
Introduction – Volume 1: Foundations, Breeds, and Management

For thousands of years, donkeys—and their hybrid offspring, mules and hinnies—have faithfully served humankind. From ancient trade routes to modern farms, these animals have carried goods, plowed fields, and sustained livelihoods in some of the world's most challenging environments. Despite their endurance and intelligence, donkeys and mules have long remained in the periphery of scientific inquiry and veterinary education. This neglect stems, in part, from the widespread assumption that they can be treated simply as small horses with long ears. Yet, their evolutionary path, physiological adaptations, and behavioral characteristics make them distinct species that require equally distinct management and medical approaches.

The purpose of this first volume, *Foundations, Breeds, and Management*, is to establish a comprehensive scientific and practical framework for understanding donkeys and mules within their historical, biological, and cultural contexts. It is structured in three main parts, each addressing critical dimensions of long-eared equid stewardship and conservation.

Part A: Origins and Conservation traces the domestication and global dispersal of donkeys, revealing how mitochondrial haplogroups and genomic analyses illuminate their evolutionary journey from African wild asses to today's diverse breeds. This section emphasizes the importance of conservation genetics and sustainable breeding, presenting case studies on threatened populations, breed preservation programs, and policies that balance cultural heritage with scientific advancement. It also explores the sociocultural dimensions of donkey conservation, recognizing that these animals' survival is often linked to human communities facing their own economic and environmental challenges.

Part B: Roles and Industry explores the expanding roles of donkeys and mules in modern economies. Working equids remain vital to agricultural and transport systems in low-income regions, while new industries—such as dairy donkey farming and gelatin production—have created both opportunities and welfare concerns. The section offers insight into production systems, welfare impacts, and ethical considerations surrounding the global skin trade, industrial use, and the growing market for donkey milk and meat. By examining these transformations, the volume contextualizes the species' economic significance within global development and trade networks.

Part C: Husbandry and Functional Aspects provides the applied knowledge needed to manage donkeys, mules, and hinnies effectively and humanely. Readers will find detailed discussions on nutrition, anatomy, parasitology, dentistry, biomechanics, orthopedics, and hoof care, as well as practical approaches to behavior, harnessing, and saddle fit. The section integrates physiological understanding with clinical practice, emphasizing that welfare begins with informed daily management.

Together, these parts present a foundation for the next generation of equid science—one that unites molecular biology, field observation, and traditional husbandry into a holistic understanding of long-eared equids. By acknowledging their evolutionary uniqueness, cultural significance, and biological complexity, this volume seeks to elevate the scientific and ethical treatment of donkeys and mules worldwide.

It is our hope that this work empowers veterinarians, students, and owners to not only enhance animal health and welfare but also preserve the genetic and cultural heritage that these species represent. The long-eared equids, once underestimated, now stand at the center of a growing field of research and compassion—a testament to their enduring partnership with humankind.

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