The records are of material assistance in assessing a candidate's level of ability.

Principal Author paper OR two papers

13. You will need to submit **either** ONE Principal author paper, **OR** two papers in which you have made a major contribution. A letter from the Editor(s) confirming FINAL acceptance must accompany these papers. You are also required to submit, with the published papers, a resume on which you would be questioned.
14. 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. However, publications in peer reviewed journals **arising from** any postgraduate degree,

for example, a PhD or Masters thesis, could be used towards a subsequent Diploma if publications of this type form part of the Diploma requirements and are appropriate to the discipline.

Dissertation

15. Application for approval of the subject of the dissertation and an outline of the proposal (2 sides of A4) should be submitted at the time of enrolment so that the subject receives the prior approval of the Board. The outline should encompass background, aims and objectives, materials and methods.

Scope of Dissertation

16. The Dissertation should be based on original material and data and should be relatively narrow so as to allow detailed and in depth assessment. It should be a scientific project that will add substantially to the body of knowledge in veterinary anaesthesia and must be relevant to the syllabus of the Diploma in veterinary anaesthesia.
17. Candidates may NOT submit any work prepared or submitted for another postgraduate qualification (such as a diploma of fellowship)
18. The dissertation should be presented in a format similar to that required for other postgraduate qualifications.
The dissertation should comprise:

Abstract /summary (one page A4)

Introduction/literature review

Material & methods

Results

Discussion

References – citations to be as per the instructions to authors for veterinary Anaesthesia & Analgesia.

Word count:

19. The Dissertation should be between 5000 and 7000 words. The word count excludes the references and figures. If the word count is exceeded the dissertation will be disqualified and returned unmarked and the candidate will be unable to proceed to the remaining sections of the examination.
The dissertation must be typed on A4 paper using not less than 11 point font with 1.5 line spacing and adequate margins. The word count must be shown on the front page of the dissertation.

Submission

- 20 Candidates should submit three hard copies submitted in a secure bound manner an electronic version should also be submitted at the same time. Candidates are asked to submit an electronic version of their submitted work together with their hard copies. 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 CD. 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 Veterinary Anaesthesia' marked clearly on the front.

Grading Scheme

21. 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

Format

22. This Section consists of 2 x three-hour written papers. Paper I will consist of 10 short answer questions on Basic Sciences and Paper II will consist of a combination of questions on General Medicine and Surgery and Anaesthesia. This will be of three hours in length.

Marks Scheme

23. **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

24. The Clinical, Oral and Practical examination will last approximately 2½ hours for each candidate.

Format

25. There will be three individual orals - one with each examiner:

- i) Case based small animal anaesthesia
- ii) Case based large animal anaesthesia
(Both of these usually include live animals)
- iii) Records, patient data and equipment

There will then be one panel viva of 45 minutes duration with all examiners

Marks Scheme

26. TOTAL Mark for this Section (c) = 100 marks

SYLLABUS AND READING LIST

Syllabus

27. The syllabus together with its commentary is provided, and from this candidates will note that a comprehensive knowledge of all aspects of anaesthesia in all species, and of the basic science relevant to the subject is required. Subjects that were included in the Certificate may be covered again for the Diploma when a deeper level of knowledge is needed. The candidate is expected to have knowledge of research techniques, to be up to date with current research and to be able to advance the subject of anaesthesia.

Reading List and access to Libraries

28. A reading/reference list is supplied. However, in view of increased access to the internet, and ready availability of on-line literature searches the Board has agreed that the existing reading lists should be frozen in 2002 and that in 2-3 years' time these lists will be withdrawn altogether. At Diploma level, candidates are expected to be familiar with all literature in their subject and most particularly so in the topic of their submitted papers, to do their own research and are encouraged to seek advice on suitable reading matter from their advisers and the RCVS Library and Information Service.

29. Candidates are advised to make full use of the RCVS Library and Information Service, which gives access to a range of on-line journals, as well as providing a regular update service. (www.rcvslibrary.org.uk, telephone 020 7222 2021, or email library@rcvs.org.uk). Those in the North may also wish to take advantage of the British Lending Library at Thorpe Arch, nr. Wetherby.

