Part 2

FACULTY OF VETERINARY SCIENCE

General History

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Birth of the Faculty (1920-1930)

Veterinary training has deep roots in history. There are indications that the priests in ancient Memphis were training animal doctors around 3000 BC. From the 13th Century AD, documents exist which deal with the treatment of sick animals by Abou Bekr, veterinarian of the Sultan of Egypt.

It is noteworthy that the very first South African to become a qualified veterinarian was a Xhosa. In 1886, at the age of 21, Jotello Soga graduated at the University of Edinburgh. On his return to South Africa he carried out pioneering studies on toxic plants and assisted in the campaign to eliminate rinderpest. He was also a founder member of the Veterinary Society of the Cape of Good Hope, which later amalgamated with societies of other regions to become what is known today as the South African Veterinary Association.

The history of the Faculty is closely linked to that of the Onderstepoort Veterinary Institute and to avoid repetition only the salient points in its early development will be discussed here. Soon after the founding of the Institute by Theiler it became clear to him that there was an urgent need for the training of veterinarians in South Africa, with its unique diseases and challenges. In fact, in the ‘Old Main Building’ at Onderstepoort, which was erected in 1908 and today is a historical monument, provision was already made for a ‘students’ laboratory’ and a ‘lecture hall’.

In March 1914 he had the first opportunity to present his ideas to a State Commission on Higher Education (known as the ‘Universities Commission’) which was hearing evidence on tertiary education. In the interview he referred with pride to the three new South African veterinarians, P.R. Viljoen, G. v.d.W. de Kock and H.H. Curson, who had all qualified in England at the Royal Veterinary College. He had the strong support of J.B. Smith, Secretary of Agriculture, who had been promoting the establishment of training in agriculture ever since taking office.

Later, in 1914, the Senate of the Transvaal University College (TUC) submitted a memorandum to the TUC Council on the subject of proposed veterinary and agricultural courses. In 1915 a sub-committee was appointed to take up the matter with government and in 1916 a decision was reached to establish a Faculty of Agriculture with a Chair in Veterinary Science. When Theiler retired as Director of the Institute in 1917 he was offered the Chair but declined. In 1918 the chair was then established with P.R. Viljoen as the first Professor of Veterinary Science. In 1919 further representations were made and the TUC Council approved the establishment of a Faculty of Veterinary Science and sent a delegation to the Minister of Education to obtain his formal approval. In April 1919 the Minister appointed a departmental committee under the chairmanship of G.M. Hofmeyr, Under-Secretary for Education, and consisting of, inter alia, F.B. Smith, A. Theiler, E. Montgomery, P.R. Viljoen, E.C. Gray.
(Principle Veterinary Officer) and Prof A.I. Perold, Dean of the Faculty of Agriculture in Stellenbosch.

After considering proposals by the TUC, the University Colleges of Johannesburg, Stellenbosch and the Grey University College, the committee submitted a lengthy report in August 1919 with a majority recommendation that a faculty should be established at the TUC but that the first 2 years of academic training could take place at any university college with the necessary infrastructure. The last 3 years of a 5-year course would be presented at Onderstepoort only, utilizing the existing facilities and research staff financed and administered by the Department of Agriculture. This unique solution to a complex problem clearly reflected Theiler’s insistence on the unity of research and training.

The recommendations were accepted by government who then joined various other organizations in exerting pressure on Theiler to accept the position of first Dean of the new Faculty. This included an interview with the new Prime Minister, Gen. J.C. Smuts, who also played a major role in converting the TUC to the University of Pretoria (UP). Meeting Theiler’s conditions that all the activities at Onderstepoort must be under one head and that no other veterinary faculty should be established, he was offered the combined position of Director of Veterinary Education and Research, which he accepted, and was asked to draw up a plan for the implementation of the report (for more details see Part 1). At a board meeting on 18 December 1919 the Principal of the TUC announced ‘the institution of a Faculty of Veterinary Science’.

Theiler’s recommendations on new buildings and facilities needed for tuition purposes at Onderstepoort were also accepted. These included extensions to the building for pathological anatomy, a second post mortem building, new laboratories for biochemistry, an animal hospital for clinical training, new homes for personnel, and a students’ hostel. Theiler challenged the government to be generous in its efforts as ‘Onderstepoort is already one of the “show places” of Pretoria and the new buildings should be in keeping with the ideal which the new institute has before it.’ The original budget was 100,000 pounds sterling, but eventually the cost was £175,000.
The first appointment in June 1920 was that of P.R. Viljoen, who played an exceptionally active role in the creation of the Faculty. He provisionally became Professor of Anatomy. On 20 August 1920 the appointment of six professors was announced: Sir Arnold Theiler (Pathology); P.J. du Toit (Hygiene and Infectious Diseases); H.H. Green (Biochemistry); G. v.d. W. de Kock (Anatomy); W.H. Andrews (Physiology) and P.R. Viljoen (Medicine). E.M. Robinson (Hygiene) and C.P. Neser (Medicine) were appointed as lecturers. Theiler was the first Dean and maintained this position till his retirement in 1927. Later appointments to the Faculty of Institute staff who were actively involved in the teaching of the first group of students and who can therefore also be regarded as foundation members of the Faculty were F. Veglia (Helminthology), J. Quinlan (Surgery), H.H. Curson (General Hygiene) and P.J.J. Fourie (Special Bacteriology).

The first group of eight students received the BVSc degree in 1924. Theiler was the spokesman at this occasion and he referred to the two-fold objective of veterinary education: scientifically trained graduates who are equipped to do research but also to fulfill the responsibilities of a state veterinary officer. Between 1924 and 1929, 42 students graduated and two obtained doctorates. The initial decision that the first 2 years of the 5 year BVSc course could be done at any university in the country equipped to teach the relevant subjects proved to be unpractical. After a year Stellenbosch pulled out, followed by Johannesburg in 1925. Pretoria then became the sole provider of the complete course. In 1926 it was decided that the second year should also be taught at Onderstepoort and not at the TUC campus.
As expressed by Theiler at the first graduation ceremony, the main goal of the Faculty was initially to train state veterinarians. During the 1920s and 1930s there was little or no demand for veterinary practitioners, mainly because of the low economic value of animals and animal products. The emphasis during training was therefore on the basic scientific disciplines such as Pathology, Toxicology, Parasitology and Infectious Diseases, whereas clinical training was rather neglected. On the positive side the fact that the students were intimately exposed to the research programmes of their teachers meant that excellent researchers were trained.

During the 1933 depression, the Department of Agriculture announced that because of financial constraints only 15 of the 44 registered students at the Faculty could be employed by the Department. This resulted in a sharp decline in graduates. In 1933 only two degrees were conferred. This increased to 13 in 1936, but in 1944 it was back to six. During these difficult years P.J. du Toit, as Director of the Institute, also served as Dean of the Faculty.

Improved roads and motor transport and the increased value of animals brought about major changes in the veterinary environment. Private practices were shooting up towards the late 1930s and suddenly there was a shortage of veterinarians. This resulted in an increase in student numbers, greater emphasis on clinical training and in the addition of applied subjects like Meat and Milk Hygiene, Poultry Diseases, Zootechnology and Nutrition. Training became increasingly focused on producing private practitioners as well as managers of extensive breeding stations and municipal services.
The period since 1940 was therefore very different from the first 2 decades since the inauguration of the Faculty.

The fact that the Faculty was subject to control by the UP on the one hand, and by the Institute and Department of Agriculture on the other, became increasingly problematic. The appointment of staff became a bone of contention, for example. In practice the Director of the Institute, who was also the Dean, advised the Faculty who he intended to recommend for appointment in a vacancy. The university authorities had to ratify the decision and the Department, through the Public Service Commission, then had to make the appointment. According to the original agreement all teaching staff was derived from the Institute’s research staff. This resulted in the inability to appoint suitable candidates for the clinical disciplines. Another problem was that all staff members were part-time appointments and as civil servants had to take part in routine duties, leading to complaints of excessive workloads. As early as 1939 representations were made that the solution of the problem was separation between Faculty and State Veterinary Services at Onderstepoort.

In 1942 the situation improved. For the first time notices regarding vacancies were sent to all state veterinarians. The Faculty selected the applicants, which the Minister could approve or reject, but he was not allowed to make alternative appointments. In 1949 the Faculty, of which Gilles de Kock was the third Dean, appointed a committee under the chairmanship of P.J.J. Fourie to take up the matter again and to make recommendations about a future dispensation. The committee again expressed the opinion that the existing organizational setup did not benefit veterinary education and recommended conversion to full faculty status under the sole control of the University, which should also take full responsibility for salaries and other expenses. The report was unanimously accepted by the Faculty and submitted to the Senate and Council of the UP in the form of a memorandum requesting full status as an ‘independent academic unit’.

Although the Senate and Council reacted sympathetically and started negotiations with the Department of Agriculture, the matter was not resolved until the end of 1957, mainly because of the involvement of so many role players. Any drastic reorganization would also affect the various Faculties of Agriculture countrywide, which were also the responsibility of the Department. During this period Fourie, who succeeded J.J. Quin as Dean, played an important role in the ongoing negotiations. Quin had sadly passed away in 1950 within months of taking office.
New buildings and a new dispensation
(1951-1957)

The original buildings at Onderstepoort, which were used for teaching since 1920, became totally inadequate as the student numbers increased and the Institute expanded. In 1949 the University Council brought the need for new Faculty buildings to the attention of the Minister of Agriculture and in 1950 a global sum was made available for the building of a new complex opposite the Research Institute, on the west side of the main road. In 1952 the main building was completed. The others were completed by 1954 under the auspices of the Public Works Department at a cost of £450 000. Apart from the main building, which contained lecture halls, laboratories and administrative offices, it consisted of an Anatomy block, a block for Medicine, Surgery and Physiology, a temporary section for Poultry and stables for large and small animals.

