



## AUSTRALIAN AND NEW ZEALAND COLLEGE OF VETERINARY SCIENTISTS

### MEMBERSHIP GUIDELINES

#### *Medicine of Australasian Wildlife Species*

#### INTRODUCTION

These Membership Guidelines should be read in conjunction with the *Membership Candidate Handbook*.

#### ELIGIBILITY

Refer to Section 2 of the *Membership Candidate Handbook*. It is recommended that the candidate have at least two years equivalent full time experience in the medicine of wildlife species.

#### OBJECTIVES

To demonstrate that the candidate has sufficient knowledge of, and experience in, the medicine of Australasian wildlife, to be able to give sound advice in this field to veterinary colleagues.

#### LEARNING OUTCOMES

For the purposes of this document ‘Australasian wildlife’ is defined as mammals, birds, reptiles and amphibians native to Australia and New Zealand, with an emphasis on commonly encountered species.

1. The candidate will have a **sound<sup>1</sup> knowledge** of:
  - 1.1 the biology of common Australasian wildlife species including taxonomy, distribution, diet, reproduction, and other aspects of ecology

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#### <sup>1</sup> Knowledge levels:

**Detailed knowledge** — candidates must be able to demonstrate an in-depth knowledge of the topic including differing points of view and published literature. The highest level of knowledge.

**Sound knowledge** — candidate must know all of the principles of the topic including some of the finer detail, and be able to identify areas where opinions may diverge. A middle level of knowledge.

**Basic knowledge** — candidate must know the main points of the topic and the major literature

- 1.2 the comparative anatomy and physiology of Australasian wildlife
  - 1.3 the captive husbandry and management of Australasian wildlife with particular reference to the maintenance of health and welfare, including nutrition, reproductive and genetic management, hygiene, handling, enclosure design, housing, behaviour, record keeping and preventative medicine programs
  - 1.4 common diseases of Australasian wildlife in the free-ranging, captive and rehabilitation settings including aetiology, pathogenesis, epidemiology, clinical signs, diagnosis, treatment, (both medical and surgical), control and prevention
  - 1.5 available forms of restraint for wildlife, and their relative merits, including behavioural, physical and chemical methods, including the use of neuroleptic drugs. The candidate should be familiar with remote drug delivery systems.
  - 1.6 clinical and gross pathology of common wildlife diseases, including diagnostic necropsy techniques
  - 1.7 the implications and outcomes of wildlife interactions with domestic or introduced species and humans. This includes a sound knowledge of relevant zoonotic disease, exotic disease and diseases of economic significance
2. The candidate will have a **basic knowledge** of:
- 2.1 principles and practice of disease outbreak investigations and disease risk analysis
  - 2.2 the pharmacology of drugs commonly used in wildlife including those used for anaesthesia and sedation
  - 2.3 the principles and practice of wildlife management and conservation, including an understanding of endangered species programs, recovery teams and wildlife legislation
  - 2.4 current principles and practices of wildlife rehabilitation
3. The candidate will be able to describe or, where appropriate, perform the following technical procedures:
- 3.1. with **sound**<sup>2</sup> expertise:
    - 3.1.1. full physical exam appropriate to species in question
    - 3.1.2. anaesthesia or sedation, following best accepted practice

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<sup>2 2</sup> **Skill levels:**

**Detailed expertise** — the candidate must be able to perform the technique with a high degree of skill, and have extensive experience in its application. The highest level of proficiency.

**Sound expertise** — the candidate must be able to perform the technique with a moderate degree of skill, and have moderate experience in its application. A middle level of proficiency.

**Basic expertise** — the candidate must be able to perform the technique competently in uncomplicated circumstances.

- 3.1.3. collect diagnostic samples: including blood, crop and gastric lavage, body cavity centesis, using best accepted methodology
- 3.1.4. common surgical procedures, involving both soft tissue and orthopaedics
- 3.1.5. administer therapeutics, following best accepted practice for choice of agent, doses, rates and method of delivery
- 3.1.6. safe and effective use of remote delivery systems
- 3.1.7. collect, interpret and record clinical and associated data for both individuals and groups of Australasian wildlife cases, including:
  - 3.1.7.1. historical and environment information
  - 3.1.7.2. physical examination of all body systems
  - 3.1.7.3. appropriate choice of diagnostic tests
  - 3.1.7.4. interpretation of reported haematology and biochemistry results
  - 3.1.7.5. examination and interpretation of haematological and cytological preparations from commonly encountered species
  - 3.1.7.6. interpretation of serological results for commonly encountered diseases
  - 3.1.7.7. diagnostic imaging, including appropriate positioning and views and interpretation of common radiologic findings in wildlife
  - 3.1.7.8. analyse commonly encountered wildlife problems and make sound clinical judgements
  - 3.1.7.9. communicate effectively and empathetically with wildlife rehabilitators, keepers, members of the public and other non-veterinarians involved in wildlife care
- 3.2. with a **basic** level of expertise:
  - 3.2.1. identification, including gender and age determination, of commonly encountered species
  - 3.2.2. physical restraint, following best accepted practice
  - 3.2.3. provision of short term housing, including appropriate nutrition
  - 3.2.4. transportation of common species, including appropriate choice of holding crate, preparation etc.
  - 3.2.5. short term care of orphaned young

## EXAMINATIONS

For information on the standard and format of both the Written and Oral examinations, candidates are referred to the Membership Candidate Handbook. The Membership examination has **two separate, components**:

1. **Written Examination** (*Component 1*)  
**Written Paper 1** (two hours): Medicine of Australasian Wildlife Principles  
**Written Paper 2** (two hours): Application of Medicine of Australasian Wildlife principles
2. **Oral Examination** (Component 2)  
Oral (one hour)

The written examination will comprise of two separate two-hour written papers taken on the same day. There will be an additional 15 minutes perusal time for each paper, during which no writing in an answer booklet is permitted. In each paper you are provided with four (4) questions to answer, worth 30 marks each, giving a total of 120 marks per paper. There will be limited choice within some questions to allow candidates to answer either in respect of Australian and New Zealand wildlife. Questions may be long essay type or a series of shorter answer sub-questions. Marks allocated to each question and to each subsection of questions will be clearly indicated on the written paper.