30. Some tapes/slides programmes are available from the Unit for Continuing Education, The Royal Veterinary College, Royal College Street, Camden Town, London NW1 0TU, and from Graves Medical Audiovisual Library, P O Box 99, Chelmsford, CM1 5HL.

ADVISERS

31. Candidates are urged to seek advice from their advisers. A list of current Diploma holders and RCVS Recognised Specialists may be found in the Register of Members or on the RCVS website.

ATTENDANCE AT SHORT COURSES

32. The Board is not making attendance at any course or courses compulsory.

33. Candidates are advised to spend short periods of intensive study at a place of work other than their own in order to obtain a wide experience in anaesthetic procedure in current use, especially if there is a particular area in which their own place of work is unable to give adequate training.
34. In addition, candidates can often, with advantage, attend classes held in universities, or hospitals where doctors are being prepared for higher degrees, as well as attending any short courses which may, from time to time, be provided by veterinary schools.

MEMBERSHIP OF VETERINARY ASSOCIATIONS/SOCIETIES

35. Enrolled candidates are encouraged to become a Member of the Association of Veterinary Anaesthetists and attend meetings.

ABBREVIATION FOR QUALIFICATION

36. Candidates who are successful in the **Diploma in Veterinary Anaesthesia** may use the abbreviations **DVA** after their names in the RCVS Register of Members, and on practice plate, stationery, etc. Certificate holders who obtain the Diploma in the same subject cease to use the Certificate abbreviation (CVA).

August 1985, Amended 1986/May 1988, Feb 1989/April 1992, Jan 1993/July 1995, Oct95/Nov95/Jan96/Apr96/Jun97/Jun98, Feb00/Nov 2001, Amended November 2002. November 2003.

Last amended April 2008

GENERAL GUIDANCE NOTES FOR DIPLOMA CANDIDATES ON THE PREPARATION OF A DISSERTATION

B.3

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

DIPLOMA IN VETERINARY ANAESTHESIA

COMMENTARY ON THE SYLLABUS

In the normal course of events candidates will have passed the Certificate examination, which will mean that they have been involved in clinical anaesthetic practice for at least two years before taking the Diploma examination. Whereas the Certificate will have assessed the competence in clinical anaesthesia, the Diploma will be an advanced postgraduate qualification in veterinary anaesthesia and an essential part of this must be a general knowledge in the broad subject of anaesthesia. The clinical emphasis of the Certificate syllabus will be maintained. In addition, however, candidates must understand an experimental approach to the subject as it is expected that those with specialist status will have a responsibility for advancing knowledge of veterinary anaesthesia by research either in the clinic or the laboratory

A. Basic Sciences Applied to Anaesthesia.

Candidates will be expected to understand the fundamental and applied aspects of the basic sciences normally applied to anaesthesia at a postgraduate level. These will include:

1. Physiology

The general principles of physiology and a more detailed knowledge of those aspects related to anaesthesia should be understood, including current knowledge of the function of the central, peripheral and autonomic nervous system, cardiovascular and respiratory systems and the transport of gases, the control of water, electrolytes, hydrogen ions and buffers in biological systems and a more detailed knowledge of hepatic and renal physiology and endocrinology than expected for the Certificate.

2. Pharmacology

A detailed knowledge of the actions of all drugs used in anaesthesia and supportive care will be required, their pharmacology including pharmacokinetics and metabolism, the effects of change in composition of body fluids and transport across cell membranes. Candidates should be aware of potential drug interactions during anaesthesia and the effects of endogenous biologically active substances such as histamine, serotonin, prostaglandins and neural peptides on the course of anaesthesia.

3. Biophysics, Biochemistry and Clinical Measurement

A more detailed knowledge will be required for the application of these subjects to anaesthesia than is expected for the Certificate. Candidates should know about atomic and molecular structure, physical characteristics of crystalloids and colloids, the laws affecting temperature, pressure and flow of gases

and liquids with particular reference to the design of anaesthetic equipment. Candidates should be aware of the main biochemical pathways in carbohydrate, fat and protein metabolism and energy production.