By 1957 staff shortages were more critical than ever. Negotiations between the University and the Department of Agriculture continued throughout the year, resulting in an agreement that teaching staff would remain civil servants but would form a 'closed group' within the Department. The group would consist of a core of full-time teaching officials supported by part-time lecturers with research as their main responsibility. As far as remuneration was concerned, full-time staff would be on equal footing with other university staff and salaries would be paid by the University. The University would receive the student's tuition fees, but the State would be responsible for the basic salaries. Research and publications would still resort under the Director of Veterinary Services and the name Onderstepoort would still be attached to important projects.
DEPARTMENTAL HEADS OF THE FACULTY IN 1957

The academic staff appointed in 1957 was the first group appointed after all the posts have been advertised. This was a deviation from the previous procedure where all the lecturing staff were derived from the personnel of the Research Institute, and was agreed upon to attract clinical expertise from the private sector. This goal was achieved with the inclusion of Profs. Hofmeyr and van der Walt, both from private practices.

The new arrangement was disappointing for the Faculty as their aim to become an ordinary faculty of the university was not yet achieved. It did hold several advantages, however, which made the agreement acceptable. The new order meant that all existing lecturers had to resign, that the posts would be advertised outside the civil service and that the number of appointments agreed upon would be honoured. In order to alleviate the financial implications the Faculty agreed to reduce the number of departments from 16 to 9. This included a special agreement that four former heads of departments would maintain their seats in the Senate. Of the nine full professorships four were temporary appointments. In addition four associate professorships were created. In total there were now 10 full-time and 22 part-time teaching posts.

When the new Faculty assembled at the beginning of the new term in 1958 there were eight new faces, including two candidates recruited from the private sector for the clinical departments, under the leadership of H. Graf who was Dean from 1956-1960.
Consolidation and independence  
(1958-1982)

The years between 1958 and 1982 can be regarded as a period of sustained growth and consolidation during which maturity and the long-held ideal of independence was reached. Three deans served during this period: Professors R.M. du Toit (1960-1963), B.C. Jansen (1963-1969) and C.F.B. Hofmeyr (1969-1981). During the previous period only 30 students were accepted annually to the second year of study and the number of applicants far exceeded this figure. In 1962 the quota was increased to 45 and in 1976 to 90. To accommodate these numbers and the concomitant increase in teaching staff, new buildings were added in the early 1960s, including additions to the students’ hostel, the Medicine department and animal facilities.

The first of April 1973 was a turning point in the history of the Faculty. Following another investigation under the leadership of Prof C. van der Merwe Brink it was decided that the UP would take over full responsibility for an independent Faculty from this date. The rationalization which followed this decision meant that the four departments which were still situated at the Institute had to be moved to the Faculty campus and the remaining part-time lecturers were phased out. Although it was decided to implement the move gradually, a crisis loomed especially in view of the doubling of student numbers in 1976. Temporary buildings were erected to ease the situation but it was clear that a major expansion had become essential. This triggered a new debate on whether the existing facilities should be expanded or a new campus should be built. A one-man commission consisting of Prof D.M. Joubert, later Rector of UP, considered the advantages and disadvantages of the existing site and recommended that the close association with Onderstepoort should be retained. The financial committee of the UP Council decided in favour of this recommendation but also in favour of erecting new buildings rather than upgrading the old ones. The Dean, C.F.B Hofmeyr, was strongly in favour of moving to a site next to the CSIR, however, and convinced both the Faculty and University Councils to support this position late in 1976. The Minister of National Education turned down the request in 1977 ‘in view of the ruling financial situation’. In 1980 another representation was made to the state which was then referred to the Advisory Committee on Universities. After a thorough investigation, which included a visit to Onderstepoort and wide consultation, this body finally decided that the Faculty should remain at Onderstepoort but at the same time advised the Minister that a major expansion programme was urgently needed.

In spite of physical constraints significant changes to the academic programme were implemented during this period. The BVSc course was extended from 5 to 5 ½ years and a MMedVet degree introduced in 1963 to span the gap between the BVSc and DVSc. In time this degree was required for professional specialization and was offered in no less than 18 different disciplines. In the same year the training of veterinary nurses towards a diploma (Dip.Med.Vet.) was initiated and in 1979 a BVSch(Hons) degree added. Another important introduction in 1962 was an annual Sir Arnold Theiler Memorial Lecture which attained international status being delivered by international experts on special invitation.

Veterinary nurses in training
Renewal and growth
(1983-1999)

The period between 1983 and 1999 was essentially one of renewal and growth of the physical facilities of the veterinary campus. Under the leadership of two deans, J.M.W. le Roux (1982-1986) and R.I. Coubrough (1987-1999), a complete renovation of existing facilities and a major building programme had to be planned and executed without disruption of the academic activities. The focal point of the new campus is the Sir Arnold Theiler Building which consists of lecture halls, a library, administrative offices and a cafeteria. Building started in 1984 and it was officially opened by the State President P.W. Botha in 1987. The new building for Pathology and Veterinary Public Health was inaugurated in 1988 by the Vice-Chancellor Prof D.H. Joubert and in the same year work started on the largest new building, the Veterinary Academic Hospital. This building can be regarded as the flagship of the campus and is comparable to the best in the world, providing modern facilities for the departments of Surgery, Medicine and Reproduction. It was officially put into service in March 1992.

On completion of the total programme, at an estimated cost of around R117 million, the University of Pretoria could boast with one of the most attractive and functional veterinary campuses worldwide and certainly the leading veterinary school in Africa. Renewal also involved the academic programme and staff composition. A new post of Deputy Dean and Director of the Onderstepoort Veterinary Academic Hospital (OVAH) was created with P. Bland van den Berg as the first incumbent.

New curricula were developed for all courses, including those for veterinary nurses, and study guides developed for all disciplines. Computerization of the whole campus was achieved and a research committee as well as an ethics committee instituted to plan and execute a coordinated and focused research programme, accommodating an increasing number of postgraduate students.

To promote postgraduate studies research-based MSc and PhD degrees were introduced. External funding was obtained for the establishment of two new chairs: the Abe Bailey Chair for Equine Surgery and Medicine, and the Price Forbes-Federale Volkskas Chair for Wildlife Diseases. The latter was a first in Africa and one of very few in the world. In 1990 an Equine Research Centre was founded with the support of the racing industry with A. Guthrie as first Director.

The five year period from 1993 to 1998 was dominated by the negotiations on the
amalgamation of the two veterinary faculties in the country: those of the University of Pretoria and the Medical University of South Africa (Medunsa). The councils of the two universities and the National Department of Education supervised the negotiations which took several years to complete and eventually led to the establishment of a new Faculty of Veterinary Science under the guardianship of the University of Pretoria.

In anticipation of the amalgamation considerable restructuring of the faculty already took place during the period under discussion. The Departments of Pharmacology, Toxicology and Poultry Diseases were reinstituted as independent departments between 1983 and 1986 whereas the Departments of Infectious Diseases and of Parasitology were combined to form the Department of Veterinary Tropical Diseases in 1992.

Further integration of related disciplines were on the cards, in order to reduce the number of departments and to focus the attention on those areas in which veterinary science ought to make the greatest contributions in South Africa, namely veterinary tropical diseases, veterinary public health, community-based programmes and African wildlife diseases.

At the end of this period the Faculty was therefore well positioned to deliver relevant training and research of a high standard.
During the period 1999-2005, veterinary training went through considerable turmoil. Following a protracted period of negotiation to amalgamate the two faculties – the Faculty of Veterinary Science of the University of Pretoria, and the Faculty of Veterinary Science of Medunsa – N.P.J. Krik was appointed as the Dean of the New Amalgamated Faculty of Veterinary Science and commenced his term on 1 March 1999. H.M. Terblanche from Medunsa became Deputy Dean.

The new Faculty that came into being at the beginning of July 1999 was positioned as a national asset that had to attend to the needs of the broad South African Community given the lack of access to tertiary education and veterinary services that prevailed in many segments of the population before 1994. The amalgamation was also driven by a need to reduce what was perceived by the authorities to be an excessive financial investment into veterinary training in South Africa.

The drive to reduce the total cost of veterinary training, to source additional funding for the Faculty, and to provide access to students from the disadvantaged groups of the population determined the milieu for this term. Amalgamation proved to be a major transition and it took the best part of 5 years to finalize the matter; the issues pertaining to human resources proving to have the greatest impact and taking the most time to manage. In the end, amalgamation was implemented without having to lay-off staff, the number of which initially markedly exceeded that for which funding was available, and without losing a day of academic time following fusion of the two student bodies.

To accommodate the different structures of the curricula of the two faculties, namely Onderstepoort and Medunsa, the two current curricula that were not compatible due to structure and time-frames, were maintained and phased out over time while a new agreed-upon curriculum was implemented concurrently. This new curriculum attempted to address the imbalance in emphasis between companion animals and production animals.

