THE ROLE OF VETERINARY SCIENCE IN THE
DEVELOPING TROPICS*

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SUMMARY

The contribution of veterinary science to food production and human health in the tropics is analysed. The basic difficulties arising from the environments, animal husbandry methods and sociological patterns are emphasised. The deployment of veterinary services for disease control and animal production is outlined, particularly in the fields of extension work and research. Recommendations are made on methods of applying technical aid programmes with special reference to the role of Australia in the Indo-Pacific area.

INTRODUCTION

Since the Second World War the affairs of our global village have been analysed by experts of every conceivable type. Impelled by moral fervour, political or economic motivation they have assembled data and opinionated on a multitude of issues. Nowhere has this applied more than in relation to the developing countries of the tropics. The reason is well known for in the tropical and sub-tropical belt live dense concentrations of people with the lowest levels of income and consumption of food, and some of the greatest problems in education and health.

I find myself to be yet another of these analysts—the pontificators, as R. O. Whyte (1968) has called us. But for this I make no apology. As veterinarians we are naturally involved in the social and economic structure of the environment in which we work. We are tied to systems of animal production and we are part of the complex of sciences controlling human health.

One of the great questions of our time is how to equate human population growth with food production. I do not intend to discuss at any length the social implications of the profession's work except to remind you that between 300 and 500 million people in the world today are malnourished; malnutrition in children between the ages of one and six causes not only physical but mental retardation. The annual increase of population in the world is about 50 million; by the year 2000 the required volume of animal products must increase by an estimated 190 per cent. Whatever the cynics may say about statistics these are worrying figures.

The veterinary scientist by virtue of his basic training has the potential to operate in a wide variety of fields. Following the basic biological and chemical training of the early years of his course he is educated in the applied sciences of animal health and

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production. These are studied in relation to all the major species of food animals and poultry. At graduation he is at least primed to work in different environments and technical fields. The range of activities taken up by the veterinarian is influenced by the region itself and by the number of species for which he is responsible and even within each specialisation there are disciplines that may fully occupy his time. In Asia the key man in an area may be a poultry virologist or someone concerned with dairy cattle to the exclusion of any other animal. But it is more often the lot of tropical field officers to be generalists striving as best they can to identify and combat the diseases of several species, with little time for the finer points of nutrition or breed improvement.

THE ENVIRONMENTS

For purposes of definition the tropics can be classified on the basis of temperature, dryness, humidity, altitude, vegetation and other criteria. Several distinct environments are recognised by geographers ranging from the highly humid to the arid. To the animal in the tropics climate is all-important for it may vitally affect livestock through direct heat stress or indirectly by influencing soil quality or pasture growth. Although many studies have been carried out on the interaction between climate and animal either in the field or by the artificial means of environmental chambers there is a continuing need for work on physiological responses and animal behaviour, two of the most neglected areas in veterinary science. Any bioclimatic system poses its own problems to those concerned with animal production. To attain maximum efficiency in the present highly developed state of knowledge each system ought to be considered an integrated whole. Because this degree of omniscience has passed out of the range of any individual a multi-disciplinary approach is often to be preferred in the planning and execution of veterinary projects.

THE ANIMALS

The veterinary curriculum in all universities is basically concerned with cattle, sheep, horses, pigs and poultry. In certain countries attention is given to the buffalo, camel, goat and other species. The small domestic animals and some of the so-called exotics are studied to a limited extent; all of which adds up to a heavy commitment by the undergraduate. An intimate knowledge of individual species or even breeds depends on postgraduate experience and at the same time implies a need for specialisation that is being increasingly met in the developed countries.

Our chief purpose in life as veterinarians is to promote the production of animal protein, one of the several sources of essential amino-acids. But it has to be remembered that in the tropics animals serve a variety of functions. While food production in the form of meat, milk and eggs is pre-eminent, in many areas the draught animal has a role in agriculture in ploughing, maintaining irrigation systems and in other ways. In some tropical regions, notably Africa and India, domestic animals are woven into the social structure. This fact must be appreciated by any veterinarian who intends to advise the people, and he may anticipate problems in applying programmes of work when stock possess a social status or religious significance in themselves. It is frustrating to face inefficiently high stocking rates essential only for the owner's social standing or to be denied facilities for an autopsy on a cow on religious grounds but matters of this kind should get respectful attention. Any intending technical adviser in the tropics must be sociologist as well. The motivation of the stock owner may be quite different from that of the adviser; one must accept that in some parts of