Candidates should be familiar with techniques of measurement used both in clinical and research situations. They should have a general understanding of the operation principles and of the limitations of the instruments used, but detailed knowledge of electronic circuitry will not be required. They should be able to interpret and assess the value of the results obtained.

4. Anatomy

A general knowledge of the anatomy of the nervous system and a detailed knowledge of the spinal cord and main nerve trunks blocked in regional analgesic techniques will be required. A thorough knowledge of the anatomy of the thorax, head and neck as they relate to anaesthesia will be necessary.

5. Pathology

Candidates should be aware of the recent developments in pathology as they affect anaesthesia as well as the way anaesthesia may effect pathological processes. Candidates should know the pathological conditions that affect the body systems related to anaesthesia, particularly those diseases which affect cardiovascular, respiratory and renal function and those which produce metabolic disturbances. Candidates should be capable of interpreting reports from clinical haematology, microbiology and chemistry laboratories. Details of histological and ultra-structural changes in tissue will not be required.

B. Anaesthesia

Candidates will be expected to have a broad view of anaesthesia and a thorough understanding of the whole field of anaesthesia in animals

1. Clinical Anaesthesia.

Candidates must be able to demonstrate that they have had extensive experience of clinical veterinary anaesthesia in the range of species normally encountered in clinical practice. A serious of 300 case records must be submitted before taking the Diploma examination to substantiate the experience gained. When necessary, candidates should seek additional experience in more than one centre to gain a wide basis for their anaesthetic practice.

The experience of general clinical veterinary medicine and surgery expected for the Certificate should be extended during the period of study for the Diploma and this must include responsibility for supportive care of animals before and after as well as during surgery. A general knowledge of current developments in the whole field of anaesthesia will be expected so that relevant aspects of medical anaesthesia may be applied to clinical anaesthesia in animals.

Candidates should be familiar with anaesthesia of captive and feral wild animals and with indications for specialised techniques such as cardioangiography, cardiopulmonary bypass, controlled hypotension and hypothermia.

Candidates should have a greater understanding of the function of apparatus used in anaesthesia than expected for the Certificate and this should include the equipment used for measurement in more advanced anaesthetic techniques.

2. Anaesthesia in Research

Candidates should be familiar with methods of restraint and anaesthesia suitable for laboratory animals and be able to advise on techniques for different procedures in experimental laboratories. They would also be expected to be familiar with anaesthetic techniques suitable for acute studies and appreciate the influence of the anaesthetic methods on the results of the experiment.

C. General Medicine and Surgery

Candidates will be expected to demonstrate that they have a thorough knowledge of the natural course and therapeutics of medical and surgical diseases of domestic animals of importance in the practice of veterinary anaesthesia. A more superficial acquaintance with the special aspects of disease in non-domestic animals, birds, fish and animals such as guinea pigs, hamsters, rats and mice, will also be expected.

They should be familiar with the problems encountered in the application of diagnostic techniques such as radiographic procedures, ultra-sound scanning and MR imaging, and the influence of anaesthetic methods on these problems. They should be able to interpret and assess the value of the results obtained and understand the limitations of the procedures in the diagnosis of disease.

Candidates should be able to apply their knowledge of basic sciences to the development of veterinary anaesthesia. They should be familiar with pharmacological methods and be able to design trails to evaluate anaesthetic and ancillary drugs and should have sufficient knowledge of statistics to analyse results and interpret published work. They should be aware of the way physiological and biochemical studies associated with anaesthesia can be carried out in animals and be able to investigate the functional characteristics of anaesthetic apparatus.

December 1982
Amended November 1983
Amended April 1993/January 1996

THE ROYAL COLLEGE OF VETERINARY SURGEONS

DIPLOMA IN VETERINARY ANAESTHESIA

SYLLABUS

- A. Basic Sciences Applied to Anaesthesia - fundamental and applied aspects of physiology, pharmacology, biophysics, biochemistry and pathology relating to the subject of anaesthesia. Techniques of biological measurement used in clinical and experimental animals and interpretation of results including statistics.