The curriculum was further structured on a mixed discipline and species basis, but ultimately it did not satisfactorily address the imbalance. Largely driven by financial constraints, and in an attempt to access sufficient funds from the Department of Education, the curriculum was repackaged into a 3+4 configuration, the first three years being a three-year BSc Veterinary Biology course offered by the Faculty of Natural and Agricultural Sciences of the
FUSION OF THE ONDERSTEOORT FACULTY AND THE MEDUNSA FACULTY

Fusion of the student bodies in itself was a challenge. The two faculties had different cultures and ethnic compositions; the Onderstooort faculty being essentially white, and the Medunsa faculty black. The student bodies from both faculties made a major contribution to the process that led to the fusion of the two groups and only minor problems cropped up during the course of time. Over time the composition of the student body changed to predominantly white and female, the intake during some years being up to 70% female while the number of black students never surpassed 10% of the annual intake, this in spite of a major drive to create awareness and to attract black students into the course.

University of Pretoria, and a four year BVSc professional course on the Onderstooort campus.

Ironically, at the time of implementation, the funding formula was changed and no financial benefit was obtained by this exercise that attracted major criticism from the veterinary profession because the course was deemed too long and too expensive. During this time, increasing societal pressure questioned the relevance of current veterinary curricula internationally, specifically as they pertain to the needs of society; the indications being that the increasing emphasis on companion animal medicine was not addressing the needs in the fields of public health, global trade issues, zoonoses, and emerging and re-emerging diseases. This matter was taken up by the South African Veterinary Council but progress was agonisingly slow.

The visitation by the Royal College of Veterinary Surgeons in 1999 under the chairmanship of Prof Lance Lanyon identified a number of critical issues in the Faculty that impacted on its future activities, including the training of veterinarians and veterinary nurses. The major issues that they identified were over-investing in and over-training of aspiring veterinarians and veterinary nurses, a totally inadequate research output, and isolation from the main stream of veterinary science compounded by a process of in-breeding. The outcome of this visitation did ensure continuation of the recognition of the BVSc degree for registration purposes with the RCVS, and, for the first time, recognition of the degree for registration purposes by the Australasian Veterinary Boards Council and by the Malaysian authorities.

In keeping with international trends, the number of academic departments in the Faculty was reduced to five: Anatomy and Physiology, Paraclinical Sciences, Veterinary Tropical Diseases, Companion Animal Clinical Studies, and Production Animal Studies. These changes were linked to a system of participatory management of the Faculty ensuring a common vision and mission structured within the context of that of the University of Pretoria. At the end of amalgamation, the Faculty staff comprised 350 people of which 100 were academics. This was an increase in numbers compared to the previous Onderstooort Faculty, but within the context of the size of faculties internationally it remained a small to medium-sized faculty and probably inadequate for the needs of the country and the sub-region given the scope of veterinary problems in South Africa, its marked diversity of climate and ecosystems, and range of wildlife.

Clinical training at the Faculty remained strong and the activities in Diagnostic Imaging, Small Animal Medicine, and Reproduction were considered adequate for training for the purposes of the European Speciality examinations. Similarly, the Section of Pathology was recognised as a training centre for candidates wishing to sit the examination of the American College of Veterinary Pathologists. A strategy was designed by which the research output of the Faculty would be more focused and increased, and the qualification profile of the academic staff improved. This process was linked to strengthening the quality criteria applicable to promotions of the academic members of staff.

The new political dispensation in South Africa allowed free movement and association not possible during the previous decades. Networking with other faculties and research institutions was established and formalized and included the School for Veterinary Medicine in Oslo, Norway, the Faculty of...
Veterinary Medicine of the University of Utrecht, the College of Veterinary Medicine in Davis, California, and the Eduardo Mondlane University in Mozambique. Close collaboration was also established with the regional Anglophone facilities in southern and eastern Africa. The Department of Veterinary Tropical Diseases excelled in this respect and positioned itself globally, capitalizing on the new opportunities provided by globalization and the development of international teams. In October 2006 Kriek was succeeded as Dean by G.E. Swan.

The closing years of the centenary period were characterized by progress towards the goals set by the Faculty in its Faculty Plan, including:

- allocation of additional annual funding by the Department of Education from 2006 onwards towards the cost of the Veterinary Academic Hospital, Faculty Services Laboratories and the Onderstepoort Training Animal Unit, relieving to a large extent the pressures of the sustainability of the cost of veterinary training for the University of Pretoria;
- the review of the current two degree structure of veterinary training and the re-instatement of a single degree training programme, revised to take account of the latest trends in veterinary training;
- restructuring of the two-year veterinary nursing diploma to a 3-year degree and the development of a veterinary nursing academic programme;
- measures taken to increase its research output, inter alia by establishing a research ethos, by increasing the numbers of postgraduate students and by encouraging the teaching staff to submit themselves to National Research Foundation (NRF) rating.

To drive the process of research stimulation and advancement D.W. Verwoerd, former Director of the ARC-OVI, was appointed as Research Coordinator. The number of postgraduate bursaries allocated had increased from two in 2004 to more than 30 in 2007 and the number of NRF-rated staff from 7 to 16, indicating significant growth in the basic requirements for a successful research programme. During the same period the total number of Masters and PhD student enrolments increased by more than 20% and research output as measured by audited Department of Education publication output by more than 30%. It is also gratifying that between 40 and 60% of the postgraduate students came from previously disadvantaged groups. In order to focus its research efforts and to concentrate on problems unique to Africa the Faculty identified six research themes:

- Molecular studies on infectious and parasitic diseases of animals;
- Phyto-medicine and ethno-veterinary medicine;
- Wildlife and environmental health;
- Veterinary aspects of food safety and food security;
- Equine and companion animal health and welfare; and
- Anatomical and physiological studies on animals.

The first two of these were accepted by the NRF for long-term financial support, which bodes well for the future. Significant achievements have, however, also been attained in other areas and scientific disciplines. Those who share a common history with the ARC-OVI are discussed in Part 3 whereas brief summaries of developments in faculty-specific departments are given below.

In May 2006 the Faculty received its first full visitation by the South African Veterinary Council under the Chairmanship of P. Ardington. The visitation was preceded by completion and submission of a Self Evaluation Report according to the guidelines as determined by the Council and standardized with those of the European Association of Establishments for Veterinary Education (EAHEE) and followed by a visit to the Faculty by the review team. The outcome of the review of the veterinary undergraduate and veterinary nurse training programmes was positive. Several recommendations including education innovation, exposure to veterinary research in undergraduate training and the need for elective modules were made.
Faculty-specific Departments

Until 1957 a system of informal departments existed, coinciding with those at the research institute of which the staff lectured to the students on a part-time basis. Each scientific discipline therefore initially formed a ‘department’, the number of which increased as the curriculum developed. Over the years some subjects disappeared, others were added or combined in various ways to suit the circumstances. For example Surgery was added in 1921 to the original six disciplines and Embryology, Pharmacology, Bacteriology, Helminthology and State Veterinary Medicine in 1923. In 1925 Embryology was replaced by Tropical Medicine and in the following year Zootecology was introduced. In 1928 Tropical Diseases and Protozoology replaced Tropical Medicine, Infectious Diseases and Bacteriology were combined and Pathological Physiology added.

By 1957 there were 16 departments which were unacceptable to the university. As part of the negotiated restructuring of the faculty this number had to be reduced to nine. It was achieved by combining related disciplines into one department. Biochemistry and Chemical Pathology were incorporated into Physiology, for example, followed by further additions in 1971 of an Equine Physiology unit, Pharmacology and Toxicology. The latter two became an independent department again in 1986 and the Equine unit became an independent Equine Research Centre in 1990. The amalgamation with Medunsa in 1999 led to further restructuring, eventually resulting in the present (2008) five academic departments named above.

It is clearly almost impossible to discuss the history of each department separately. Therefore only brief historical overviews of those disciplines which were transferred in toto to the faculty and whose development is not incorporated elsewhere are given here.

Anatomy

Anatomy was the first chair in the new faculty to be filled on a provisional basis early in 1920 by the appointment of P.R. Viljoen, who was at that stage the professor in Veterinary Science at the Faculty of Agriculture of the Transvaal University College (TUC). When the first six professors for the new veterinary faculty were finally appointed in August of that year he had been transferred to Materia Medica with G. v.d. W. de Kock in the chair for Anatomy, a position he had filled at the University of Stellenbosch the previous year. M.W. Henning was a lecturer in the department since 1922 and deputized for de Kock when the latter was appointed to the chair for Pathology in 1923 after spending a year in Berne specializing in pathology. In 1926, when the second year of study was moved from the universities to Onderstepoort, the chair was filled by R.W. Mettam, who had been the professor of Veterinary Anatomy at the University of the Witwatersrand in Johannesburg.

In the meantime Henning had transferred to the TUC as Professor in Veterinary Science. Mettam resigned after a year and was succeeded in 1927 by H.H. Curson who brought some stability to the department before resigning in 1936 to accept a position in the Department of Native Affairs. Curson contributed significantly to teratology and embryological research and was the first staff member to lecture in Afrikaans on histology.

C. (Cecil) Jackson was the successor of Curson and occupied the chair for 19 years. His main interest was histology and his most important contribution an extensive study of the tumours of domesticated animals in South Africa which won him international recognition. He was also an accomplished cellist. When Jackson resigned in 1955 he was succeeded by H.P.A. de Boom, popularly known as ‘Boompie’, who had been lecturing in embryology since 1940 and was famous for his spectacular 3-dimensional demonstrations of the complicated processes of embryonic development.

