experto crede

no1 june 1974

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'n publikasie van die fakulteit veeartsenykunde

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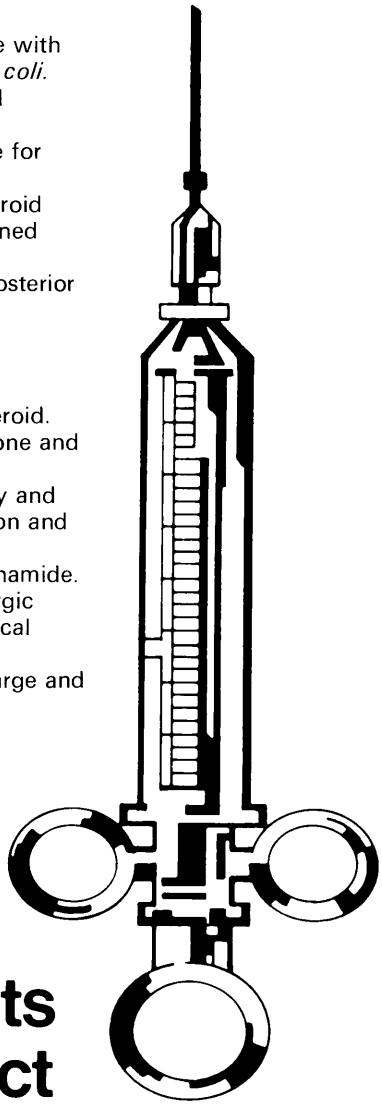

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EXPERTO CREDE

No 1 JUNE 1974

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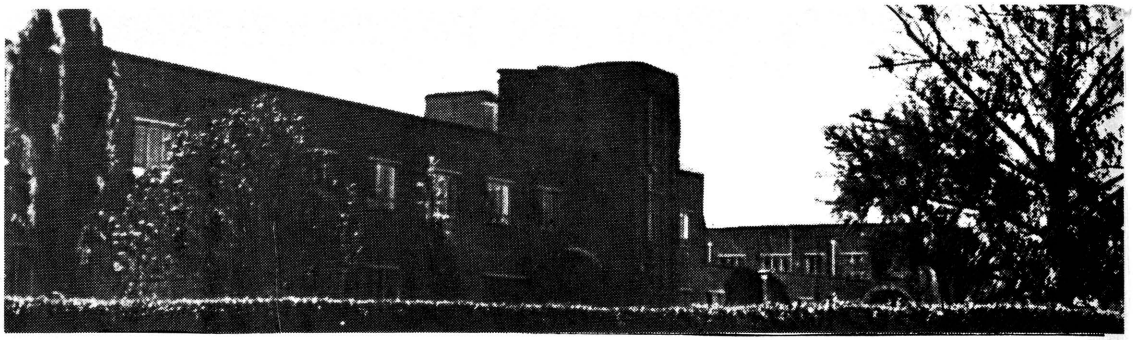


EDITORIAL

A lot of things seem to originate in pubs – this was no exception. Huddled over a beer one evening at the well known local, an extremely disgruntled member of the student body who had just been through a particularly nauseating oral examination and was trying to obtain solace from the therapeutic fluid on the counter in front of him was complaining venomously about his examiner. The only reason he had been subjected to such an unjust ordeal was because of "personal differences" – or so he said. These authoritarians had things all their own way. Where was student power? If only there was a student magazine, he would publish an anonymous letter and thus reveal the devious and underhand methods of his tormenter for all to see.

This dramatic display and call-to-arms infected everyone present, resulting in feverish pledges and promises. (A typical side effect to this type of therapy.) However things progressed from there and "Experto crede" is the result. Incidently, our revolutionary friend obtained an "A" for his exam and so burnt the offending letter late one night.

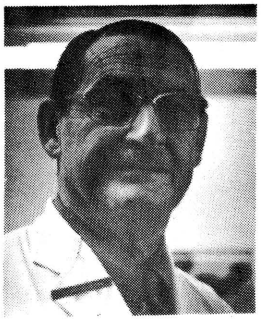
The idea behind "Experto crede" is an attempt to further contact and to integrate thoughts and ideas between the Faculty and the rest of the Profession on a specifically informal journalistic basis, through the publication of contributions from both these two bodies. It is our aim to publish clinical cases, feature articles of academic or general professional interest, articles on veterinary education and the application thereof, controversial or topical developments, news items, advertisements for locums etc. – the scope is vast. This issue only has contributions from staff and students at the Faculty, however it is hoped that the next issue will carry articles from extra Faculty members of the Profession as well. This of course depends on the reaction to this publication and the subsequent cooperation of all concerned.

Naturally our "Letters to the Editor" column is still in the prenatal stage – this will of course be functional from the next issue.

It is thus with the same feeling of trepidation and yet novel optimism that one experiences on entering the theatre for one's first oöphorectomy that we launch this publication, hoping of course that it will become as routine as the "spay" itself.

A final word of acknowledgement to our advertisers who made this venture materialistically viable. Your support is appreciated.

NUUS VAN DIE FAKULTEIT



Prof. C.F.B. Hofmeyr

Dekaan en Hoof van die Departement Chirurgie

Aangesien daar van tyd tot tyd baie veranderinge en ontwikkelinge plaasvind sal alle kollegas en oudstudente veral seker belangstel in gebeure alhier.

DEPARTEMENT CHIRURGIE

Dr. W.S. Botha wat lektor was in Chirurgie het besluit om na departement Patologie oor te gaan en is aangestel as lektor in Patologie.

Sy plek is geneem deur dr. S.W. Petrick wat tot onlangs privaatpraktisyn te Pretoria was.

DEPARTEMENT ANATOMIE

Professor H.P.A. de Boom het bedank om op 60 jarige leeftyd af te tree aan die einde van die jaar en aansoeke vir die vulling van die professoraat en hoofskap van die dept. Anatomie het reeds gesluit.