- B. Anaesthesia - theoretical and practical aspects of the general subject of anaesthesia and a thorough knowledge of the whole field of anaesthesia in animals including specialised clinical and research techniques.

- C. General Medicine and Surgery - Fundamental and applied aspects of veterinary medicine and surgery of importance in the practice of veterinary anaesthesia.

March 1982
Amended April 1993/Jan95

READING LIST FOR VETERINARY ANAESTHESIA CERTIFICATE AND DIPLOMA CANDIDATES

Candidates should note that the reading list for Veterinary Anaesthesia 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.

This list is not intended to be exhaustive and *candidates are not expected to consult or read all of these books*. Publications in **bold/italic** type are suggested for certificate candidates. Physiology & pharmacology contained within anaesthetic texts is of sufficient detail for the certificate
A list of useful websites and e-mail addresses is also included.

BOOKS AND JOURNALS

VETERINARY ANAESTHESIA

Author	Title	published
<i>Thurmon, Tranquilli, Benson Lumb & Jones`</i>	<i>Veterinary Anesthesia</i>	1996
<i>(ed)</i>		
<i>Hall, Clarke, Trim</i>	<i>Veterinary Anaesthesia 10th Edn</i>	2000
Short (ed)	Principles and Practice of Veterinary Anesthesia	1987
<i>Seymour (ed)</i>	<i>BSAVA Manual of Small Animal Anaesthesia and Analgesia 3rd Edn</i>	1999
<i>Hall and Taylor</i>	<i>Anaesthesia of the Cat</i>	1994
<i>Flecknell</i>	<i>Laboratory Animal Anaesthesia</i>	1996
<i>Muir, Hubbell and Skarda</i>	<i>Handbook of Veterinary Anesthesia</i>	1989
<i>Muir and Hubbell</i>	<i>Equine Anesthesia, Veterinary Clinics of North America: Various</i>	1990 2002
<i>Haskins, Klide</i>	<i>VCNA small animal practice: opinions in small animal anaesthesia</i> <i>VCNA small animal practice: clinical anaesthesia</i>	1992 1999
<i>Taylor, Clarke</i>	<i>Handbook of Equine Anaesthesia</i>	1999
<i>Muir & Hubbell</i>	<i>Equine Anesthesia: Monitoring & Emergency Therpay</i>	1992

FUNDAMENTALS OF ANAESTHESIA

Author	Title	published
Hemmings and Hopkins	Foundations of Anaesthesia. Basic and Clinical Sciences	1999
Miller	Anesthesia (5 th edition)	2000
Starr	Anesthesiology Boards	2000
DiBartola	Fluid Therapy in Small Animal Practice 2nd Edn	2001

EQUIPMENT

Author	Title	published
Al. Shaikh and Stacey	Essentials of anaesthetic equipment	1995
Moyle (Contributor)	Ward's Anaesthetic Equipment	1992
Dorsch & Dorsch	Understanding Anaesthetic Equipment 4th ed.	2001

PHYSIOLOGY

Author	Title	published
West	Respiratory Physiology: The essentials	1990
Ganong	Review of Medical Physiology	1995
Stoelting	Handbook of Pharmacology and Physiology in Anesthetic Practice	1995
Vander	Renal Physiology (3 rd Ed. New York, McGraw)	1985
Swenson	Duke's Physiology of Domestic Animals 1 Oth Ed. Ithaca, Comeil Press	1984
Nunn JF	Applied Respiratory Physiology. (5 th Ed. London, Butterworths)	1998
Iman GR	Applied Cardiovascular Physiology. 2 nd Ed. London, Butterworths	

Sykes MK	Respiratory Failure. 2 nd Ed. Oxford, Blackwell Scientific Publications	1976
Campbell EJM, Diginson CJ et al.	Clinical Physiology. 5 th Ed. Blackwell, Oxford	1984
Cunningham	Textbook of Veterinary Physiology	2000
Power I, Kam P	Principles of Physiology for the Anaesthetist	2001

