

behaviour has in fact arisen from applying these skills—or at least that insight is likely to arise from their application. It is unfortunate that the author seldom takes the opportunity to show how these skills and models can provide useful explanations in psychology.

The sections on learning and perception are discussions of familiar psychological facts (for example, conditioning and extinction, and a few perceptual phenomena such as figural after-effects) in terms of cybernetic ideas. The treatment of learning seems very much the more satisfactory, and it is quite remarkable how little emphasis learning theorists have put on conditional probabilities. As the author says, whether or not Uttley's model covers all the facts is less important than the undoubted insight that this general approach gives to learning and extinction, for it puts these facts in familiar terms where precise mathematics may be used, and explicit paper or hardware models built which are capable of learning in a more or less lifelike manner. The final section on perception is less satisfactory for here the author seems to lose his way, particularly over the various *ad hoc* theories of figural after-effects utilizing satiation. Why he thinks a satisfactory general theory of perception should arise from these considerations is never made clear. The author does not succeed in showing that cybernetic or computer analogies are helpful to perceptual problems, but this probably arises from the comparative lack of success of pattern recognition machines, though what has been done gets inadequate mention. Various vague and unrealizable speculations in the psychological literature are preferred to actual working designs which have been produced by engineers. However clumsy these may be, they would seem a better basis for thought for at least they do work, though in a limited way, and it is not too difficult to say why they fall so far short of human perception.

Although the book is long, it reads as though the author never has enough space to make his points. We are continually hurried along to the next vista, and the next, until we reach the end without, in a sense, having started the journey. We are not made to use the ideas, or the intellectual tools suggested as important, or shown clearly that they can be used to help us understand the brain or behaviour. This is unfortunate because many of the models and ideas described are important and interesting, and they can only be actively developed and related to behaviour and the nervous system by experiments designed by those with some knowledge of the logical and engineering principles involved. One hopes that this book will influence students towards this approach, but it may be just too remote and too episodic to appeal.

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## U.S. ARMY VETERINARY SERVICES

### United States Army Veterinary Service in World War II

By Lt.-Col. Everett B. Miller. Edited by Colonel John Boyd Coates and Colonel George L. Caldwell. (Medical Department, United States Army.) Pp. xxii+779. (Washington, D.C.: Office of the Surgeon General, Department of the Army, 1961. Obtainable from U.S. Government Printing Office.) 7 dollars.

**T**HE development of army veterinary services in European countries, just as military evolution itself, has been rather irregular, with greatest emphasis on 'horse doctoring'. In the First World War preventive medicine began to receive attention, but not with great elaboration. The Royal Army Veterinary Corps did not even undertake meat inspection for the troops, this duty being done by the Royal Army Service Corps. During the 1914-18 operations great veterinary achievements were recorded in the 'old' conditions, and, for the first

time, the great plagues of equine animals were kept under control, even in the severe conditions experienced. Glanders was given great attention, and, due to rigorous routine inspections and the use of the specific 'skin test' (mallein), was rarely a source of trouble; mange was similarly kept from spectacular manifestations of military operations in the past.

The almost feudal outlook of the regular army up to the time of the Boer War and even afterwards had hindered proper development, but the lessons of that War led to important changes, and, by 1914, the European countries in general had good military veterinary services for mounted and draught transport. With the later replacement of equine animals by mechanization, private 'war' was being waged up to the outbreak of the Second World War to 'hold on to the horse', at least to some extent. Army veterinary services were almost in decline, and for a decade regular officers had lived in doubt about their future and been looking for other careers.

With such a background, this history of the United States Army Veterinary Service is not only refreshing but also intensely interesting. Military operations in the United States had not led to organization as seen in veterinary circles in Europe, in spite of the experience in Europe during 1916-18. By the end of 1941 an entirely new type of military veterinary organization had been developed, with preventive medicine well to the fore. Moreover, the value of trained veterinary services for duties hitherto not envisaged was being recognized with a forward outlook on likely developments in war in the very near future. With the immense operations in many theatres and diverse climates and the need for extremely large-scale landings in far-off shores, a veterinary service hitherto never seen in war was soon active.

The Army Veterinary Service is part of the Medical Department, United States Army. It is not irrelevant to say that, when that army arrived in Europe, it was a surprise to see military veterinary officers wearing the badge of the Air Corps, just one indication of the new outlook regarding veterinary services. These were officers dealing with the 'new' veterinary duties in so far as they concerned that unit of the forces. Unlike the British Service, the U.S. Army Veterinary Service specializes in food hygiene. It is responsible for the quality of all animal foodstuffs, from inspection of the animal prior to slaughter onwards. This entails service in all the departments concerned, maintenance of the products in cold-storage, etc. In addition, foodstuffs of non-animal origin were dealt with during the Second World War. 90-95 per cent of the personnel were engaged in food inspection duties. Laboratory services were on a large scale, and there were eleven elaborately equipped laboratories in the United States and 22 units overseas.

Each of the twenty chapters of this large book describes in detail a particular phase of the work done and how it was done. Noteworthy chapters concern personnel and composition of the veterinary corps; training; supply and equipment; organization at home, overseas in the several theatres of war; laboratory and research service; remounts and care of military animals; army farms, captured animals and privately owned animals. The 22 pages of the chapter on war dogs contain a mass of information about many aspects of the subject that will be of interest to those interested in dogs in general, and the same applies to the dozen pages about army pigeons.

At the peak of its strength there were 2,100 veterinary officers and "possibly more than 6,000 to 8,000 enlisted personnel". The build-up of the Service as set out in this book is peculiarly useful, and it will serve as a text-book for many countries concerned with this work. The elaborate organization for service simultaneously in many distant countries and widely differing climates, social conditions and available supplies provides historical background of immense value.