DEPARTEMENT FISIOLOGIESE WETENSKAPPE

Toksikologie wat voorheen onder dept. Geneeskunde ressorteer het is oorgeplaas na die dept. Fisiologiese Wetenskappe wat nou die volgende behels: Fisiologie, Perdefisiologie, Biochemie, Farmakologie en Toksikologie.

Op die tweedejaarsverwelkomingsdinee wat vanjaar te Huis Onderstepoort gegee is is ook afskeid geneem van die dosente wat finaal verbintenis met die Fakulteit verbreek het.

So het ons afskeid geneem van professor Adelaar wat ook met pensioen vanjaar uit die Staatsdiens uitgetree het. Sy pligte het hom verhinder om die aand teenwoordig te wees en 'n adres te ontvang.

Sy plek is geneem deur dr. A. Immelman, senior lektor wat van departement Geneeskunde oorgegaan het na Toksikologie.

DEPARTEMENT GENEESKUNDE

Die pos wat dr. Immelman ontruim het is nog nie gevul nie. Die suksesvolle applikant was dr. Malinowski voorheen van Pole en onlangs van Cambridge maar hy het besluit om 'n ander pos in Canada te aanvaar. Hy was besonder goed gekwalifiseerd. Hierdie pos word weer adverteer.

Dr. W.D. Malherbe het besluit om nie vanjaar oor te kom na die Fakulteit toe nie en werk nou by die Navorsingsinstituut. Sy pos is gevul deur dr. T.L. Taljaard wat voorheen by die Rumen Fisiologie Eenheid van die WNNR onder dr. F. Gilchrist gewerk het.

Dr. J. van Staden van Ambulante Kliniek is administratief geplaas vanuit die departement Geneeskunde onder die direkte algemene beheer van die Dekaan aangesien Ambulante Kliniek en Buitepasiënte uit die Dekaanskantoor beheer word. Dr. van Staden doen nou Ambulante Kliniek vir die hele dag en die studente wat saam met hom gaan moet dus hulle lesings opmaak deur hulle klaskollegas se hulp.

Buitepasiënte groei steeds en die spreekure is daagliks van 15h00 tot 18h00 met persone wat kom volgens afspraak. Dié spreekure geld vir weeksdae maar Saterdagoggende is daar spreekure van 08h00 tot 10h00.

DEPARTEMENT GESLAGSKUNDE

Dr. R.B. Trengove het pas bedank en sy pos gaan eersdaags adverteer word. Hy neem 'n praktyk in Pretoria oor. Die vakante pos in Geslagskunde is vanaf die begin van die jaar gevul deur dr. L.E. Kritzinger wat voorheen in privaatpraktyk op Empangeni was.

DEPARTEMENT INFEKSIESIEKTES

Volgens Universiteitsbesluit is Protosoölogie en Protosoïese siektes van Infeksiesiektes oorgeplaas na Parasitologie.

Die twee poste in Pluimveesiektes is nog vakant en ons hoop om dit in die voorsienbare toekoms te vul.

DEPARTEMENT PARASITOLOGIE

Dr. Charles Howell senior lektor deeltyds in Entomologie het nie na die Fakulteit oorgekom nie. Sy pos is gevul deur dr. I.G. Horak vanaf die begin van die jaar.

In Protosoölogie en Protosoïese siektes help dr. A.de Vos en dr. S.E. Thomas nog steeds tot aan die einde van hierdie semester met lesings. Dit gebeur deur die goedgunstige tegemoetkoming van die Direkteur Navorsingsinstituut vir Veeartsnykunde.

Vanaf begin Julie sal dr. C.G. Stewart van Rhodesië hier toetree.

DEPARTEMENT PATOLOGIE

Dr. I.B.J. van Rensburg wat voorheen deeltydse senior lektor was het as voltydse senior lektor toegetree.

Benewens dr. W.S. Botha na wie reeds verwys is het dr. J. Schröder wat voorheen in privaatpraktyk in Rustenburg was ook toegetree asook dr. A. Lange wat verlede jaar afstudeer het.

In Voedselhigiëne en Volksgesondheid het dr. Giesecke besluit om by die Instituut te bly en dr. G.V.S. Turner voorheen Staatsveearts het die senior lektoraat aanvaar.

DEPARTEMENT SOÖTEGNOLOGIE

Ons het afskeid geneem van dr. G.D. Sutton wat vir soveel jare sy plek volgestaan het in Diereversorging.

Sy plek is geneem deur dr. H.P. van Niekerk wat voorheen in privaatpraktyk was te Colesberg.

NAAMSVERANDERING

Diereversorging word nou Higiëne en Etologie.

Geneeskunde I word nou Kliniese Diagnostiek.

Chirurgie I word Algemene Chirurgie.

Chirurgie II word Spesiale en Operatiewe Chirurgie.

Geslagskunde I word Geslagsfisiologie en Kunsmatige Inseminasie.

VERANDERING IN DIE INDELING VAN VAKKE

Radiologie word nou 'n derdejaarsvak en studente promoveer outomaties met 'n klasrekord van ten minste 50%. Dieselfde bevorderingsvoorwaardes geld nou vir Anestesiologie in die vierdie jaar en die twee nuwe afsonderlike vakke in die finale jaar nl. Varksiektes en Skaapsiektes.

ACCOMMODATION

Four Departments are still almost completely housed at the Onderstepoort Veterinary Research Institute through the kind offices of the Director of the Institute.

We are looking forward to the extensive additions and alterations which will come, we hope, in the not too distant future. Planning is proceeding apace.

The general appearance of the campus has not changed very much except that five offices have been built under the roof at Out Patients to accommodate the Administrative Staff.

At the present moment we have an Administrative Officer and an Assistant Administrative Officer assisted by a Typist/Clerk.

Two MMedVet degrees have been approved namely MMedVet (Nutr) in Nutrition and MMedVet (Paras) in Parasitology.

TWO YEAR DIPLOMA IN ANIMAL NURSING

Numerous enquiries are being received from intending students. It has been impossible for the University to agree to the introduction of this Diploma at this stage as full details of University financing still had to be awaited. It is hoped that it would be possible to start this course from 1976.