STATISTICS-EXPERIMENTAL DESIGN

Author	Title	published
Rowntree	Statistics without Tears	1981
Hill, Sir Austin Bradford	Short textbook of Medical Statistics, London, Hodder & Stoughton	1977
Swinscow TKV	Statistics at Square one. (6th Ed. London B.M.A. 1977)	1980
Zbinden, Thomson	Conducting Research in Anaesthesia and Intensive Care Medicine (Butterworth)	2001
Altman DG	Practical Statistics for Medical Research (Chapman and Hall)	1996
Petrie, Watson	Statistics for Veterinary and Animal Science	1999

INTENSIVE CARE

Author	Title	published
King L, Hammond R	BSAVA Manual of Canine and Feline Emergency and critical Care	1999
Wingfield	Veterinary Emergency Medicine Secrets	2001
Wingfield	The Veterinary ICU Book	2002

PHARMACOLOGY

Author	Title	published
Vickers (ed), Morgan, Spencer	Drugs in Anaesthetic and Intensive Care Practice, 7th Ed. London, Butterworths	1999
Calvey, Williams	Principles and Practice of Pharmacology for Anesthetists. Blackwell Scientific Publications	1992
Rang Dale & Ritter	Pharmacology	2000

PHYSICS - MEASUREMENT

Author	Title	published
Sykes, Hull	Principles of Measurement and Monitoring in Anaesthesia and Intensive Care., Blackwell Scientific Publications	1991
Macintosh, Mushin, Epstein	Physics for the Anaesthetist, Blackwell Scientific Publications	1991
Davis, Parbrook, Kenny	Basic Physics and measurement in anaesthesia	1990

PAIN IN ANIMALS

Author	Title	published
Short, Poznak	Animal Pain	1992
Flecknell, Waterman-Pearson	Pain Management in Animals	2000
Matthews	Vet Clinics of North Am - Small Animal Pain management	2000
Hellebrekers	Animal Pain	2000
Tranquilli, Grimm, Lamont	Pain Management for the small animal practitioner	2000

PAIN GENERAL

Author	Title	published
Melzack, Wall	Textbook of pain – 3 rd editon	1998?

JOURNALS

Title

Anaesthesia Journals

Veterinary Anaesthesia and Analgesia

Anaesthesia

Anesthesia and Analgesia

Anesthesiology

British Journal of Anaesthesia

Emergency medicine

Journal of Veterinary Emergency and Critical Care

Critical Care Medicine

Veterinary Medicine

Veterinary Record

American Journal of Veterinary Research

Research in Veterinary Science

Journal of the Veterinary Medical Association

Veterinary Surgery

Journal of the American Animal Hospital Association (JAAHA)

Small Animals

Journal of Small Animal Practice

Horses

Equine Veterinary Education

Equine Veterinary Journal

Laboratory Animals / Exotic Animals

Laboratory Animal

Laboratory Animal Science

The following list is not comprehensive, but may be useful as an introduction to Internet resources for veterinary anaesthetists.

EMAIL DISCUSSION LISTS

ACVA-L

Veterinary anesthesia and analgesia

Send subscription request to Dr John Ludders JWL1@cornell.edu or Dr Pauline Wong PLWONG@ucdavis.edu.

VECCS-L

Veterinary emergency and critical care medicine

Send subscription request to Dr Bernie Hansen bernie_hansen@ncsu.edu.

GASNet Anesthesiology Discussion Group

Human anesthesia – moderate mail volume, moderate noise level.

Archived messages accessible without subscription:

<http://www.gasnet.org/anesthesiology/index.php>

Send subscription request to Dr Keith Ruskin ruskin@harpo.med.yale.edu

Pediatric Anaesthesia Conference

Human pediatric anesthesia – low volume, low noise

Archived messages accessible without subscription:

<http://www.gasnet.org/pac/index.php>

Send subscription request to listmaster@anaes.sickkids.on.ca

Pediatric Pain

Human pediatric pain – low volume, variable noise

Send subscription request to Dr G Allen Finley allen.finley@dal.ca

CCM-L

Human critical care medicine – high volume, moderate noise

Send subscription request to Dr David Crippen crippen+@pitt.edu

WEB SITES

COMPUTERIZED LITERATURE SEARCH

US National Library of Medicine Databases & Electronic Information Sources

<http://www.nlm.nih.gov/databases/databases.html>

Medline

http://www.nlm.nih.gov/databases/databases_medline.html

PubMed (free Web access to Medline)

