



AUSTRALIAN AND NEW ZEALAND COLLEGE OF VETERINARY SCIENTISTS MEMBERSHIP GUIDELINES

Avian Medicine and Surgery

INTRODUCTION

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

ELIGIBILITY

The candidate shall meet the eligibility prerequisites for Membership outlined in the *Membership Candidate Handbook*.

OBJECTIVES

To demonstrate that the candidate has acquired a high level of knowledge and competence in the principles and application of the medicine and surgery of companion, aviary and wild birds, and is able to give sound advice in this field to veterinary colleagues.

LEARNING OUTCOMES

Definition

These guidelines relate to the discipline of Avian Medicine and Surgery which includes veterinary care for companion, aviary and wild birds which are likely to be encountered in avian practice in Australia and New Zealand including:

- Native and exotic bird species which are kept as companion or aviary birds.
- Backyard show and pet poultry, including waterfowl and game birds (but not commercial poultry)
- Pigeons
- Native and non-native wild birds found in Australia and New Zealand including pelagic species
- Other species such as ratites (ostrich, emu, cassowary and kiwi) and other birds kept as zoological specimens.

1. The candidate will have a **sound knowledge**¹, in birds commonly kept in Australia and New Zealand, of:
 - 1.1. Principles of Avian Medicine
 - a. Anatomy and physiology, including knowledge of significant differences between genera and species where clinically relevant
 - b. Taxonomy
 - c. Nutrition and husbandry
 - d. Organ systems – gastrointestinal, musculoskeletal, respiratory, cardiovascular, integument, urinary, reproductive
 - e. The aetiology, pathogenesis, pathophysiology, and epidemiology of infectious and non-infectious avian diseases.
 - 1.2. Application of Avian Medicine
 - a. Clinical techniques for avian patients including, but not limited to:
 - i. Restraint and handling
 - ii. The conduct of a detailed physical examination
 - iii. Supportive care, fluid therapy, blood transfusion
 - iv. Administration of medication
 - v. Collection of diagnostic samples
 - b. The diagnostic tests applied to the diagnosis of disease conditions in birds, including, but not limited to:
 - i. Clinical pathology (haematology; biochemistry; cytology; bacterial, fungal and viral culture and interpretation; serology; molecular diagnostics)
 - ii. Necropsy and histopathology
 - iii. Endoscopy
 - iv. Electrocardiology
 - v. Diagnostic imaging including but not limited to radiology, ultrasound, echocardiography, computed tomography, and magnetic resonance imaging
 - c. Therapeutics and pharmacology, including knowledge of the pharmacokinetics and the pharmacodynamics of drugs which are commonly used in avian medicine
 - d. Anaesthesia and analgesia
 - e. Surgery, both soft tissue and orthopaedic
 - f. Oncology

¹ **Knowledge levels:**

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 core literature

- g. Avicultural medicine, including artificial incubation and paediatrics
 - h. Behaviour of commonly kept bird species, including:
 - i. Normal species appropriate behaviour and how it relates to captivity
 - ii. The principles and application of behavioural analysis and behavioural modification
 - iii. Principles of animal welfare as applied to birds kept in captivity
2. The candidate will have a **basic knowledge** of:
- 2.1. Principles
 - a. The embryology of avian organ systems
 - b. Avian immunology
 - c. The nutrition and husbandry of less commonly kept species (native wild birds, ratites and other birds kept as zoological specimens).
 - 2.2. Application
 - a. Applied avicultural techniques such as genetic selection (including colour mutation, sex-linked genes and heritable diseases), artificial incubation, and the hand rearing of neonates
 - b. Biosecurity principles as they relate to the management of avian collections, either small or large
 - c. Measures to reduce the public health significance of those diseases of birds that are zoonotic
 - d. Welfare and legislative issues relevant to the avian species and the provision of veterinary services
 - e. Infectious diseases of birds currently exotic to Australia and New Zealand but which could be of potential significance or importance to avian health if introduced, including those of importance to poultry. This includes:
 - i. Knowledge of the aetiology, epidemiology, and diagnosis of exotic infectious disease
 - ii. Government controls including:
 - a. Import risk assessment procedures
 - b. Legislative responses to exotic disease incursion
 - f. Commercial poultry enterprises and problems.
3. The candidate will be able to do the following with **competence**:
- a. Catch and handle birds,
 - b. Perform a clinical examination and obtain diagnostic samples
 - c. Apply splints and bandages
 - d. Perform necropsies of birds
 - e. Perform soft tissue and orthopaedic surgery.