The numerous individuals and bodies who have been contacted concerning the curriculm and who have been invited to criticize have all thought that the curriculum was excellent; the only doubt that was expressed was that it might be rather difficult and hard on the students.

POST-GRADUATE DEGREES

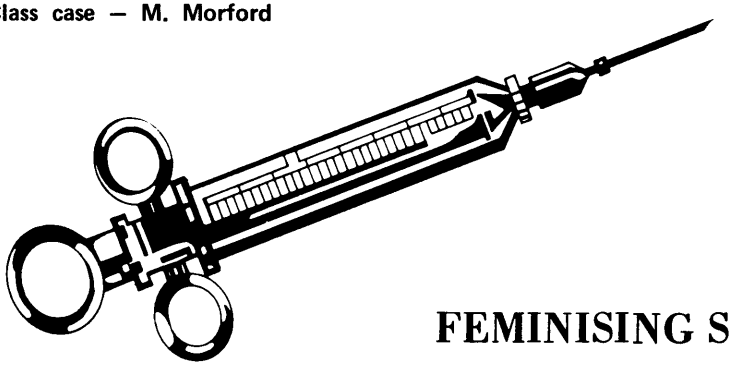
The number of candidates registered for post-graduate degrees exceeds 50. At the recent graduation ceremony Professor C.H. van Niekerk of Stellenbosch received a DVSc degree and Dr. T.L. Taljaard, Senior Lecturer in Chemical Pathology, the degree of MMedVet (Phys).

More than 50 applicants are received annually from students from other parts of the world who wish to study veterinary science at this Faculty.

LIBRARY

The library has been moved from the Hostel and the students tearoom has been converted into a rather pleasant library with a qualified librarian in charge. The only pity is that the students have to make use now of the passage and of the area outside when they have their tea. However, when the new buildings go up their interests will not be forgotten!

Class case — M. Morford



A CASE OF MALE FEMINISING SYNDROME

SUBJECT: A black, seven year old Alsatian male.

ANAMNESIS:

Three months prior to examination the dog was taken to a Pretoria veterinarian with the complaint that the dog was continuously scratching the lumbar region and the ventral abdominal area. These areas had been scratched until reddened but were never moist or excoriated. The dog was treated with a hookworm remedy and a slight improvement in condition was noted.

The skin irritation, however, became progressively worse and the patient was referred to the Department of Medicine at the Faculty of Veterinary Science, U.P.

CLINICAL FINDINGS;

Only the clinical findings that have bearing on the diagnosis have been recorded.

THE SKIN:

The haircoat was in general rather thin, not shiny or lustrous and was harsh to the touch. There were specific areas where there was complete loss of the haircoat, the distribution of these areas is seen in Fig. 1.

The surface of the skin in the lumbar region was thickened, pigmented and rough to the touch. There was an oily scaling but no sign of moistening or reddening.

The dog also showed bilaterally symmetrical reddened areas on the ventro-lateral abdominal areas where there was a complete loss of hair. The hairless erythematous areas were roughly circular in shape and 4 cms. in diameter.

There were also small focal reddened areas in the anal and inguinal region, approximately 0,6 cm. in diameter. These areas were slightly raised. (See Fig. II). The skin surface was dry and sensitive to the touch. The reddening was most probably caused by the continual scratching showed by the patient.

Handling of the skin in the lumbosacral area produced a marked sensitivity of the skin.

Pigmentation of the skin was noticed in the lumbosacral and also focal areas of hyperpigmentation of the inguinal and preputial areas. The preputial orifice was pigmented a dark brown, black colour. The skin of the prepuce itself was thickened and pendulous.

The dog had a marked ceruminous otitis externa.

UROGENITAL SYSTEM:

The dog only had one descended testicle, the left, which was small and soft. The right testicle could not be palpated while the dog was conscious, but, under general anaesthetic it was palpated ventro-laterally on the right abdominal wall at the opening of the inguinal canal.

The dog had a decreased libido – but was still interested in a bitch which was on the last day of pro-oestrus. The dog licked and sniffed the vulvar area, followed the bitch around but at no time attempted to mount her. After a short period he lost interest. Semen was collected on two separate occasions and examined. See LABORATORY EXAMINATION.

MAMMARY GLAND:

No palpable growth of mammary tissue was noticed, but the dog had enlarged teats. They were approximately 1,5 cm. in length. Enlargement was especially noticeable in the inguinal teats and the caudal two pairs of abdominal teats. The teats did not produce any secretions.

LABORATORY EXAMINATION:

Only the results of laboratory tests that are of significance are recorded.

SEMEN EXAMINATION:

Semen was collected using an artificial vagina on two occasions four days apart. Examination revealed that all the spermatozoa were dead although there were no morphological abnormalities present. A small percentage of protoplasmic droplets were present.

Skin scrapings and fungal cultures were all negative.

SKIN BIOPSIES:

Skin biopsies were taken from the lumbo-sacral and ventral abdominal areas. They were fixed in 10% formalin and stained with Haematoxylin and Eosin. Microscopic examination of these sections were inconclusive. There was no evidence of cellular infiltration and hence allergy and infection could be excluded as causes of the lesion.

HISTO-PATHOLOGY OF RETAINED RIGHT TESTIS:

Microscopic examination revealed large accumulations of non-neoplastic Sertoli cells. These may, however, have been in the prodromal stage of neoplasia and could later have become neoplastic. The accumulations of Sertoli cells completely filled the affected tubules and probably produced enough oestrogen to have produced the effect on the skin.

BLOOD CHEMISTRY.

Blood urea nitrogen.

Elevated BUN levels have been incriminated as a cause of pruritis over the lumbo-sacral area. As the dog was rather old and chronic nephritis was a distinct possibility it had to be eliminated. BUN levels were normal (9,25 mg/100 ml).

Liver function tests.

These were also carried out as hyperoestrogenism may be the result of the failure of the liver to detoxify the oestrogens produced. All the liver function tests were, however, well within the range of normality.