De Boom was appointed as the first full-time professor in Anatomy in 1958 when the Faculty was restructured and remained in this position until his retirement in 1974. In 1975 the responsibility for the department was taken over by J.M.W. (Jan) le Roux who served in this position until 1982 when he became the tenth Dean of the Faculty. Le Roux was a productive researcher with a substantial list of scientific publications. During his time the first associate professor was appointed in the person of W.H. Gerneke who had been active in the department in various capacities since 1948. In 1982 M.M.S. (Malie) Smuts was the first female professor to be appointed at the Faculty. Shortly thereafter she spent a year in Israel.
to study the anatomy of the camel which led to the publication in 1986 of the first comprehensive textbook entitled ‘Anatomy of the Dromedary’, in collaboration with her associate A.J. Bezuidenhout. She was also responsible for the modernization of course material and the development of videos to achieve it. Two of these were awarded by the university as the best educational videos produced in 1989 and 1992 respectively. Bezuidenhout was instrumental in adapting the research programme of the Anatomy Department, of which he became Head in 1986, to the mission of the Faculty which included an emphasis on wildlife diseases. One result of this change was pioneering research on the anatomy of the ostrich, work that is still ongoing.

During the last decade of the 20th century this process of renewal and curricular transformation continued with a change to a species-based approach and the integration of the anatomy and embryology courses. The amalgamation with Medunsa also presented challenges and required revisions which were led by H.B. (Herman) Groenewald, who succeeded Bezuidenhout in 1999 as head of the department. The amalgamation was closely followed by a rationalization of departments in the new Faculty in 2001, resulting in the merging of the Anatomy and Physiology Departments and the Electron Microscopy Unit.

Groenewald was subsequently appointed as the head of the new Department of Anatomy and Physiology with J.G. (Johnny) van der Walt as head of the Physiology Section. In 2004 van der Walt passed away and J.T. (John) Soley was appointed section head of Physiology. In the years following amalgamation the department has expanded its research on wildlife anatomy, with studies being conducted on various aspects of the anatomy of the ostrich, crocodile, African buffalo and elephant. The department has firm research and teaching partnerships with a number of well-known overseas universities including the University of Veterinary Medicine in Vienna; the Faculty of Veterinary Science, Swedish University of Agriculture; and the Utrecht University in the Netherlands. There are currently three professors and four associate professors among the lecturing personnel. Eight members of the current staff hold doctoral degrees.

**Medicine**

In 1920 P.R. Viljoen was appointed as the first professor and head of the Department Materia Medica in the newly founded Faculty, after he had originally been appointed to the chair of Anatomy. In 1923 he was transferred to the Department of State Veterinary Medicine and was replaced in what then became known as the Department of Veterinary Medicine by C.P. Nesper. Nesper founded a new department called Pathological Physiology in 1928 and was succeeded by P.J.J. Fourie. Fourie died unexpectedly the following year and again Fourie took his place while B.S. Parkin took over Veterinary Medicine. Parkin guided the department with distinction for more than 20 years until his death in 1951. He was best known for his research on the chemotherapy of trypanosomosis in cattle and biliary fever in dogs. His successor as professor and head of the department was W.D. Malherbe, previously lecturer in the same department.

When the Faculty was reorganized and consolidated in 1957/58 a new Department of Internal Medicine was formed with K. (Keiser) van der Walt as professor and head. It also included Toxicology and Pharmacology as well as the Ambulatory Clinic and Materia Medica. In 1965 the name was changed back to Medicine and in 1972 Pharmacology was transferred to Physiology followed by Toxicology in 1979. Van der Walt was one of the first appointments from the private sector and served for 26 years until his death in 1984. He was a pioneer in the use of chemical immobilization of wildlife and was involved in an advisory capacity in the development of several veterinary drugs. He also served on various occasions as Acting Dean. His successor was P. Bland-van den Berg who was in turn succeeded by S.R. van Amstel after being promoted to the new post of Deputy Dean in 1988.

Fundamental changes followed during the next decade. Under the leadership of the latter two the department adopted a species approach, allowing its staff to specialize in one of three directions: small companion animals, horses or production animals. It complemented the existing pig diseases group led by R.K. Loveday and resulted in greater job satisfaction, improved scientific standards in both teaching and research and greater interest
in postgraduate studies. In 1988 a new research strategy was developed with the identification of three research themes i.e. babesiosis in dogs, heartwater in cattle and colic in horses.

The clinical pathology laboratory run by F. Reyers showed dynamic growth and collaboration with other instances, both national and international, increased dramatically. On par with the rest of the Faculty teaching methods also changed to a more problem-based student-oriented approach and improved exposure of students to clinical cases. Seven different species-based clinics, both static and mobile, were developed where students could gain experience on a rotation basis and provide a service to the community at the same time. The move in 1996 to the new hospital with its world-class facilities further enhanced these activities.

The next major restructuring followed the amalgamation of the Onderstepoort and Medunsa faculties in 1999. A new Department of Companion Animal Clinical Studies (CACS) was created with three sections: Equine Medicine, Small Animal Medicine and Clinical Pathology. Van Amstel had left to take up a position in the USA in 1997 and Reyers filled the gap until 1999 when P. Stadler was appointed as professor and head of CACS. Other staff members were J.S. van den Berg and associate professors R. Lobetti and A.L. Leisewitz.

The introduction of clinical assistant posts significantly increased the capacity of the department both in terms of research and postgraduate studies. The department’s postgraduate programme continued to grow with increasing numbers of students registering for especially the MMedVet degree. Many of these students came from other African countries.

The department also contributed to educational innovation in terms of telematic courses. Three of its postgraduate modules are for example available in telematic form. Some progress has also been made in providing specialized elective courses, for example in cage bird and fish diseases. The previous Production Animal section was transferred to a newly established Department of Production Animal Studies (PAS) headed by G.H. Rautenbach.

Pharmacology and Phytomedicine

Historically, pharmacology at the Institute formed part of the activities of the Section of Toxicology, founded in 1928 by Douw G. Steyn. Lectures on pharmacology were therefore mostly given by members of the staff of Toxicology on a part-time basis, as was the custom at the time (see Part 3: Toxicology). The first major change occurred in 1971 when W.L. (Bill) Jenkins was appointed as full-time professor and head of a new Department of Physiology, Pharmacology and Toxicology at the Faculty, with A. (André) Immelman as first lecturer in pharmacology. In 1984 the department was joined by T.W. (Theuns) Naudé, former head of Toxicology and Deputy-Director at the Institute (see also the section on Physiology). The department was reorganized again in 1986 and he became Head of a newly formed Department of Pharmacology and Toxicology. When Naudé retired in 1992 G.E. (Gerry) Swan was appointed as acting head and in 1994 as head of the department. In 1996 Swan was appointed by the Minister of Health as member of the Medicines Control Council where he has since been serving as chairman of the Veterinary Clinical Committee. In 1998 a Veterinary Pharmacology and Toxicology Analytical Service was established to provide quality assurance services to industry.

Following the amalgamation in 1999 with the Medunsa Faculty of Veterinary Science, C. (Colin) Catton joined the existing pharmacology lecturing staff consisting of Swan and P. (Peter) Buss. When the latter resigned towards the end of 1999 R. (Ronette) Gehring was appointed. She showed a keen interest in pharmacokinetics and assisted Swan with bioequivalence contract research. Unfortunately she emigrated soon afterwards to the USA. Research during this period included the pharmacokinetics of anthelmintics and anti-inflammatory drugs and the use of pharmaceutical agents in wildlife management and disease control. In 2000 a Pharmacovigilance Centre was also established to facilitate reporting of adverse drug reactions.

In the pharmacological field the department collaborated closely with the Faculty of Pharmacy of the North-
West University at Potchefstroom. After restructuring of the amalgamated faculty in 2001 Swan became head of the Department of Paraclinical Sciences which included the disciplines pharmacology, toxicology, pathology, veterinary public health and phytomedicine. In 2002 V. (Vinny) Naidoo was appointed to succeed Gehring and to take over the pharmacokinetic research responsibilities. Following the retirement of Catton, J.G. (Jan) Myburgh was appointed in 2003 with the responsibility to focus his attention on the field of environmental health and toxicology.

On the international front close ties were forged with researchers at the Louisiana State University in the USA and the National Veterinary Institute in Oslo, Norway. In the latter case it resulted in a collaborative study to develop biomarkers for the detection of pollution in aquatic ecosystems utilizing, inter alia, catfish cell cultures and crocodiles as sentinel animals. An important international programme was the investigation of vulture mortalities in Southeast Asia in collaboration with the Royal Society for the Protection of Birds in the UK, the Indian Veterinary Research Institute and the Vulture Unit at De Wildt. It was shown by Swan, Naidoo and co-workers that the deaths were caused by the use of an anti-inflammatory drug in cattle, and using local vultures as models, a safe alternative drug could be identified, thus contributing to the conservation of an endangered species.

When Swan was appointed as Dean of the Faculty in 2006 he was succeeded as head of the department by C.J. (Christo) Botha and the vacancy created was filled by the appointment of L. (Leon) Venter to further the much needed wildlife acumen of the Department. In 2002 Swan was instrumental in inviting J.N. (Kobus) Elloff, former Professor in Botany at several South African universities and Director of the National Botanical Institute as well as the National Botanical Gardens, to transfer his research group on phytomedicine from the Pharmacology Department of the Faculty of Medicine at the University of Pretoria to the Veterinary Faculty at Onderstepoort and to add a new approach to his research, i.e. ethnoveterinary medicine. Although initially a one-man show, Elloff brought with him a large group of postgraduate students from various disciplines and institutions, including the historically black universities and institutions in other African countries. He developed standardized techniques for the extraction of a wide variety of plant materials as well as assays for possible biological activity, and was very successful in attracting funding for his work.