EXAMINATIONS

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

- 1. Written Examination (Component 1)**
 - Written Paper 1** (two hours): Principles of the Subject
 - Written Paper 2** (two hours): Applied Aspects of the Subject
- 2. Oral Examination (Component 2)**
 - Oral** (approximately 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 is no choice of questions.

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 avian medicine and surgery, as described in the Learning Outcomes. Answers may cite specific examples where general principles apply, but should primarily address the theoretical basis underlying each example.

Written Paper 2:

This paper is designed to (a) test the Candidate's ability to apply the principles of avian medicine and surgery to particular cases/problems or tasks and (b) test the Candidate's familiarity with the current practices and current issues that arise from activities within the discipline of medicine and surgery of companion and aviary birds in Australia and New Zealand.

Oral Examination:

This examination requires the candidate to demonstrate achievement of the above-mentioned Learning Outcomes. The duration of this examination is approximately (1) hour. This will be conducted as a power point presentation, but radiographs, typed blood results or other physical aids may be used. A set number of questions which will be between five (5) and ten (10) cases are presented with supporting questions asked verbally in a face-to-face setting. The oral examination has a total of 100 marks.

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. The list is not comprehensive and is not intended as an indicator of the content of the examination.

Avian related sections in the following textbooks, journals and online resources.

Recommended textbooks²

General textbooks

Membership Candidates should be thoroughly familiar with these general textbooks.

Chitty J & Monks D., (Eds.). *BSAVA Manual of Avian Practice: A Foundation Manual*. British Small Animal Veterinary Association, 2018

Speer B. *Current Veterinary Therapy in Avian Medicine and Surgery*. Elsevier, 2016

Anatomy and Physiology

König, H. E., Korbel, R., Liebich, H., & Klupiec, C. *Avian anatomy: textbook and colour atlas*. Sheffield: 5m Publishing, 2016

Diagnostic testing

Silverman S. and Tell LA. *Radiology of birds: an atlas of normal anatomy and positioning*. Saunders Elsevier 2010

Taxonomy and species specific books

Greenacre CB, Morishita TY. *Backyard Poultry Medicine and Surgery: A Guide for Veterinary Practitioners*. Wiley, 2015

Additional References

Forbes NA, Sanchez-Migallon Guzman D. *Avian Medicine and Surgery*. (2nd ed.), 2017

Klasing, K. *Comparative avian nutrition*. CABI Publishing, UK. 1998

Jordan R. *Parrot Incubation Procedures*. Silvio Mattacchione & Co, Pickering, Canada, 1989

Menkhorst P et al. *The Australian Bird Guide*. CSIRO 2017

Swayne DW et al. *Diseases of Poultry*. (13th ed.). Wiley-Blackwell, 2013

² Definitions of Textbooks

Recommended textbook – candidates should own or have ready access to a copy of the book and have a sound knowledge of the contents.

Additional references – candidates should have access to the book and have a basic knowledge of the contents.

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Recommended Journals³

- Eolophus
- Australian Veterinary Journal (avian articles only)
- New Zealand Veterinary Journal (avian articles only)
- Journal of Avian Medicine and Surgery

Additional Journals

- Australian Veterinary Practitioner
- Journal of Exotic Pet Medicine
- Veterinary Clinics of North America, Exotic Animal Practice

Additional Reading Material

- Association of Avian Veterinarians Annual Conference Proceedings
- Association of Avian Veterinarians, Australian Committee Conference Proceedings
- Association of Avian Veterinarians, European Committee Conference Proceedings (ICARE)
- Fowler A. Husbandry and Rehabilitation of Water-birds and Seabirds, FaunaOz Education, 2016
- Fowler A. Husbandry and Diseases of Orphaned Birds, OzFauna Education, 2018
- Walker C. The Pigeon, its veterinary care, management and culture, Australian Pigeon Company, 2014
- Wombaroo Feeding Guidelines for Native Birds, 2018

³ **Definitions of Journals**

Recommended Journal – candidates should have ready access to either print or electronic versions of the journal and have a sound knowledge of the published articles in the subject area.

Additional Journal – candidates should be able to access either printed or electronic versions of the journal and have a basic knowledge of the published articles in the subject area.

Additional Reading Materials - These are conference proceedings, other non-refereed publications and other journals that would offer some information in the subject area including differing points of view, but are not required reading.

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FURTHER INFORMATION

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