DIAGNOSIS.

Male feminising syndrome. (Hypo-androgenism or hyperoestrogenism in the male dog.)

Discussion of the Diagnosis:

Male feminising syndrome closely resembles the syndrome caused by Sertoli cell tumour. In the feminising syndrome there are hyperpigmented macules in the flanks and external genital organs; hyperkeratosis; bilateral focal symmetrical alopecia occurs in the genital area which can later extend to affect the entire skin surface. Gynaecomastia occurs, the teats resembling those of a lactating bitch. There is a lack of normal libido and the skin is dry and the hair is brittle. Ceruminous otitis externa is present. "Seborrhoea-like" scales develop on the skin in chronic cases. There is no cryptorchidism and the gross appearances of the testes is normal, histopathological examination of the testes does not reveal any neoplasie.

The dog examined closely simulated the description given but differed in some respects, the most important being that the dog was a cryptorchid. The right retained testis showed no actual neoplasia, and so Sertoli cell tumour could not be the aetiological diagnosis. However, there were Sertoli cell accumulations that could be responsible for the hyper-oestrogenism.

Another difference was the fact that there was a pruritis present – the dog scratched at himself continually. Pruritis is said to be present in some cases of sex hormone imbalance. The reason given is that sex steroids play a major role in the development and secreation of the sebaceous glands. Atrophy of these glands leads to a dry skin which is then pruritic. Some authorities, however, make no mention of pruritis in the male feminising syndrome.

TREATMENT:

1. Removal of the cryptorchid testis. The left testis was left in position with the idea that it would be a source of testosterone so that artificial medication would not be necessary after an initial dose. The removed testicle appeared macroscopically normal.
2. While the dog was under anaesthetic the ears were thoroughly cleaned out and treated with a cortisone ear ointment.
3. 50 mg **Depo-testosterone cypionate** was injected intramuscularly. It is stated that this drug has an action lasting 3 – 4 weeks. After a period of thirty seven days the dog began scratching again and the dose was repeated. It was presumed that the remaining testicle was producing the oestrogen responsible for the reappearance of symptoms..

   Apart from re-establishing the hormone balance testosterone also has an anabolic effect which would tend to improve the condition of the dog and lead to a healthier skin and hair coat.
4. The biopsy wounds were treated as open wounds and medicament applied topically.

PROGNOSIS AND ADVICE TO THE OWNER:

After removal of the retained testicle and administration of testosterone the prognosis was good. Monthly administration of a depo-testosterone was, however, required. The owner was advised to supply a diet rich in protein in the form of meat. Strict control of fleas and the removal of the rubber mat on which the dog slept were also advocated as they may have played a supplementary role in the aetiology of the condition.

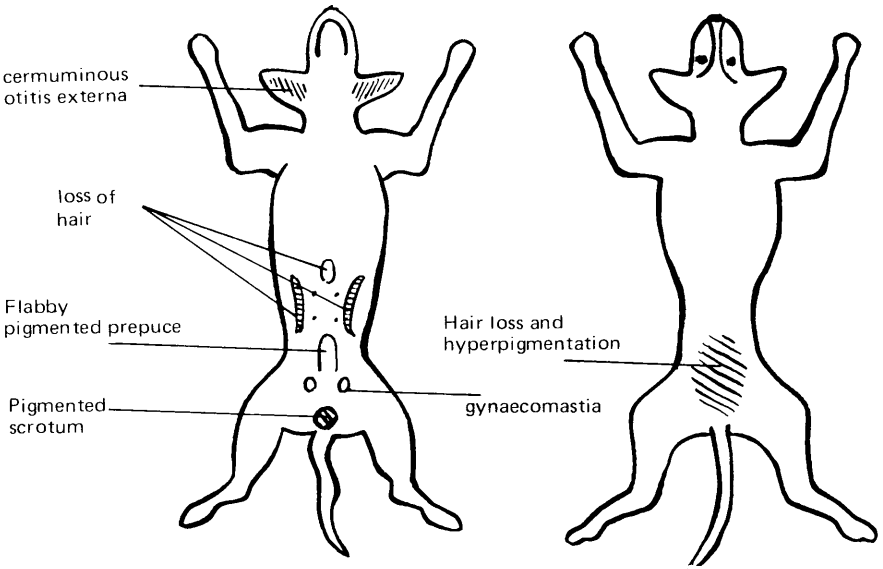


Fig. I

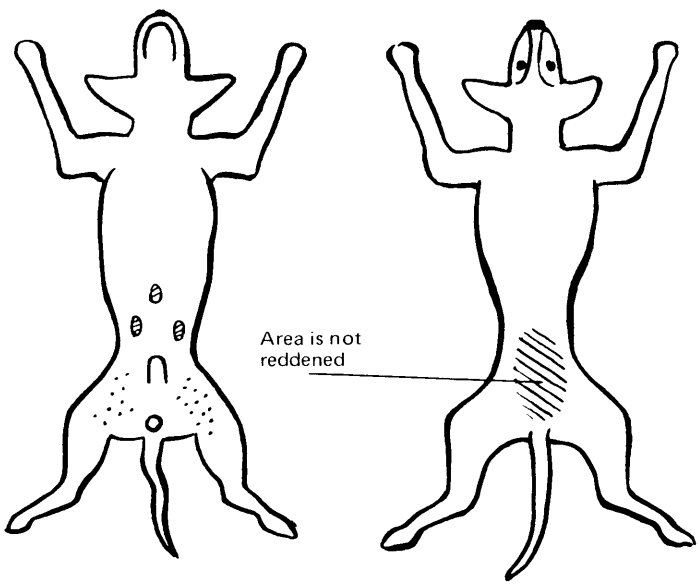


Fig. II Showing areas of erythema and raised small lesions in flanks.

THE INTER-RELATIONSHIP BETWEEN AN ACADEMIC DEPARTMENT AND THE VETERINARY PROFESSION

W.L. JENKINS
Professor and Head: Department of Physiological Sciences,
Faculty of Veterinary Science, University of Pretoria.