<http://www.ncbi.nlm.nih.gov/entrez/query.fcgi>

OldMedline (Citations for biomedical journal articles published 1958-1965 can be searched via the NLM Gateway)

<http://gateway.nlm.nih.gov/gw/Cmd>

National Agricultural Library's (NAL) AGRICultural OnLine Access (AGRICOLA)

<http://www.nal.usda.gov/ag98/ag98.html>

VETERINARY ANESTHESIA & CRITICAL CARE

American College of Veterinary Anesthesiologists

<http://www.acva.org/>

Association of Veterinary Anaesthetists

<http://www.aveta.org.uk>

European College of Veterinary Anaesthesia

<http://www.ecva.org.uk/>

Veterinary anaesthesia chapter of the Virtual Anaesthesia Textbook

<http://www.virtual-anaesthesia-textbook.com/vat/vet.html>

Veterinary Emergency and Critical Care Society

<http://veccs.org/>

Future European Veterinary Emergency and Critical Care Society

<http://www.eveccs.org/>

MEDICAL ANESTHESIA & CRITICAL CARE

GASNet

<http://www.gasnet.org>

Virtual Anaesthesia Textbook (VAT)

<http://www.virtual-anaesthesia-textbook.com/>

Wright's Anesthesia and Critical Care Resources on the Internet (ACCRI)

<http://www.eur.nl/fgg/anest/wright/index.html>

Hardin Meta Directory - Anesthesiology

<http://www.lib.uiowa.edu/hardin/md/anesth.html>

Martindale's Anesthesiology Center

<http://www-sci.lib.uci.edu/~martindale/MedicalSurgery.html#AA>

Pediatric, critical care and medical Internet resources

<http://pedscm.wustl.edu/Internet.html>

Pediatric Pain

<http://is.dal.ca/~pedpain/>

IntensiveCare.com

<http://www.intensivecare.com/>

New York Online Access to Health (NOAH)

<http://www.noah-health.org/english/illness/pain/pain.html>

VETERINARY ANESTHESIA JOURNALS ONLINE

Veterinary Anaesthesia and Analgesia

<http://www.blackwell-science.com/~cgilib/jnlpage.asp?Journal=vaa&File=vaa&Page=aims>

Journal of Veterinary Pharmacology and Therapeutics

<http://www.blackwell-science.com/~cgilib/jnlpage.asp?Journal=jvpt&File=jvpt&Page=aims>

Veterinary Surgery (issues of Veterinary Anesthesia published in this journal prior to 2001)

< <http://vetsurg.wbsaunders.com/scripts/om.dll/serve?action=searchDB&searchDBfor=home&id=jvet>
>

MEDICAL ANESTHESIA AND PAIN ORGANIZATIONS and JOURNALS

<http://members.tripod.com/navarian5/journals.html>

American Society of Anesthesiologists

<http://www.asahq.org>

International Association for Anesthesia Research

<http://iars.org>

International Association for the Study of Pain

<http://www.iasp-pain.org/>

Acta Anaesthesiologica Scandinavia

< <http://journals.munksgaard.dk/tidsskrifter.nsf/a3b40ef0ca9b8d86c1256a160050049f/f30a37adce76589ec1256a110036150c?OpenDocument> >

Anaesthesia

< <http://www.blackwell-science.com/~cgilib/jnlpage.asp?Journal=anae&File=anae> >

Anesthesia & Analgesia

<http://www.anesthesia-analgesia.org/>

Anesthesiology

<http://www.anesthesiology.org>

British Journal of Anaesthesia

<http://bjj.oupjournals.org/>

Canadian Journal of Anesthesia

<http://www.cas.ca/public/journal/>

Internet Journal of Anesthesiology

<http://216.39.195.244/xdisp/xdisp.php?xml=journals/ija/front.xml>

VETERINARY

NetVet

<http://netvet.wustl.edu/vet.htm>

American Veterinary Medical Association's Network of Animal Health (NOAH)

