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VETERINARY SCIENCE AND THE VETERINARY PROFESSION

Veterinary Science includes the study of the health of animals, the prevention of ill-health, and the treatment of sick animals. In addition, the veterinary profession is concerned with the fitness of meat, milk and other animal products for human consumption to protect the community from diseases of animal origin.

The prosperity of Australia depends very largely on the animal industries. Wool, mutton, lamb, beef, pigmeats, eggs, butter and cheese are important exports, and considerable quantities of all these commodities are required for home consumption. To ensure production on an efficient basis, loss from ill-health and disease must be eliminated or minimised and available fodders used as efficiently as possible.

Australian flocks and herds must be protected from such serious animal plagues of other countries as foot and mouth disease, rinderpest, swine fever, glanders, equine infectious anaemia, and Newcastle disease. This demands constant vigilance, for the risk of introduction of such diseases has increased with rapid modern transport. Some of these diseases, such as rinderpest, swine fever, and Newcastle disease, have at times gained a footing in Australia, but have been eradicated, thus saving Australia from recurrent and perhaps devastating loss.

Improved methods of breeding and animal husbandry can increase production and improve quality, and veterinarians are participating in research in these fields, and in the dissemination of results to the pastoral industry. The increase in the numbers of general practitioners in the last 20 years has brought individual veterinary attention within the reach of the majority of animal owners, not only in the large metropolitan areas, but also in most country towns and districts.

HOW TO BECOME A VETERINARIAN

Students who wish to enter the veterinary profession must graduate from the Faculty of Veterinary Science in the Universities of Sydney or Queensland. Students may undertake their first year studies at any Australian university, and then proceed to Sydney or Brisbane to complete their course. They should, however, make sure that the subjects studied will be accepted as the equivalent of first year in the University concerned. The course of Veterinary Science is of five years' duration.

Though there are some slight differences between the courses at Sydney and Brisbane, the subjects taken during each year of the course are:

First Year.—The students lay the foundations of their future study by taking courses in the basic sciences: chemistry, physics, botany, and zoology.

Second Year.—The main subjects are anatomy (the study of the structure of the normal animal); physiology and biochemistry (the study of the various body functions) and animal husbandry (the care and management of livestock). During this year, the student is concerned with the study of the normal animal so that later on abnormal or pathological conditions can be understood.

Third Year.—The major subjects are continued and further time is devoted to anatomy, physiology, biochemistry and animal husbandry.

In this year students also commence the study of disease (pathology) undertaking visual and microscopic examination of diseased tissues, and learning of the changes brought about by disease-producing agents.

Fourth Year.—This year is divided between a study of the courses of disease and the effects of these on the animal, together with the principles of diagnosis and treatment.
Fifth Year.—A more advanced study of several subjects, notably surgery, clinical medicine and obstetrics, is undertaken; as well as the application of animal husbandry (including nutrition and genetics) to animal production.

At the same time subjects such as meat inspection and pastoral botany are included.

Practical Work.—In all fields of applied science, the essence of learning is through personal experience, observation, and experiment. At all stages of the veterinary course, therefore, students engage largely in practical work. This includes dissection in anatomy and pathology, laboratory work in physiology, bacteriology and parasitology, and clinical work in medicine, surgery, and obstetrics.

Both Brisbane and Sydney Veterinary Schools are equipped with farms at which students are given practical training. Students are required to gain practical experience during vacation in breeding, feeding, and management of stock on approved farms and stations, thereby enabling those who have previously lived in cities and towns to learn at first hand the various phases of animal production.

Arrangements are also made for senior students to spend several weeks at veterinary research stations and with government veterinary officers and private practitioners. Experience with veterinarians is most valuable inasmuch as the student meets at first hand the problems with which he has to deal, and learns to apply the academic knowledge gained at the University.

After five years' study and passing the necessary examinations, the qualification obtained is that of Bachelor of Veterinary Science (B.V.Sc.). Such a degree is necessary to hold any veterinary appointment or for registration under State Veterinary Surgeons' Boards. A Bachelor of Veterinary Science is also able to qualify in Melbourne and Brisbane for the degree of Master of Veterinary Science (M.V.Sc.) after further study. The degree of Doctor of Veterinary Science (D.V.Sc.) is awarded to candidates who have fulfilled certain prescribed conditions, and made some notable contribution to veterinary science.

Full details of these courses may be obtained on application to the Registrar of the University concerned.

Scholarships.

The Commonwealth Government provides a large number of scholarships to assist students seeking higher education. These are allotted on a system based on school records and examination results. Details of these and other scholarships can be obtained from the Registrar of any Australian University.