There is an old Chinese proverb which states, "If you are planning for the next year, plant flowers; if you are planning for the next century, plant trees; but if you are planning for eternity, educate men. "Belief in this fundamental tenet must be regarded as a "sine qua non" for all the members of any academic institution. The realism of the ambition may perhaps be best illustrated by the fact that in the year 2000, just 26 years hence, our present students will be among the leaders and, what is more, a number of them will also be the guiding teachers of the veterinary profession in Southern Africa.

Let us then briefly examine the synergistic welfare and growth of the academic mater and her offspring, namely, the veterinarians engaged in the many fields of endeavour for which they have been trained and subsequently sent forth.

"Why synergism? ", one may ask. On reflection, however, it will soon be realized that it cannot be otherwise. Synergism, by definition, is the mutually co-operative action of separate forces which together produce an effect greater than that of the sum of the components taken alone. It is particularly on this theme that I would like to offer a few comments.

The logical starting point in this discourse must be the rôle of the Faculty which produces the veterinary graduates. This corporate body is composed of academic departments each of which is responsible for the instruction of students in the variety of disciplines which reside in that department. The courses presented are not simply regurgitations from textbooks or from other standard sources of information but follow carefully prepared curricula which optimize the benefits to be gained from each course by the majority of the students present.

The above statement would seem to be self-evident but in reality many intriguing and rather crucial issues become manifest following further analysis. Firstly, although admittedly it is often desirable to make use of the well-presented texts which are available today, it is imperative that every lecturer keeps his course up to date and relevant in terms of the requirements for each year's graduate veterinarians. This can be achieved by making use of primary sources of information such as an instructor's own research work, published reviews and articles, and personal contact with scientists who have similar interests. However, a source of extremely useful knowledge, which so often would be of immense benefit to students but which to date has been sorely neglected, is the graduate veterinarian himself, in whatever field he may be engaged. Experience is perhaps the greatest teacher of all and many veterinarians are exposed to an enormous spectrum of interesting circumstances during their daily professional activities but the benefits derived by others from these experiences are very limited indeed. Unfortunately, veterinarians are notoriously reticent scribes and the relative number who contribute to scientific and clinical journals in South Africa is abysmally small. Somehow, a very real effort must be made to overcome this hiatus in veterinary education.

The second point to ponder is the perennial and thorny problem of the relevance of the subject matter taught. Under the intensive system of university education which is currently followed in most professional schools, there is little time for superfluous material to be included in courses. The "re-dundant" aspects which are often neglected include historical reviews, discussions on procedures adopted in other countries, and diseases and conditions which do not occur locally. It is quite evident that this approach by force of circumstance must lead to a highly trained locally-adapted graduate, and not an educated graduate in the classical sense of the word. Bearing this in mind, a lecturer has no recourse other than to consult the profession for guidance in tailoring his course to the country's needs, simply because he himself is in no position to pulse the demands made in the field.

Thus with regard to the instruction of undergraduate students, I believe that a fundamental interaction between the Faculty and the Veterinary Profession should take place. The beneficial effects of such dialogue would be considerable. However, I must sound a small cautionary note in this context It must always be born in mind that the academician is the professional teacher and it is he who is equipped to collate and integrate courses which are then subsequently delivered in a digestible form. The key link in the circuit is the contact and transfer of information from instructor to student. All educational efforts should be directed at facilitating this step in the whole process.

There are many considerations which come to mind of how such a concept of synergism may be nutured but a limitation of space precludes a full discussion on any particular aspect. I shall simply submit a number of personal suggestions by which mutually useful contact between academic departments and the profession may be cultivated. In some cases, in fact, the idea is already being carried out.

1. Frequent referral of interesting cases to the Faculty clinics for further investigation and the subsequent investigation and the subsequent inclusion of the referring and any other interested veterinarian in all discussions regarding the case, if this is feasible.
2. Exchange of knowledge by arranging a forum at which case reports can be presented and discussed.
3. Organization of visits by students and teaching staff to veterinary hospitals, drug companies, municipal and state institutions, artificial insemination centres and other undertakings of direct educational interest.
4. Introduction of some form of "housemanship" for veterinary students which would allow more prolonged periods of exposure to private practice than is at present the case.
5. Routine invitations to selected members of the profession who could deliver either a single or a series of lectures on their own specialities to either the whole or part of the student body.

At the post-graduate level the relationship between an academic department and the profession is somewhat different but is of equal concern to all those involved in this sphere. Due to the rapid advances of science, so much more must be done to maintain high professional proficiency in the world today.

Entering for post-graduate study which will ultimately lead to a master's of doctoral degree are special cases where a candidate is subjected to intense specialized instruction and/or must undertake a sophisticated research project in order to demonstrate his ability. The standard required is in every case the direct responsibility of the department in which the post-graduate student is registered. This is a weighty obligation as the standard of a profession in a country is frequently judged by the achievements of its post-graduate students.

However, a Faculty must take a continual interest in the academic welfare of all its graduates and must do what it can to assist them during their professional careers. Similarly, the graduates from a teaching institution tend to retain an active interest in the well-being of their alma mater and one finds this reciprocal interest being very overt among veterinarians in our own country. Mutual academic benefit is gained principally from participation in continuing education programmes, short

courses, symposia, congresses and group meetings. In addition, the publication of scientific and clinical articles in various journals adds to the academic foundation of the whole profession. Perhaps the onus in the above-noted respects is more on the shoulders of the academician and researcher rather than on those of his colleagues engaged in other careers. This is principally because of their ready access to libraries and the very wide spectrum of veterinary and medical literature. Moreover, contact with overseas visitors and the advantage of periods of study in other countries is more often afforded to academicians than others in the profession. However, once again a feedback mechanism should be established whereby the academic demands of the veterinary profession are catered for by the Faculty, while the profession in turn supports the endeavours of the Faculty.

