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Nota di contenuto	Front Cover; Avian Immunology; Copyright Page; Contents; Acknowledgments; Foreword; List of Contributors; 1 The Importance of the Avian Immune System and its Unique Features; 1.1 Introduction; 1.2 The Contribution of Avian Lymphocytes; 1.3 The Contribution of the Bursa of Fabricius; 1.3.1 Gene Conversion and the Bursa; 1.4 The Contribution of the Chicken MHC; 1.5 The Contributions to Vaccinology; 1.5.1 Embryonic (In Ovo) Vaccination; 1.6 Conclusions; References; 2 Structure of the Avian Lymphoid System; 2.1 Introduction; 2.2 The Thymus; 2.2.1 Anatomy and Histological Organization 2.2.2 Thymic Cortex 2.2.3 Thymic Medulla; 2.2.4 Thymic Cortico-Medullary Border; 2.3 The Bursa of Fabricius; 2.3.1 Anatomy and Histology; Bursal Surface Epithelium; 2.3.2 Bursal Follicle; 2.3.3

Medulla; Bursal Medullary Epithelial Cells; Bursal Secretory Dendritic Cells; Bursal Macrophages; Bursal Lymphocytes; 2.3.4 Cortex; Peripheral Lymphoid Tissue of the Bursa of Fabricius; 2.4 Germinal Center of the Peripheral Lymphoid Organs; 2.5 The Spleen; 2.5.1 Origin and Anatomy; 2.5.2 Red Pulp; 2.5.3 White Pulp; Peri-Arteriolar Lymphoid Sheath; Ellipsoids and Peri-Ellipsoid White Pulp The Marginal-Zone Equivalent and Antigen Handling 2.6 Gut-Associated Lymphoid Tissue; 2.6.1 Follicle-Associated Epithelium or Lymphoepithelium; 2.6.2 Esophageal and Pyloric Tonsils; 2.6.3 Peyer's Patches; 2.6.4 Meckel's Diverticulum; 2.6.5 Cecal Tonsils; 2.7 Harderian and Conjunctiva-Associated Lymphoid Tissue; 2.8 Mural Lymph Node; 2.9 Ectopic Lymphatic Tissue and Pineal Gland; 2.10 Bone Marrow; 2.11 Blood; References; 3 Development of the Avian Immune System; 3.1 Introduction; 3.2 Origins and Migration Routes of Hematopoietic Cells Using Quail-Chick Complementary Chimeras 3.2.1 Looking for the Source of Hematopoietic Cells during Development 3.2.2 Macrophage Production by the Yolk Sac; 3.2.3 The Aortic Region Produces HSC; 3.3 Aortic Clusters as the Intra-Embryonic Source of Definitive Hematopoiesis; 3.3.1 Cellular and Molecular Identification of the Clusters; 3.3.2 The Para-Aortic Foci; 3.3.3 Tracing the Origins and Fates of the Aortic Clusters; 3.4 Formation of the Aorta: A Dorsal Angioblastic Lineage and a Ventral Hemangioblastic Lineage; 3.4.1 Two Endothelial Lineages Form the Vascular Network of the Embryo 3.4.2 Chimeric Origin of the Aortic Endothelial Cells 3.4.3 The Allantois: Another Source of Hematopoiesis?; 3.4.4 Cellular and Molecular Identification of Allantois-Associated Hematopoiesis; 3.4.5 Hematopoietic Production by the Mammalian Allantois and the Placenta; 3.5 The Avian Thymus and T Cell Development; 3.5.1 Thymic Development; 3.5.2 Colonization of the Thymus; 3.5.3 T Cell Differentiation; 3.5.4 TCR Rearrangement; 3.5.5 T Cell Homing to the Periphery; 3.6 The Bursa of Fabricius, B-Cell Ontogeny and Immunoglobulins; 3.6.1 Formation of the Bursal Epithelial Anlage 3.6.2 Bursal Development

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### Sommario/riassunto

The second edition of Avian Immunology provides an up-to-date overview of the current knowledge of avian immunology. From the ontogeny of the avian immune system to practical application in vaccinology, the book encompasses all aspects of innate and adaptive immunity in chickens. In addition, chapters are devoted to the immunology of other commercially important species such as turkeys and ducks, and to ecoimmunology summarizing the knowledge of immune responses in free-living birds often in relation to reproductive success. The book contains a detailed description of the avia

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