<http://www.avma.org/network.html>

International Veterinary Information Service (IVIS)

<http://www.ivis.org/>

Veterinary Information Network (VIN)

<Http://www.vin.com/>

Martindale's Health Science Guide 2000: The "Virtual ~ Veterinary Centre

<http://www-sci.lib.uci.edu/HSG/Vet.html>

National Animal Poison Control Center

<http://www.napcc.asPCA.org/>

<http://www.asPCA.org/site/PageServer?pagename=apcc>

US Food and Drug Administration Center for Veterinary Medicine

Adverse Drug Experience Reports

<http://www.fda.gov/cvm/index/ade/adetoc.htm>

US Pharmacopeia

Drug product reporting

<http://www.usp.org/frameset.htm?http://www.usp.org/prn/>

Veterinary Medical Schools, Veterinary Technology Schools

<http://netvet.wustl.edu/vschool.htm>

E-Vet

<http://www.e-vet.com/>

Products, supplies, services, listings

<http://www.vetscape.net/supplies.htm>

November 2002

Details of the establishment in which experience is being gained over AT LEAST THREE CALENDAR YEARS to meet the requirements of the byelaws for the Diploma in Veterinary Anaesthesia:

(If more than one establishment please photocopy this form and complete in respect of each such centre)

1. Name of veterinary centre and address

2. Description of your post (i.e. title) and date of taking up employment (and date of leaving if relevant) at the establishment:

3. Brief description of the type of establishment and, if appropriate, numbers of Veterinary Surgeons usually working in your place of employment:

4. Please give a description of your work and state why you wish to enter for this Diploma:

5. Brief description of your other duties:

6. Please list any previous (or subsequent) employment relevant to Veterinary Anaesthesia and give brief details:

7. Please list below any other involvement in Veterinary Anaesthesia including membership of relevant associations, attendance at short courses, meetings, symposia, etc., and publications.

8. Applicants MUST indicate below how they propose to gain the required experience in work specifically related to the Syllabus.

Provisional Training Programme

9. Please attach the proposed Training Programme you have agreed with your Approved Tutor' indicating the type of experience you expect to obtain.

Signature

Date

DIPLOMA IN VETERINARY ANAESTHESIA

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

This form must be completed and returned to the RCVS, Belgravia House, 62-64 Horseferry Road, London SW1P 2AF by **1 November** prior to the year in which you wish to enter the examination.

1. **NAME** in full (block letters)

2. **DEGREES/DIPLOMAS/CERTIFICATES** _____
(in abbrev.form)

3. **ADDRESS** for all correspondence (block letters)

4. (a) **TELEPHONE No(s)** (for contact during day) _____
(b) **FAX No.** (for contact during day) _____

5. **DATE OF ENROLMENT** _____ (MONTH/YEAR)

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

Dates (to from)	Duration (months)	Where taken	Certified by Adviser

Dates (to from)	Duration (days)	Approved Centre	Certified by Adviser

The period of experience offered must be equivalent to two years in an approved practice which shall include 200 days in an approved centre. The period of experience offered for the Certificate may be counted towards the time required for the Diploma.

7. **ATTENDANCE AT RELEVANT SHORT COURSES**

Candidates are asked to fill in the **RCVS Record Card** for each year for which they are applying for final approval of experience. Details of all relevant short conferences and meetings attended should be shown. Candidates must comply with the annual recommended minimum hours of CPD otherwise final approval of experience and permission to sit the next examination will not be granted.

8. **I HEREBY APPLY FOR FINAL APPROVAL OF EXPERIENCE AND FOR PERMISSION TO SUBMIT AN ENTRY TO THE NEXT DIPLOMA EXAMINATION IN VETERINARY ANAESTHESIA.**

9. 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.

Delete the following section if you do not intend to sit the next examination.

10. **CONFIRMATION OF INTENT TO SIT THE EXAMINATION**

I confirm my intention, if approval of experience is granted, of submitting an entry to the next examination.

Signature _____
(block capitals)

Date _____

The following section should be completed by your Adviser.