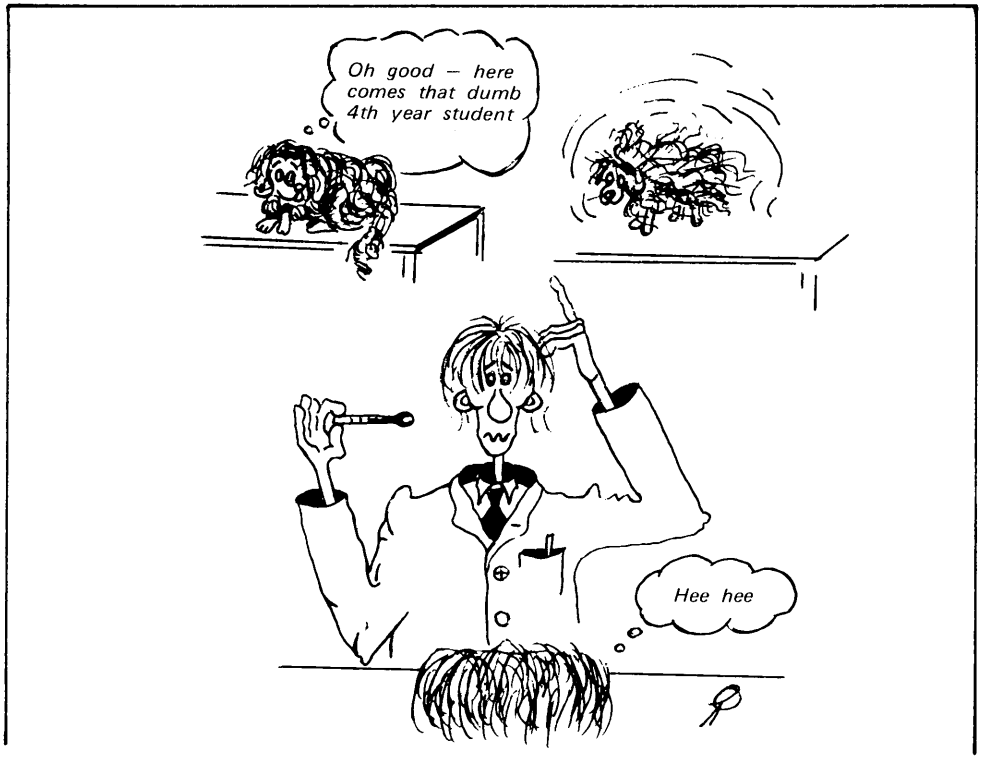
In conclusion, I could perhaps summarize the pith of my remarks by quoting a few lines from Arnold Rieck's Prayer of a Veterinary Surgeon:

"Make my endeavours in this noble Art
Worthy of my teachers and deserving too
Of any trust that I may gain."

Two phrases from R. Dykstra's Veterinarian's creed are also appropriate:
"To be modest and open-minded and thankful for every opportunity to increase my knowledge and usefulness;

To be a co-worker with my fellow practitioners by the mutual interchange of counsel and assistance."

It is in this spirit that the Veterinary Profession in South Africa can grow from strength to strength.



THE STANDARDISED PROCEDURE OF ADMINISTERING PHARMACODYNAMIC AGENTS

The incongruity that exists in this field, demands of the veterinary student a replete, astute and specialised knowledge of the subject, so as to circumvent the most ineffable pitfalls to be encountered, depending of course under whose term of office one is labouring.

The first technique of administration to be discussed will be the very simple subcutaneous injection. Anyone without a comprehensive veterinary training at Onderstepoort would be, oh, so misguided as to presume that a subcutaneous injection involves the cut and dried procedure of delivering the respective agent beneath the cutaneous tissue with a suitable needle and syringe. Alas! this is not the case. The site is exceptionally important. Never employ the foolhardy practice of injecting along the mid-dorsal line — abscesses don't drain without the aid of gravity. Never inject caudal to the shoulder — this contra-indication has never been satisfactorily explained, but nevertheless remains a contra-indication. Never pierce the skin on both sides of the fold grasped in one's hand — half subcutaneous and half topical delivery lessens the effectivity of the agent, and results in a very flushed, albeit transitory, facial complexion on the part of the administrator. This embarrassing situation also results from applying too great a pressure to the plunger of a syringe containing an oil base agent, with a 22 guage needle attached — the needle and syringe generally part company.

One cannot afford to be too dogmatic, but some schools of thought do in fact advocate the use of the deep subcutaneous technique. This very nearly involves pulling the small animal patient's skin off, in an attempt to grasp a suitable hand-full of skin from the ruff of the neck — an ideal site for unsatisfactory abscess drainage. The needle is pierced into the subcutaneous tissue and the agent finds itself in precisely the same position as it would be if given via the ordinary subcutaneous route. So much for subcutaneous injections.

At this juncture it would be fitting to discuss a most contentious issue, that involving the intramuscular injection. Some authorities advocate the exclusive use of the hind-quarter, but others fear the possibility of sciatic paralysis in this region. Indeed, "two thousand intramuscular injections, and never one returned with paralysis" has often been claimed by the anti-hind-quarter faction. The alternative route required by this sector, is either the deep subcutaneous route, as mentioned above, or the use of the triceps mass, where apparently the danger of radial paralysis is obviated.

There appears to be some accord between all authorities with regard to the administration of intramuscular injections in large animals and for this the student is very thankful to all those concerned.

Inevitably, there are differing teaching principles involved in injecting agents intravascularly. Some discourage the bending of needles prior to insertion into the relevant vessel, whilst others strongly encourage it. Some use the most convenient vessel at hand, whilst others use a specific vessel for a specific task. Some use a needle with syringe attached, others require the needle to be pushed home, so as to speak, before attachment.

For the benighted, the assumption is generally that an entente must surely exist between the respective sectors. This, however, is a most erroneous assumption and must be avoided at all costs, as the consequences awaiting them are vast in the extreme.

Anonymous.

