

THE BIOLOGY AND MANAGEMENT OF WILD RUMINANTS

CHAPTER TWO

ORGANS, GLANDS, CHEMICAL COMPOSITION  
AND GENETIC CHARACTERISTICS

by

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## CHAPTER 2. ORGANS, GLANDS, CHEMICAL COMPOSITION, AND GENETIC CHARACTERISTICS

This chapter includes descriptions of many of the organs and glands that perform specific functions in the lives of wild ruminants, and of the chemical and genetic characteristics that are both the building blocks of each individual animal and the potential framework for future generations. The three TOPICS include UNITS that pertain to several different systems and biological functions that are discussed in other CHAPTERS. Antlers, for example, are not only secondary sexual characteristics but also partial determinants of nutrient requirements for mineral metabolism. Further, their growth and maturation affects the behavior of the male through the annual cycle.

The roles of other organs and glands are discussed in later CHAPTERS that contain discussions of the appropriate ecological functions under consideration. The descriptions of organs and glands in this CHAPTER may then be used to interpret adaptations for survival and production. Gastrointestinal tract characteristics are important when evaluating TOPIC 1: Gastrointestinal Support Functions in CHAPTER 6.

The chemicals composing wild ruminants are the end-products of metabolism. Organs, glands, and body tissues are physical entities representing the organization of chemicals ingested, metabolized, and synthesized. Some of these chemicals are deposited in particular tissues that serve as nutrient reservoirs for later use. Fat tissue, for example, is deposited during summer and fall and mobilized later, depending on hormone balances, range conditions, and the availability of forage.

The genetic characteristics of wild ruminants form the potential framework for future generations. The genetics of either individuals or populations cannot be controlled as directly in herds of wild ruminants as in herds of domestic ones because individuals are not selected for mating, but an understanding of basic genetic characteristics may be of value in explaining survival and productivity differences between populations in different areas.