Cadetships.

In Western Australia the State Government provides two cadetships each year for students with suitable academic qualifications. Candidates must have matriculated in subjects including English and Mathematics A and B.

The first year of cadetship is undertaken at the University of Western Australia, and the remaining four years at the University of Queensland.

First-class rail fares and University fees are paid together with living allowance to cover board and other expenses.

In return, the cadet upon qualification is required to serve as a veterinary officer in the Department of Agriculture for a period of five years.

More detailed information concerning these State Government cadetships may be obtained from the Chief Veterinary Officer, Department of Agriculture, Perth.

WHAT OPENINGS ARE THERE FOR VETERINARY GRADUATES?

There are two main groups within the profession: (a) general practitioners whose main function is the prevention and treatment of ill-health in individual animals and (b) Government officers chiefly concerned with research and advisory work, food inspection, quarantine and the control of transmissible diseases. Other veterinarians may be employed by Universities, research institutes, and private firms on research and advisory work.

(a) Private Practice.

The largest single avenue for employment of veterinary graduates is in private practice, and although the number en-
gaged in that work has increased considerably in recent years there is still room for expansion.

In the metropolitan areas, racehorses and small animals, such as dogs and cats, comprise the majority of patients, although practitioners in the outer metropolitan areas also work among dairy cattle and other farm animals. Some practitioners deal almost exclusively with poultry.

In a few States it is the government policy to engage practitioners in selected rural areas for tuberculin testing and vaccination. Part-time employment of this nature may be of considerable value to graduates who are establishing new practices.

Recent graduates may be employed as assistants to established practitioners, thus gaining extra experience while acquiring sufficient capital to set up their own establishments.

**Subsidised Rural Practice.**

In some States co-operative organisations employ one or more veterinarians to provide expert services for their members, whereas others achieve the same object by paying subsidies to practitioners. Some dairy companies station veterinarians in the country areas from which they draw their supplies. Veterinarians in subsidised practices also advise farmers on preventive measures, animal husbandry and production.

**Government Services and Teaching.**

Apart from those engaged in some form of private practice the next largest group in the veterinary profession is engaged in the control of infectious diseases, in teaching at one of the veterinary schools, and in research into animal health problems. The principal organisations employing veterinary graduates in this way are set out below.

**(i) Commonwealth Government Veterinary Service.**

Veterinary officers are employed in the Division of Veterinary Hygiene of the Health Department, in the Department of Commerce and Agriculture, at the Commonwealth Serum Laboratories, and by the Northern Territory and Papua-New Guinea administrations.

The Commonwealth Division of Veterinary Hygiene administers the animal quarantine laws and is responsible for animal disease control in the Australian Capital Territory. Veterinary officers of the Department of Commerce and Agriculture are stationed in various parts of Australia, particularly at meat export works, and are responsible for the inspection of all meat and meat products exported from Australia. They must ensure that these conform to the requirements of the importing country in regard to freedom from disease and in other respects. At the Commonwealth Serum Laboratories, sera, vaccines and other biological products for the control of human and animal diseases are produced. The veterinary services of the Northern Territory and Papua-New Guinea, like those of the States, are responsible for regulatory and advisory work in relation to animal disease and animal husbandry.

**(ii) Commonwealth Research Service.**

The Commonwealth Scientific and Industrial Research Organisation, through its Division of Animal Health and Production with laboratories in most States, engages actively in veterinary research, particularly into problems of national importance.

**(iii) State Administrative, Advisory, Research and Diagnostic Services.**

Each Australian State has a veterinary service which is responsible for the administration of the Acts and regulations relating to the control of transmissible diseases of animals, and for advisory services on animal problems to farmers and graziers. Each State also maintains its own research station or research laboratory.

**(c) Commercial Firms.**

In recent years many of the larger chemical companies have engaged in the production of veterinary drugs and vaccines. Research and development work is frequently involved coupled with advisory work in some instances. Occasional vacancies occur with companies processing milk and other animal foods, also with fertiliser companies. There is a growing demand for veterinarians as advisers in fields such as these.
CONCLUSION.

Though the ranks of the profession have been considerably augmented in recent years, there is still an unsatisfied demand for veterinary graduates. Factors that have been responsible for this expansion are:

(a) The increasing attention being paid to the control of animal diseases.
(b) The increasing awareness of the need for care of sick and injured animals.
(c) The growing recognition of the importance of food production, and the recognition of the role of veterinary science in maintaining the health of food-producing animals.
(d) The increase in population of Australia.
(e) The provision of more money for research, advisory and regulatory work, due to a realisation that a sound livestock industry is essential for national prosperity.

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