E.coli: A PROBLEM IN THE NATAL MIDLANDS

M. LOWRY

CASE I: LARGE DAIRY HERD, CATO RIDGE DISTRICT

The farmer in this case complained of an outbreak of acute mastitis. Most of the animals affected were heifers that had recently been introduced into the milking herd. In addition to acute mastitis the affected animals also showed severe systemic involvement and a mortality rate of just under 50% of affected animals. The mastitis was typically that caused by **E.coli.**

Swabs were taken from all possible sources of contamination in an effort to determine the origin of the outbreak. All these swabs showed very high **E.coli** contamination. The farmer was instructed to improve his dairy hygiene. Approximately one week later the dairy was again swabbed and a considerable improvement was apparent. However, the problem persisted although the incidence decreased considerably.

A sample of the water supply was then taken and analysed completely. **E.coli** counts were found to be in excess of 200,000 organisms per ml.. The water supply was obtained from the Umlaas River and passed through a very ineffective filter prior to use.

Due to the high bacterial count it was decided to chlorinate the water. This was done using an inline chlorinator; the final available chlorine content being 200 ppm. This level was considered necessary due to the high organic content of the water.

Subsequent water tests revealed that the offending organisms had for all intents and purposes been eliminated. The herd health improved greatly and to date only the odd cases of **E.coli** mastitis have been recorded.

CASE II: 450 SOW UNIT PRODUCING BACONERS

This herd had suffered for years from scours in piglets just pre-weaning to approximately 35 Kg. weight. All possible antibiotics had been tried via all possible routes. At one stage the costs of antibiotics exceeded R2 per baconer produced. In addition mortality was extremely high; the herd averaged 10,2 piglets born and only 6,7 piglets weaned per litter.

Once again the water supply was from a river running through the farm. However in this case the water was not treated in any way. **E.coli** was readily cultured from water samples and on typing strain 0149 was found to be present in fairly significant numbers.

The water supply was chlorinated but in this case the disease far from disappeared although the incidence decreased considerably. The reason for this persistance was thought to be due to the buildings being old and thus extremely difficult to disinfect effectively. Also, as the sows had been subjected to continual exposure they were all considered to be carriers and thus a constant source of reinfection dispite the water supply being rectified. Subsequently production figures improved considerably although the owner considered it essential to include Neo-Terramycin in the creep ration at a rate of 100gm per ton.. No antibiotic was necessary in the growth ration and the odd pig that scoured was treated with Neo-Terramycin soluble powder with satisfactory results. This being the case, the economics of the enterprise improved considerably.

CASE III: 60 SOW UNIT – DRAKENSBERG AREA

Of the three cases under consideration this was perhaps the most interesting due to the fact that management was of the highest order and the plant hygiene was of an exceptional standard. Despite

this, severe scour problems occurred in piglets from approximately four weeks of age to almost porker weight. The mortality rate was extremely low but there was a high % of runts in the growers and conversion figures were correspondingly poor. As will be seen the owner was prepared to go to any extremes to control or eliminate the problem.

Initially a very high level of Neo-Terramycin was used in the creep and growth rations. The problem persisted and the Neo-Terramycin was replaced by therapeutic levels of Tylan (Elanco). Results were disappointing.

The water supply in this case was from a high lying dam on the property. The water was tested and **E.coli** was found to be present in very high numbers. As the owner, his family and visitors to the farm had suffered from intermittant diarrhoea of undiagnosed origin the water supply was considered to be the cause and as a result the owner decided to sink a borehole.

Subsequently borehole water was used for domestic purposes and for the pigs. There was no improvement in the pigs despite the change to a new water source. Due to the age old adage that borehole water is of excellent quality bacteriologically, this tended to indicate that the problem lay in the pigsties themselves. As the sow accommodation was unsatisfactory being in the form of small camps, and the farrowing facilities being outdated and in poor repair the owner decided to erect new buildings, Sow stalls were introduced and cubicles with farrowing crates improved farrowing facilities. Prior to putting the sows into their new accommodation all sows were put on Neo-Terramycin at 100gm/ton of feed for two weeks in an attempt to reduce any resident **E.coli** population. Within three weeks of the piglets being born in the new farrowing facilities they started scouring. Post-mortem revealed significant numbers of **E.coli** Strain 0149.

As there had been no improvement in the weaner pigs all weaner sties were replastered completely (floors and walls). This step had no effect on the overall problem.