A prime example was the successful bidding for a R2.2 million BioPAD grant to develop a plant extract to replace antibiotic feed additives used in poultry production which pose a threat to human health.

Other success stories include the development of a new method to prepare an anti-oxidant extract from grape seed which was patented and licensed to a major pharmaceutical company, the isolation of several anti-fungal compounds with commercial potential and the screening of the leaves of more than 500 southern African trees, some of which had been used by traditional healers. The practical nature of this research and its commercial potential ensured a constant stream of funding and of students, and also the services of Lyndy McGaw who is his second-in command at present. His work also attracted international attention and he was appointed as leader of an EU-funded project to develop quality control standards for African Herbal Medicines exported to Europe, reflecting a renewed global interest in ethnoveterinary medicine. Local interest in his research is reflected by its recognition as a ‘niche area’ for long-term financial support by the National Research Foundation.

**Physiology**

One of the first six appointments to the new Faculty of Veterinary Science in 1920 was that of W.H. Andrews to the chair in physiology. Unfortunately health problems led to his resignation and return to England in 1924. His successor in 1925 was F.W. Steck, former lecturer in pathology, who in turn resigned and returned to Switzerland the following year. J.I. Quin, who was one of the first group of eight graduates to qualify in 1924, was then appointed as lecturer in the department where he obtained his doctorate cum laude in 1928. In 1934 he was promoted to professor and retained this position until the end of 1949 when he succeeded Gilles de Kock as Director of Veterinary Services and Dean of the Faculty until his untimely death a few months later. Quin’s successor in 1950 was R. (Nobbie) Clark, another Onderstepoort graduate. With the reorganization of the faculty in 1958 physiology was discontinued at the Institute and Clark became the first full-time professor in the Department of Physiology which also included biochemistry and chemical pathology as part of the rationalization programme. J.G. Louw, who had followed in the footsteps of H.H. Green and A.I. Malan (see also Part 3: Biochemistry), remained part-time senior lecturer in biochemistry until 1961 and H. Graf associate professor in chemical pathology. From 1956-1960...
Graf was appointed Dean of the Faculty, a part-time position at that stage. When Clark retired in 1969 he was succeeded by J.M.M. (Mike) Brown until 1971 when the latter accepted a position in the Faculty of Medicine of the University of Pretoria. A major restructuring of the department followed, with the appointment of W.L. (Bill) Jenkins, senior lecturer in the Department of Medicine, as professor and head of a new Department of Physiology, Pharmacology and Toxicology, which was also responsible for a course in physiological chemistry. The addition of an Equine Physiology Research Unit under the guidance of A. Littlejohn also featured in 1971.

In 1973, with the transfer of the Faculty to the University, only minor organizational changes were introduced but more emphasis was put on research activities. Other members of staff were T.F. Adelaar, associate professor in toxicology; N.C. Owen, senior lecturer in physiology and R.W. Worthington, senior lecturer in biochemistry. Research in the department included placental transfer of drugs in pigs (Jenkins), physiology of exercise in the horse (Littlejohn), characterization of Clostridium welchii toxins (Worthington) and renal function in sheep (Owen). Adelaar retired in 1974, Owen moved to Medunsa where he eventually became Dean and Worthington emigrated to New Zealand. In 1978 Jenkins resigned to accept a position at the Texas A & M University in the USA and was succeeded by J.F.W. Grosskopf who had been senior lecturer in animal physiology at the Faculty of Agriculture since 1965.

Grosskopf was head of the department until his retirement in 1989 and during this period introduced some far-reaching changes in the curriculum, including a third semester course and a new basic course in physiology for the Diploma in Veterinary Nursing. In 1986 Pharmacology and Toxicology became an independent department again. Grosskopf actively promoted research collaboration with other groups in both the medical and agricultural fields in South Africa and abroad. This new approach was carried forward by his successor, J.G. van der Walt who had been appointed as associate professor 2 years previously. His interest in the nitrogen metabolism of ruminants and especially the role of the colon led to a variety of projects of both a basic and applied nature, such as the influence of drought and restriction of water intake on kidney function and nitrogen retention.

The last decade of the 20th century was dominated by the amalgamation with the Medunsa Faculty. Physiology was better prepared for the event than other departments because it had been assisting its sister department in presenting its undergraduate physiology course following the untimely death of its departmental head in 1995. This resulted in good relations and collaboration between the two departments. The official process of amalgamation began in 1996, leading to the formal fusion of the departments in 1999. Onderste-
year or last two years of veterinary curricula. J.B. Quinlan was therefore only appointed in 1922 as lecturer, and in 1924 as professor, with the added responsibility of lecturing in gynaecology and obstetrics. Quinlan obtained his veterinary qualification in Dublin and was known for, and feared for, his Irish temperament by two generations of students. He was, however, respected as an excellent equine surgeon and developed an interest in reproductive problems in cattle. He published widely on both subjects. When he retired as Assistant-Director of the Institute in 1947 he was succeeded by S.W.J. van Rensburg (senior) who had been lecturer in gynaecology and obstetrics since 1944 and laid the foundations for a future Reproduction Department. When he resigned in 1953, N.C. Starke took over but also resigned three years later in 1956 for a position in the private sector.

In view of the pending reorganization of the Faculty, M. de Lange, who had been lecturer in the department since 1953, acted as departmental head until the end of 1957 when the first appointments were made from outside the Institute staff.

A new era dawned with the appointment of C.F.B. Hofmeyr, an established private practitioner, in 1958. He played an active and important role in promoting his discipline, faculty and profession, first as head of Surgery, then as part-time Dean (1971-1976) and as the first full-time Dean from 1976 until his retirement in 1981. His leadership was crucial in the period before and after the Faculty gained independence from the Institute in 1973. He was also intimately involved in the separation of gynaecology and obstetrics from surgery as an independent department, called Genesiology, which was led by J.S. van Heerden, one of the pioneers of artificial insemination in South Africa from 1961-1981. When Hofmeyr became full-time Dean in 1976 he was succeeded by D.G. Steyn as head of Surgery. In addition to his surgical skills Steyn was an expert in the evolving science of experimental animal medicine. During his term a first associate professor was appointed in 1977 in the person of C.J. Roos, to head a new division for radiology. Steyn was in turn succeeded by S.S. van den Berg in 1986.

Van den Berg was a dynamic leader who contributed significantly to the expansion of activities in his department to meet the needs of the increasing number of students. Under his guidance several new divisions were created and senior staff appointed as managers. In addition to Radiology these included Small Animal Surgery (F. Verstraete); Equine Surgery (R. Gottschalk); Anaesthesiology (F. Stegmann); Ophthalmology (S.W. Petrick) and Veterinary Nursing (I. Wolleschak). In 1995 Roos retired and was succeeded as head of Radiology by R. Kirberger. An important milestone was reached when the new Onderstepoort Veterinary Academic Hospital was completed in 1992, providing adequate accommodation for all these activities. Unfortunately a major staff turnover characterized the 1990s and van den Berg’s retirement at the end of 1999 coincided with the finalization of the amalgamation of the Onderstepoort and Medunsa Faculties. Pending the ensuing major restructurings, P.H. Turner was employed as acting head of the department.

In Genesiology R.I. Coubrough was the successor of van Heerden in 1981 until 1987 when he, in turn, succeeded J.M.W. le Roux as Dean. In 1986 the department was subdivided into two divisions, reflecting the two directions in which its activities had been developing. These were theriogenology under D.H. Volkmann and herd health with D.C. Lourens in charge. In 1987 H.J. Bertschinger took over as head of the department from Coubrough. Under his leadership programmes addressing reproductive problems of endangered wildlife species were introduced for the first time. By 1996 the activities of the herd health division had expanded to include nutritional and management aspects to the extent that it was decided to split off this section and amalgamate it with the Department of Public Health to form a new Department of Animal and Community Health. At the same time Volkmann took over from Bertschinger as departmental head. In 1999 the name Theriogenology was changed to Reproduction, completing the circle started in 1944. In 2000 Volkmann was succeeded by J.O. Nöthling.

Some highlights of the department’s research activities during the last decade of the 20th century included the development of an immuno-contraception technique to assist...
population control in elephants, the production of the first group of calves by in vitro fertilization and the first successful insemination of dogs with frozen-thawed semen.

Veterinary Tropical Diseases

The Department of Veterinary Tropical Diseases (DVT D) was established in 1993 with the amalgamation of the Departments of Infectious Diseases and Parasitology. The Department of Infectious Diseases was formed in 1958 when the Faculty reorganized, and included the disciplines of virology, bacteriology and protozoology. At that stage R.A. Alexander was head of the department and professor in virology with B.C. Jansen responsible for bacteriology. Jansen succeeded Alexander as head of the department when the latter retired in 1963. When the Faculty became independent from the Institute in 1973, P.G. Howell was appointed to the chair in infectious diseases and as head of the department. The development of these disciplines prior to 1973 is discussed in Part 3.

R.M. du Toit was professor and head of the Department of Parasitology from 1958 to 1973. He was succeeded by R.K. Reinecke, who retired in 1986. I.G. Horak was associate professor in entomology and after a short spell as Director of the Tick Research Unit of the Rhodes University was promoted to full professor in 1987. In 1982 C.G. Stewart was appointed as associate professor. In 1987 B.L. Penzhorn succeeded Reinecke as professor and head of the department.