### **Written Paper 1:**

This paper is designed to test the candidate's knowledge of the principles of Medicine of Australasian Wildlife as described in the Learning Outcomes. Where questions relate to general principles, answers may cite specific examples, but should primarily demonstrate an understanding of the underlying theoretical basis.

### **Written Paper 2:**

This paper is designed to (a) test the candidate's ability to apply the principles of Medicine of Australasian Wildlife to particular cases/problems or tasks and (b) test the candidate's familiarity with the current practices and issues within the discipline of Medicine of Australasian Wildlife.

### **Oral Examination:**

This examination requires the candidate to demonstrate achievement of the above-mentioned Learning Outcomes, through the discussion of case material. Five (5) principal questions are presented with additional supporting questions asked verbally in a face-to-face setting. The oral examination has a total of 100 marks with each case allocated 20 marks. The duration of this examination is approximately forty-five (45) minutes. Questions will be in the form of both short answers and more extended discussions that may include, but are not limited to case management, techniques and procedures, interpretation of diagnostic findings and species identification. Questions may have supporting images or information that the candidate will be required to interpret.

## **RECOMMENDED READING MATERIAL**

The candidate is expected to read widely within the discipline, paying particular attention to areas not part of their normal work experiences. This list of books and journals is intended to guide the candidate to some core references and other source material. Candidates also should be guided by their mentors. *The list is not comprehensive and is not intended as an indicator of the content of the examination.*

Vogelnest L, Woods R. *Medicine of Australian Mammals*. CSIRO Publishing, 2008.

Harrison GJ, Lightfoot TL. *Clinical Avian Medicine, Vol I & II*. Spix Publishing, 2006.

Mader D. *Reptile Medicine and Surgery* 2<sup>nd</sup> edition. Saunders, 2006.

Rose K. *Wildlife Health Investigation Manual*. The Australian Registry of Wildlife Health, 2005.

West G, Heard D, Caulkett N. *Zoo Animal and Wildlife Immobilization and Anesthesia*. 2<sup>nd</sup> edition. Wiley-Blackwell, 2014.

## **OTHER USEFUL REFERENCES**

### **Journals**

Australian Veterinary Journal

Journal of Herpetological Medicine and Surgery

Journal of Wildlife Disease

Journal of Zoo and Wildlife Medicine

New Zealand Veterinary Journal

Kokako

### **General and mammalian texts**

Clark P. *Haematology of Australian Mammals*. CSIRO Publishing, 2004.

Dierauf and Gulland. *CRC handbook of Marine Mammal Medicine*. 2<sup>nd</sup> edition, CRC Press, 2001.

Fowler ME, Miller RE. *Zoo and Wild Animal Medicine*. 5<sup>th</sup>, 6<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup> editions. Saunders, 1999, 2003, 2008, 2012, 2015.

Hume ID. *Marsupial Nutrition*. Cambridge University Press, 1999.

Jackson S. *Australian Mammals: Biology & Captive Management*. CSIRO Publishing, 2003.

Jakob-Hoff R.M., MacDiarmid S.C., Lees C., Miller P.S., Travis D. & Kock R. (2014). – *Manual of Procedures for Wildlife Disease Risk Analysis*. World Organisation for Animal Health, Paris, 160 pp. Published in association with the International Union for Conservation of Nature and the Species Survival Commission.

Ladds P. *Pathology of Australian Wildlife*. CSIRO Publishing, 2009.

Tyndale-Biscoe H. *Life of Marsupials*. CSIRO Publishing 2005.

*Wildlife*, Proceedings 371, Postgraduate Committee in Vet Science, 2008.

Wobeser G. *Investigation and Management of Disease in Wild Animals*, 2<sup>nd</sup> edn, Plenum Press, 2007.

## **Birds**

Campbell TW and Ellis CK, *Avian and Exotic Animal Hematology and Cytology*. 3<sup>rd</sup> edition. Wiley Blackwell, 2007.

Doneley B. *Avian Medicine and Surgery in Practice*. Manson Publishing, 2011.

Ritchie BW, Harrison GJ, Harrison LR. *Avian Medicine: Principles & Application*, Wingers Publishing, 1994.

Rupley EA. *Manual of Avian Practice*. Saunders, 1997.

Thomas NJ, Hunter B, Atkinson CT. *Infectious Diseases of Wild Birds*. Blackwell Publishing, 2007.

Atkinson CT, Thomas NJ, Hunter B. *Parasitic diseases of Wild Birds*. Blackwell Publishing, 2009.

## **Reptiles and Amphibians**

McArthur S, Wilkinson R, Meyer J. *Medicine & Surgery of Tortoises & Turtles*. Blackwells, 2004.

Wright BR, Whittaker KM. *Amphibian Medicine and Captive Husbandry*. Krieger Publishing, 2001.

Jacobson ER. *Infectious Diseases and Pathology of Reptiles*. CRC Press, 2007.

Mader DR, Divers S. *Current Therapy in Reptile Medicine and Surgery*. Elsevier Inc., 2014.

## **FURTHER INFORMATION**

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