I confirm that I am acting as this candidate's Adviser.

Name _____
(block capitals)

Signature of Adviser _____

Date _____

DIPLOMA IN VETERINARY ANAESTHESIA 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.

THE ROYAL COLLEGE OF VETERINARY SURGEONS

DIPLOMA IN VETERINARY ANAESTHESIA

MONDAY 10 JULY 2006

PAPER I
BASIC SCIENCES
(3 hours)

Candidates are required to answer **ALL 10** 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. **Briefly describe** the mechanisms by which intravenous anaesthetic agents induce general anaesthesia.
2. What are the indications and special precautions for the use of:
 - a. Human albumin?
 - b. Hetastarch?
 - c. Fresh frozen plasma?
3. **Briefly describe** the evolution of the technology used in blood gas analysers, for the measurement of the following:
 - a. P_aO_2
 - b. P_aCO_2
 - c. pH
 - d. Actual and standard bicarbonate concentration
 - e. Base Excess.
4. **List** the recognised methods of location of the epidural space. Give an advantage **and** disadvantage for **each** method mentioned.
5. How can renal blood flow be measured? **List** the physiological factors that affect renal blood flow, **with examples** of how these factors are influenced by commonly used anaesthetic agents.

P.T.O. for Questions 6 - 10

6. **Describe** the correct use of the following statistical procedures:
- Mann Whitney U-test
 - Paired t-test
 - Analysis of variance
 - Regression analysis
 - Chi-square test.
7. **Briefly describe** the mode of action of all the drugs which can be used to antagonise residual neuromuscular block.
8. **Define** the following, relating the definitions to airway humidification:
- Absolute humidity.
 - Relative humidity.
 - Isothermic saturation boundary.
 - Massic enthalpy of evaporation.
9. What is the current United Kingdom legislation governing the **use** of controlled drugs in veterinary practice.
10. **Define** oxygen flux (Nunn and Freeman 1964). Comment **briefly** on its clinical implications.
-

THE ROYAL COLLEGE OF VETERINARY SURGEONS

DIPLOMA IN VETERINARY ANAESTHESIA

MONDAY 10 JULY 2006

PAPER II

GENERAL MEDICINE, GENERAL SURGERY AND ANAESTHESIA

(3 hours)

This paper is in two Sections (A and B) and instructions relating to the number of questions to be answered are given at the head of each Section.

SECTION A

Candidates are required to answer **THREE** of the following **four** questions.

Allow 30 minutes per question. (1½ hours)

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. **Discuss** the problems associated with the use of circle breathing systems in veterinary anaesthesia. How would you minimise these problems?
 2. **Describe** the common presenting signs of Addison's disease in the dog, relating these to the pathophysiology of the condition. How would you manage an unstable Addisonian subject presented for surgical removal of a mast cell tumour located over the sublumbar fossa?
 3. What are the indications for the use of intravenous sodium bicarbonate intraoperatively? Are there any disadvantages to its administration at this time?
 4. **Discuss** the possible **advantages and disadvantages** of using oxygen enriched air as the carrier gas for a volatile anaesthetic agent in equine anaesthesia.

P.T.O. for Section B

THE ROYAL COLLEGE OF VETERINARY SURGEONS

DIPLOMA IN VETERINARY ANAESTHESIA

MONDAY 10 JULY 2006

PAPER II

GENERAL MEDICINE, GENERAL SURGERY AND ANAESTHESIA

SECTION B

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

Allow 30 minutes per question. (1½ hours)

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.

-
5. What important facts should be known by the anaesthetist when choosing a physiological measuring system and why?
 6. What are the postulated roles for the cannabinoid receptors in the mediation of central and peripheral pain hypersensitivity?
 7. How should anaesthetic equipment be cleaned after use on an animal known to have a respiratory tract infection? What are the indications for disposable (**one use only**) anaesthetic equipment in anaesthetic practice?
 8. A 3 year-old 750kg Bull with corneal pannus presents for a bilateral entropion operation. **Discuss** how you would provide suitable conditions for the surgical management of this case, the potential problems and the **advantages and disadvantages** of the method chosen.