The decision in 1992 to merge the departments of Infectious Diseases and Parasitology as the Department of Veterinary Tropical Diseases (DVT D) was taken to promote a multidisciplinary and integrated, problem-solving approach, particularly pertaining to teaching and research. The first head of the department was R. (Bob) Connor who was succeeded by J.A.W. (Koos) Coetzer in 1993. Under the dynamic leadership of the latter the department has grown significantly since its inception and has established itself as a leader in many areas, particularly those related to teaching and research in tropical animal health. It has been strategically successful in establishing alliances and collaboration with national and international institutions, which have resulted in substantial outside funding.

The DVT D has also experienced significant growth in the number of staff members, postgraduate students and research outputs by the amalgamation of the two veterinary faculties in 1999. Since 2002 it is one of five departments in the new Faculty of Veterinary Science, University of Pretoria and operates mainly in three areas: teaching and training, research, and community service, which includes diagnostic services. For strategic reasons the department is at present (2008) composed of six sections each driven by a section head:

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<tr>
<th>Bacteriology: Ectoparasitology and Protozoology: Helminthology: Immunology: Virology: Molecular Biology:</th>
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<tr>
<td>J. Godfroyd</td>
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<td>B.J. Penzhorn                                                               J. Boomker</td>
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<td>J.E. Crafford                                                              M. van Vuuren</td>
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<td>E.H. Venter and N.E. Collins</td>
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In order to raise the standard of its teaching and research the department has appointed a number of extraordinary professors and lecturers, including staff members of the OVI. Staff members present courses in the various disciplines for both undergraduate veterinary students and veterinary nursing students. The DVT D also offers a research-based MSc (Veterinary Science) as well as a primarily web-based MSc (Veterinary Tropical Diseases). Candidates can enroll for a PhD degree in all disciplines. Courses are also presented that can be taken as ancillary subjects for students that are registered for the BVSc(hons) and MMedVet programmes in other departments of the Faculty.

The web-based modular MSc (Veterinary Tropical Diseases) programme is a unique product developed in collaboration with the Institute of Tropical Medicine in Antwerp, Belgium, and Utrecht University in the Netherlands. It is of great value for candidates from developing countries where particularly transboundary diseases are often the biggest constraint to socioeconomic development. The degree programme and individual modules are also very useful to candidates from the developed world from which many of these diseases have been eradicated, often at great cost, but that nevertheless still pose a distinct threat because of increased international trade in animals and their products. Research projects in the department are grouped in programmes under four main themes:

1. Vector-borne Protozoal and Rickettsial Diseases
2. Viral Diseases
3. Bacterial Diseases
4. Helminth Infections
THREE NOTEWORTHY RESEARCH ACHIEVEMENTS

Although there have been several achievements in research, the following three warrant special mention: The first bacterial genome to be sequenced in Africa, that of *Ehrlichia ruminantium*, was published in January 2005 in the *Proceedings of the National Academy of Science* (USA), which has an impact factor of 10.272. This was collaborative work between the DVTD, OVI and other international institutions. The BioPAD project, ‘Development of a Molecular Diagnostic Test Kit for Tick-borne Pathogens’, which is coordinated by the department, was listed as a Flagship Project in BioPAD’s annual report for 2004. In 2006 the DVTD, in collaboration with the OVI, was awarded a Research Niche Area entitled ‘Molecular Epidemiology of Infectious and Parasitic Diseases of Domestic and Wild Animals’ by the NRF.

In addition, there are a number of non-thematic, ad hoc projects, which are usually undertaken to address the specific needs of postgraduate students.

The department has recently expanded its molecular biology capacity, and is already reaping the benefits. Examples are the description of new species of blood parasites, based on molecular characterization, and the development of new molecular diagnostic techniques, particularly for *Theileria* and other blood parasites in domestic and wild animals, especially African buffaloes.

The DVTD supports the community service programme of the Faculty through running a number of Continued Professional Development (CPD) courses for veterinarians and animal health officers, as well as community outreach research projects and diagnostic services to a wide range of clients. It is not the mandate of the department to render an extensive diagnostic service to outside clients. It provides diagnostic services, linked to the training of students, to the Onderstepoort Veterinary Academic Hospital and other departments in the Faculty. Specialized diagnostic or other laboratory services e.g. testing of efficacy of disinfectants and vaccines are rendered and reagents or antigens are produced for outside clients on request, provided these are financially beneficial for the department.

The DVTD and/or the Faculty has formed various strategic alliances, e.g. with the Faculty of Veterinary Medicine, Utrecht University, The Netherlands, Department of Animal Health, Institute of Tropical Medicine, Antwerp, Belgium and the School of Veterinary Medicine, University of California-Davis, USA, which have resulted in an array of collaborative projects that have attracted substantial research funding. Memoranda of Understanding were signed in 2004 with the African Union Tick and Tick-borne Disease Centre, Lilongwe, Malawi, and, in 2005, with the National Institute for Communicable Diseases, National Health Laboratory Services, South Africa.

The year 1998 was historic in that for the first time representatives from each of the Veterinary Faculties (Mozambique, South Africa, Tanzania, Zimbabwe, and Zambia) in the Southern African Development Community (SADC) region met to plan an MSc degree based on the priorities of the region in terms of animal health and production. Substantial financial support was received from NORAD (Norway) thus making it possible for the representatives of the various institutions to meet on several occasions.

Zootechnology/Ethology

Zootechnology, or ethology as it was later called, had a rather chequered history in the veterinary faculty, different aspects being accommodated in various departments over the years. From 1920 to 1925 it was taught by Prof A.M. Bosman of the agricultural faculty. In 1926 J.H.R. Bisschop, one of the first group of eight students to qualify at Onderstepoort, was appointed as lecturer and head of a new Department of Zootechnology, a position he retained until his retirement in
1962, since 1936 as professor. His research mainly involved work at Arnoedsvlakte in collaboration with A. Theiler and others on the feeding of phosphate supplements, such as bone meal, to combat lambsiekte. In his later years he was a pioneer in bionomic studies and the influence of climate, nutrition and natural resistance on animal diseases and production. He was mainly responsible for the interest of breeders in the use of indigenous breeds of cattle.

A separate course on animal management initially formed part of the course in hygiene in the Department of Infectious Diseases under P.J. du Toit (1920-1923). Hygiene became a separate department in 1923 with H.H. Curson as lecturer and included various subjects such as general hygiene, municipal hygiene, animal management and state veterinary medicine. After separation of the latter in 1926 P.S. Snyman took over and after a number of permutations a Department of Hygiene and Animal Management was formed in 1934 which persisted until 1957. With the rationalization in 1958 this department as well as Nutrition, which was formerly part of Biochemistry, and Veld Management (formerly Veterinary Botany) were incorporated into the Department of Zootechnology. J.W. Groenewald was head of Nutrition from 1935 to 1955 when he resigned and was succeeded by J.H. Kellerman. Veterinary Botany was taught by A.O.D. Mogg from 1922 until his retirement in 1946.

In 1963 Bisschop was succeeded by D.R. Osterhoff as professor and head of Zootechnology. Osterhoff came to South Africa from Germany in 1956 after obtaining his doctorate in agriculture which was based on research carried out in Sweden on the genetics of blood typing. He was recruited by the S.A. Department of Agriculture to start a blood group laboratory and was accommodated at the OVI. After preparing and standardizing the required reagents his laboratory provided a service to farmers and breeders including identity tests, parentage determination and sterility diagnosis in twins. On his transfer to the Faculty these services were continued until a laboratory for routine blood group determination was established at Irene in 1968. Immunogenetics remained his main research interest, however, and found practical applications in his new environment.

Major advances included the discovery of new haemoglobin and transferrin types in Afrikaner cattle, the demonstration that cows each produce a unique milk type by which they can be identified, the genetic identity of the German Gelbvieh and British South Devon cattle breeds, and the standardization of blood transfusion procedures for animals. In order to provide his students with a broad background he was also instrumental in the establishment of a cytogenetics laboratory for the study of chromosomes in 1982, a new chair in Companion Animal laboratory and Nutrition (sponsored by Epol) in 1986, and a Nutrition Laboratory in 1989. In the same year a major contract was signed with the Jockey Club of South Africa for the annual paternity testing of 2000 racehorses. He always maintained close relationships with farmers’ organizations, breed associations and individual farmers, and took great pains to facilitate the involvement of his students in practical activities such as show judging of the various species of domestic animals.

Osterhoff retired in 1990 and was succeeded in 1991 by J.S.J. Odendaal as head of a renamed Department of Veterinary Ethology. This reflected a major shift in emphasis of both the research interest and the courses presented by the department. These included a new MMedVet degree course focusing on animal behaviour and animal needs in a specific environment. Animal-human interaction, animal welfare and animal care to ensure optimal production were features of the new approach. The Nutrition Laboratory and the Genetics Laboratory were retained and expanded to provide services to the profession and to generate income. Odendaal was a pioneer in the study of animal-human interactions and became an internationally recognized expert in this field, involved in a variety of national and international activities. Under his guidance and with international sponsorship a Friskies Companion Animal Behaviour Centre was established, managed by Nicoleen C. Swanepoel who was responsible for behaviour consultation and related services.

The Nutrition Laboratory offered a feed analysis, certification and advisory service for the private sector and the veterinary profession and was managed consecutively by W.A. Schultheiss, D.B.R. Wandrag and, after the amalgamation with Meduns, P.A. Boyazoglu. The Genetics Laboratory kept up with international developments and added DNA analysis to their blood group typing activities under the guidance of Enette van Dyk. Expensive DNA sequencing equipment was obtained with the support of the Jockey Club and a THRIP grant which enabled them to help resolve parentage and criminal cases, and to join an international equine genome mapping project.

