

INTRODUCTION

In many water intake experiments, especially those carried out The importance of water in the physiology of farm animals has been emphasised by various workers including Bonsma (1939), Leitch and Thompson (1944), and French (1956). Within the last 10 to 15 years there has been a marked increase in the attention paid to the ability of animals to withstand the high ambient temperatures of tropical environments. This interest in heat tolerance has been stimulated largely by the need for greater production of animal products in the tropics and the fact that unadapted temperate stock have often proved unsatisfactory under these conditions. The part played by water in the thermoregulatory mechanisms of cattle is now widely appreciated and it is in this light that water intake and excretion have come to the fore.

containing some 3 lbs. less dry matter. However, its implication is clear.

Thompson *et al.* (1943), using psychrometric rooms at Missouri Experimental Station, found that both European and Zebu type cattle increased their water consumption at temperatures above 50°F. This was, however, subject to considerable individual variation, as one animal increased her water intake from 11 gallons per day at 50°F to 43 gallons at 100°F. Another animal, in the same trial, reduced consumption from 12.3 gallons at 50°F to 10.5 gallons at 100°F. The animals selected out the very considerable direct cooling effect of the large amount of water taken in by the cattle which was accompanied by an almost equal increase in excretion of water of lower specific gravity.

Mullick *et al.* (1951) conducted an experiment in India which (in the absence of psychrometric rooms) compared