In 1999 another re-organization took place following the amalgamation with Meduns. A new Department of Veterinary
Production and Ethology was formed with G.F. Bath as professor and head of the department. In addition to Boyazoglu new staff members included E.F. Donkin, a dairy specialist, and H.C. Els who was experienced in beef cattle production, genetics and farm economics. Once again the courses were extensively revised and improved to meet the requirements of the new faculty curriculum. Research interests followed suit and included a collaborative study with the OVI and Intervet on the control of haemonchosis in sheep. It resulted in a procedure called FAMACHA®, which received international recognition as a breakthrough in internal parasite control. The final restructuring which followed in 2001 resulted in the formation of a Department of Production Animal Studies headed by G.H. Rautenbach (see Medicine).

Equine Research Centre

The Equine Research Centre was established in 1990 at the initiative of the Faculty, the then Transvaal Provincial Administration (TPA) and the horseracing industry. Alan Guthrie was appointed as professor and first Director. Initially the Centre was administered by a management committee representing the TPA, the University and the Highveld Racing Authority (HRA). Since the formation of Racing South Africa (Pty) Ltd (an umbrella body representing racehorse owners, breeders and operators) the management committee consists of Racing South Africa and University representatives. The primary focus of the Centre is to improve the health and welfare of Thoroughbred horses through focused research and the provision of services required by the industry.

The facilities of the Centre, which are provided by the University, consist of offices and three laboratories, including a Sport Medicine Laboratory as well as support facilities and stables. The Sport Medicine Laboratory consists of a high speed treadmill with diverse equipment for evaluating the cardiac, lung, metabolic and locomotor functions of horses under investigation. The Centre’s priority research focus areas are 1) equine infectious diseases, 2) equine sports medicine, and 3) equine management and welfare. Research activities on equine infectious diseases are conducted in collaboration with researchers from the Department of Veterinary Tropical Diseases using jointly supported laboratory facilities and personnel. Collaborative research activities are currently underway with researchers from the University of California, Davis, and Merial, SAS.

Recently, the majority of the Centre’s research efforts on}

Equine sports medicine has focused on Exercise Induced Pulmonary Haemorrhage. This collaborative work has been done in conjunction with researchers from the Ohio State University, Colorado State University and the University of Melbourne. A large portion of the funding for this work has been provided by the Grayson Jockey Club Research Foundation (Inc) and the Racing Medication and Testing Consortium from the USA.

The amalgamation of the Onderstepoort and Medunsa faculties in 1999 and the concomitant reorganization introduced a new focus in the Centre’s activities and new personnel. The Blood Group Laboratory of the Department of Veterinary Ethology was incorporated into the Centre and in association with the National Horseracing Authority of Southern Africa (formerly the Jockey Club of Southern Africa) equipment for DNA typing was purchased and the Veterinary Genetics Laboratory was formed. Whilst blood typing and DNA typing were initially run in parallel, DNA typing replaced blood typing in 2002. The laboratory provides genotyping services for a number of breed registries including the South African Thoroughbred Studbook (administered by the National Horseracing Authority), the Arab Horse Society of South Africa, the Warmblood Horse Society of South Africa, the Thoroughbred Studbook of Kenya and the German Shepherd Dog Federation of South Africa. The laboratory provides research support for DNA sequencing projects within the Faculty and collaborates with numerous researchers within the Faculty and University on genotyping projects. The Laboratory served as the Duty Laboratory for the International Society of Animal Genetic’s Horse Genotyping World Comparison Test in 2003/2004 and Dog and Cat Genotyping World Comparison Tests in 2005/2006. The Laboratory is currently serving as the Data Management Laboratory for the 2007/2008 Dog Genotyping World Comparison Test.

Centre for Veterinary Wildlife Studies

Following strong motivation by the Wildlife Group of the S.A. Veterinary Association, supported by the S.A. Nature Foundation (later World Wildlife Fund SA), a Chair in Wildlife Diseases was established in the Department of Parasitology in 1988 with D.G.H. Meltzer as the first incumbent. It was originally known as the Price Forbes – Federale Volkskas Chair in acknowledgement of the main sponsors, but was renamed during the mid-1990s as the Alexander Forbes Chair in Wildlife Diseases in keeping with the changed international branding
of the sponsor that funded the Chair for 10 years. Since 1989 a specialist MMedVet (Fer) postgraduate degree course in wildlife was instituted, which attracted eight national and international students over a 16-year period.

Research on various aspects of wildlife diseases was initiated and an advisory service provided for veterinarians, game farmers, and nature conservation bodies. When J.D. Skinner, emeritus professor and former Director of the Mammal Research Institute, joined the Faculty as an extraordinary professor, the discipline of mammalogy was offered on the level of MSc and PhD, which was open to veterinarians and basic scientists. An elective course dealing with wildlife, ostriches, and crocodiles was added to the undergraduate veterinary curriculum.

A short course in the chemical immobilization of wildlife in the Kruger National Park, presented as a continuing education programme, proved to be very popular and was attended by veterinarians and veterinary students from all over the world. This course is ongoing and is currently presented in association with SANParks and Wildlifevets.com.

In 1993 when the Department of Parasitology was amalgamated with the Department of Infectious Diseases to form the Department of Veterinary Tropical Diseases, the Wildlife Chair was also transferred to that department. Soon thereafter, the focus on wildlife in the Faculty was strengthened and a Veterinary Wildlife Unit was established in 1995. Meltzer was the head of this Unit until his retirement in 2001 at which time the financial support by Alexander Forbes for the Chair also expired.

Following Meltzer’s retirement first B.L. (Banie) Penzhorn, and then H.J. (Henk) Bertschinger acted as head of the unit until 2005. During the process of amalgamation with the Medunsa Faculty, an academic post dedicated to wildlife was identified on the post establishment of the Faculty. In 2005 J. Godfroid was appointed in this position with N.P.J. Kriel as head of the unit and holder of the Chair of Wildlife Diseases that was again funded by Alexander Forbes for another 5 years. During the course of 2006, the unit was upgraded to the Centre for Veterinary Wildlife Studies within the Department of Production Animal Studies.

The Centre coordinates the wildlife activities related to services, community involvement, and training in the Faculty on a matrix basis.

The research activities in wildlife (that has been identified as one of the research niche areas in the Faculty) now cover a wide field including ethical issues...
UP Veterinary Science Library

The history of the UP Veterinary Science Library of the University of Pretoria can be divided into two periods: the first dates from its inception in 1974 to 1986; the second from 1987 when the library moved into the Sir Arnold Theiler building and embarked on steady growth as a virtual library.

The Faculty Library developed as a branch library of the University of Pretoria’s Department of Library Services (formerly known as the Academic Information Service). It dates back to 1974 when it opened its doors in the building which now houses the Department of Production Animal Studies, formerly the Ethology Section. The facility allocated to the library was formerly the students’ tearoom, as recalled by the current Dean, G.E. Swan.

From 1920 when the Faculty of Veterinary Science was established until 1973 students and staff used the library of the Onderstepoort Veterinary Institute (OVI). A room in the Onderstepoort Students Hostel was also allocated for use as a library and some books and journals in veterinary medicine were purchased by the Merensky Library for their use. As explained in a 1974 report in the Journal of the South African Veterinary Association, the OVI then had a declining budget and did not buy books in some of the clinically important disciplines such as medicine and surgery.

The prestigious scientific journal, Nature, was one of the journals provided to the hostel library to ensure that students were exposed to the latest important research findings worldwide. It is interesting to note, however, that Fair Lady and Huisgenoot were also included, as the librarians at the main library of the university felt that the students were isolated from the city and should, therefore, also have access to more relaxing types of literature! Huisgenoot is indeed still available.

The 1974 library accommodation was expanded towards the end of 1981 when an upper level was added to house the journal collection and provide some seating for users. This upper level was officially opened by the Rector, Prof. D.M. Joubert. The book collection and reference section were shelved on the lower level. There were no computers. Books were issued using a card system, and literature searches were done manually by using the Index Veterinarius and the Veterinary Bulletin.

When computer searches for literature references became available in the mid-1980s the librarian had to travel to the Medical Library at the then H.F. Verwoerd Hospital, to do searches on the Dialog databases. Staff comprised the librarian, a library assistant and a messenger. The latter (Johannes Moropotli) is the longest serving member of the library personnel and is now the library assistant handling document delivery.

By 1986 the library had become very crowded as journal and book holdings increased and the need to provide computer facilities had grown. It was therefore a relief to be able to move into the new Sir Arnold Theiler Building in April 1987. Although it was emphasized that there was only room for 10 years’ growth, that seemed very far away! The move had to take place as cost-effectively as possible. With the part time assistance of two students...

“...It is interesting to note, however, that Fair Lady and Huisgenoot were also included, as the librarians at the main library of the university felt that the students were isolated from the city and should, therefore, also have access to more relaxing types of literature! Huisgenoot is indeed still available.”


Books on the move to the new library
and the Faculty’s trucks, normally used to transport feed for
the production animals, the collection was moved. Boxes of
books and journals, neatly numbered, were transported from
the old library to the new. It took three months to arrange
them correctly on the shelves, but only three days closure
to clients were allowed whereafter the library had to open,
binding books from a makeshift counter, while the huge and
cumbersome lending desk was being assembled. This was only
replaced with a more streamlined and functional desk in July
2007.

Until 2006 the budget for information sources, both
paper and electronic, had been adequate, enabling this library
to purchase all the relevant books and journals necessary
to support the Faculty in its teaching and learning and
research objectives. Unfortunately with annual increases in
journal prices, especially electronic publications, and some
depreciation of the South African currency, the future for acquisitions is less satisfactory.
The library is unique in serving the only veterinary faculty in South Africa. It cannot
rely on other libraries to share some of this load, as in the case of the health sciences
libraries. It receives some support from the South African Veterinary Association in
the form of journals that the Association receives in exchange for its own journal, but
there are only about five titles that are of significance, so the impact on the budget is minimal.

A good relationship has always existed
with the library of the OVI but the subject
coverage of the two libraries differs as the
former concentrates on research concerning
diseases of production animals, diagnostics
and the development of vaccines, whereas
the faculty’s library has to cover all subject
areas presented in the veterinary curriculum, such as medicine,
surgery, pharmacology, human-animal interaction, and animal
nutrition, production, breeding and welfare. The amalgamation
of the country’s two veterinary faculties in 1999 led to an
increase in the library’s collection as books and journals that
the Meduns library no longer needed could be incorporated
into the Faculty’s collection which also included a well-used
multimedia section. Videos are now being supplanted by CDs
and DVDs and are very popular with students as visual material
has a greater impact than written texts.

As this is a fairly new library, there are not many old books.
However, an acquisition arranged by H.P.A. de Boom, former
head of the Department of Anatomy, must be mentioned. This
book is the Anatomia del cavallo infermita (Atlas of the horse)
by Carlo Ruini. It was first published in Italy in 1598. The
library purchased the 3rd edition (1602) when it was put on
sale in the USA. This anatomical atlas is historically significant
because it was the first such atlas to be devoted to a non-
human species. As M.M.S. Smuts mentioned in her inaugural
address as head of the Department of Anatomy in 1982, this
work was as significant for veterinary anatomy as Vesalius’
Fabrica was for human anatomy. Apparently only three copies
of this early publication are available in libraries worldwide.

From paper to electronic

In 1999 a Virtual Veterinary Library, which is a one-stop
information centre – also called ‘The Library in your Office’
– was introduced in support of the policy of the UP Library
Services to create a virtual library environment. The decade
starting in 2000 saw the implementation of various e-products
and e-services by the Library Services.

InfoPortal was specially designed for lecturers and
researchers – a personal starting point for all information
management related activities. It is a one-stop electronic
service, linking the lecturer to databases, e-
journals, e-theses, websites and the library’s
online catalogues. The Virtual Groups facility
enables a client to form online Communities
of Practice (people working in the same
research field, or sharing the same interests).

Electronic books (e-books) became part of
the library collection in 2002. An e-book is a
written work that is readable on a computer
screen, downloaded to a PC or digital
assistant like SoftBook or Rocket eBook
readers. E-books will not replace paper
books. They just help librarians provide
improved service to their users.

While most of the books now available
in electronic format are older, more and
more are being published online soon after
publication in print. Links are provided in
the library catalogue, UPexplore, to the full-text
book on the world-wide web. Tyds@Tuks,
the electronic journal gateway of the University of Pretoria,
was developed in 1998 to promote easy access to e-journals.
Through the library web page users can access almost 35 000
e-journals. A fraction of these are on veterinary topics, but the
rate at which publishers are making their journals available in
e-format is increasing rapidly.

The electronic library newsletter, Infomania, hit Faculty
computer screens in April 1998, serving as an effective
communication channel for the library and its clients. It features
news about new products and services from the library world,
specifically geared to the needs of the Faculty. A feature
that has been included in recent issues is the ‘Conversations with
Sir Arnold’ column in which the development of information
products and the growth of the collections are highlighted.
For example, the growth in the number of veterinary or
animal health journals over the years since 1920 was featured
in one issue. This was followed by one listing all the doctoral
theses (97) that have been presented at the Faculty since
1920.
Webportals and electronic repositories

The information specialists of the Library developed several webportals for relevant topics during the past decade. These serve as gateways to approved websites on specific topics. They also contain information provided by researchers and lecturers at the Faculty, or by the information specialist. Examples are the goat web developed by Amelia Breytenbach when she was information specialist for the Department of Production Animal Studies; the ostrich web, developed by Erica van der Westhuizen based on the bibliography she compiled in 1993 and updated in 1997 and 2000; a comprehensive website on dental formulas by Tertia Coetsee and Antoinette Lourens, which was a world first, covering dental formulas of all species, and a poultry web developed by Antoinette Lourens. The latter followed an increasing number of requests received for information on poultry farming. Poultry production is recognized as one of the tools for poverty reduction, contributing positively to the nutritional status of low-income farming communities in South Africa.

A poisonous plants web portal was created in 2006 following the model of the one at the Veterinary Medicine Library of the University of Illinois. Both libraries are collaborating on this topic so that the plants of the two different continents (North America and southern Africa) will be shown in their variations and uniqueness.

Disasters and emergencies is a web portal of importance in the 9/11 aftermath. Not only man-made disasters are covered, but also natural disasters such as floods and fires. Emerging diseases also feature. This web product resulted from a satellite session on this theme of the 73rd International Conference of Library Associations held in Durban in 2007. All these web portals feature the following sections, with links to useful information sites: Associations, Books, Conferences, Diseases and Health Issues, Full Text Articles, List of Experts, Newsletters, Journals and Research Centres.

The Library was also actively involved in various initiatives to promote the establishment of electronic repositories of scientific information by the Library Services of the University of Pretoria. As a first step slides used by lecturers were digitized and to improve retrieval a template was developed by means of which the applicable metadata are linked to the images and stored on a server. UPSpace is the University’s electronic institutional repository for collecting and preserving its intellectual output. It consists of a number of collections including OpenUP which is a collection of research articles produced by staff members in support of the international open access movement. The UP Veterinary Science Library contributed a Theiler Collection, consisting of rare historical documents and photographs of Sir Arnold Theiler, the founder of the Veterinary Faculty. Other contributions are the Arnold Theiler Memorial Lectures and the Christine Seeers Biomedical Illustrations. A South African National Veterinary Repository is also planned as a joint endeavour with the OVI.

Other Activities

In July 1995 the 1st Conference of African Animal Health Information Workers was organized by the UP Veterinary Science Library and held at the Faculty of Veterinary Science
at Onderstepoort. This was the first meeting of veterinary librarians to take place in Africa. It was inspired by the 1st International Conference of Animal Health Information Specialists which was held in Reading, UK in 1992. With funding received from the OIE Regional Collaborating Centre, seven librarians from veterinary libraries in other African countries were able to attend and present papers. In this way information provision of veterinary libraries in sub-Saharan Africa was promoted.

The 5th International Conference of Animal Health Information Specialists (5 ICAHIS) was hosted and organized by the Library from 4-7 July 2005 at the Faculty. It was attended
by 65 participants, most of them representing 30 veterinary libraries or institutions from Africa, Europe, Australia and the United States. Since this was the first time that this conference was taking place on the African continent (the former ones were held in the UK (at Reading and London), Denmark (Copenhagen) and Hungary (Budapest)), participation from other African nations was especially encouraged. Thanks to support from the Technical Centre for Agricultural and Rural Cooperation (CTA), Wageningen, The Netherlands, seven information specialists representing Uganda, Tanzania, Mozambique, Nigeria, Zambia and Zimbabwe were able to attend and deliver papers at the conference.

Twenty-three papers were delivered during the course of the conference: 7 from other African countries, 7 from South Africa, 1 from Australia, 2 from the UK and 6 from the USA. The Poster Session comprised 13 posters (2 from South Africa, 1 from Mozambique, 3 from Scandinavia, 1 from the UK, 2 from the USA and 4 from Italy) on a variety of topics relevant to information and knowledge management.

Feedback received from participants showed that the eight-day programme, consisting of four spent on formal presentations, poster sessions and tours, and four devoted to pre-conference workshops, was very successful. The Veterinary Librarian of the University of Illinois, USA, inter alia said: ‘Bridging the information gaps in animal health, along with establishing enduring contacts between information professionals in service to the profession, were the goals of the conference, and by all levels of expectation, they were met, setting the stage for future ICAHIS endeavors.’

Staff
The past 20 years have not only seen a growth in veterinary information sources but the staff component expanded too. A library planned for four staff members had to eventually accommodate eight people. This included the appointment of two cataloguers, when it was decided to decentralize certain tasks such as book and journal orders, cataloguing and classification. They could provide an on site service, sharing their expertise with existing staff and communicating directly with clients about their information needs. The library was thus enabled to face the challenges of providing more effective services to its clients and develop products for their specific needs, such as enhancing the use of their unique slide collections through metadata, helping lecturers with web-based course material and supporting their research output by means of reference collection management tools.

From 1974 to 1989 there was only one position for a qualified librarian which was filled consecutively by Rita Erasmus (1974-1975); Francina de Villiers (1976); Mathilda du Preez (1978-1981) and Erica van der Westhuizen (1981-2008). In September 1989 a second post was granted. Since that time it has been filled by Krista Verster, followed by Ansie Earle, and in 1997 by Tertia Coetsee. A third post for a qualified librarian was filled by Antoinette Lourens in later years. Library assistants since 1974 were: Johannes Moropoti, Rina Pelser, Shirley Kingsley, Ida Thomson, Lourina de Beer, Hannetjie Boshoff, Sanah Mphaga, and Barbara Kellermann.