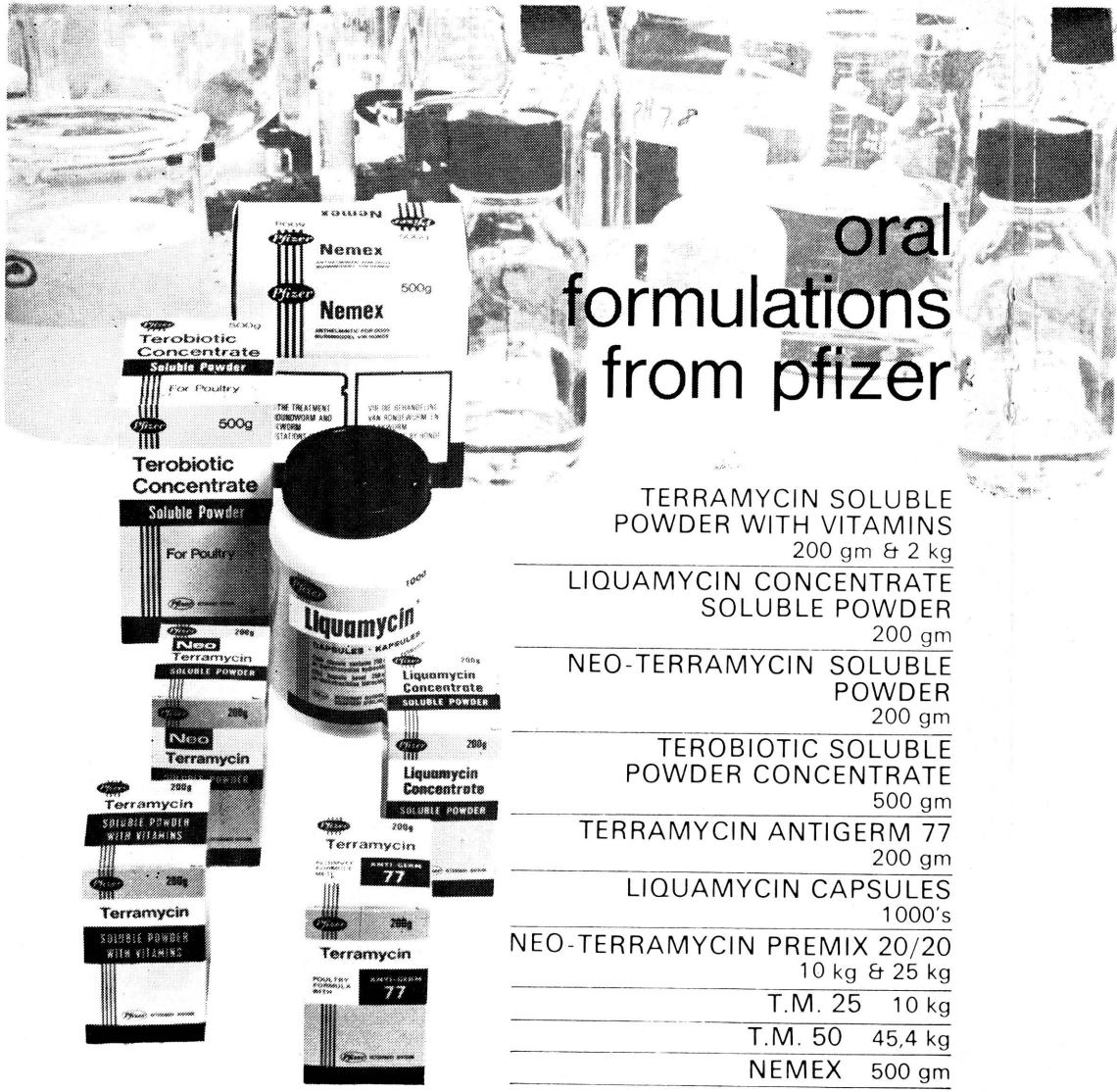
At this stage the owner was desperate. It was them decided to once again sample the water supply. Sample collected from the pump were highly contaminated with Strain 0149. This led to the water being chlorinated to a level of 50 ppm active chlorine. The entire herd with the exception of the baconers were put on Neo-Terramycin and all the sties were thoroughly disinfected. The antibiotic inclusion was continued for two weeks. The results were fantastic. Within four weeks the piglets showed bloom; growth rates improved and the owner, his family and visitors no longer suffered gastro-intestinal upsets.

To date the problem has never returned on any significant scale although the odd case of scours has been ascribed to **E.coli.**

DISCUSSION:

The presence of coliform organisms in the water supplies of farms along the Tugela river has long been known to be the cause of problems in the dairies on these farms. Subsequent to the above mentioned cases water samples were taken from a large number of pig and dairy farms throughout Natal. In most cases with the exception of very deep boreholes well away from the Drakensberg most samples were **E.coli** positive. Unfortunately it was not possible to type all samples and thus this is only indicative of faecal contamination. However, where typing was undertaken many revealed the presence of strains of **E.coli** considered to be pathogenic. The same, according to Dr. Loveday does not appear to be the case in the Transvaal; most samples tested by him have been negative. The reason for the high incidence in Natal is probably due to the major portion of the 'berg area being native reserve and thus water sources are contaminated at their sources. Also many of the 'berg streams go underground, thus perhaps explaining the incidence in shallow boreholes along the foot-hills of the Drakensberg.

In the authors experience in any cases of persistant scours in pig herds where management and hygiene is of a satisfactory standard the water supply should be viewed with suspicion.



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TERRAMYCIN ANTIGERM 77	200 gm
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NEO-TERRAMYCIN PREMIX 20/20	10 kg & 25 kg
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a formulation to meet every need for medication by water, feed and individual dosage.

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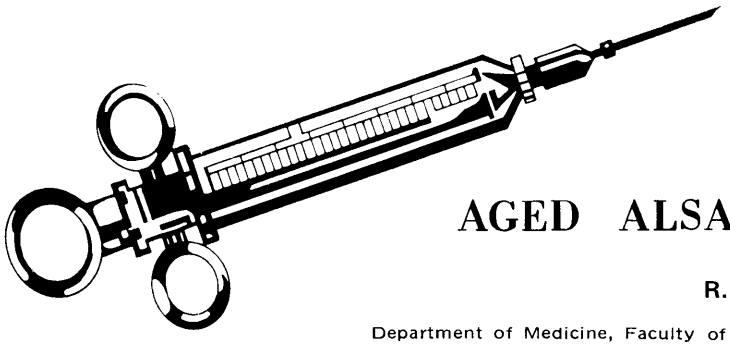


EPILEPSY IN AN AGED ALSATIAN DOG

R.K. Loveday

Department of Medicine, Faculty of Veterinary Science, U.P.

SUBJECT: Sable Alsatian male dog, 12 years old, weighing 37 kg.

ANAMNESIS: Immunized against distemper at 3 months of age. No previous illness except a single attack of biliary fever. No apparent exposure to toxic or potentially toxic substances. Some 6 weeks earlier the animal lost interest in its food and was thereafter fed daily by the owner. Vomiting of small amounts of gastric mucous ("white foam") occurred quite often and salivation was excessive. Generalised tonic-clonic seizures had recently occurred four times in all at approximately weekly intervals. After one of these attacks the dog had shown both left head tilt and left circling for a short while.

STATUS PRAESENS: An exceedingly nervous animal in reasonable condition who resented handling. A weak gait with some swaying posteriorly, but no ataxia or hypermetria. Pupillary reflexes present. No nystagmus. Spinal and postural reflexes normal. Buccal mucosa slightly congested with some ptyalism present, but no abnormal odour or mouth lesions found. Femoral pulses strong, equal and rhythmic, pulse rate 50/minute. Respiration rapid and shallow, with some panting. No adventitions cardiac or pulmonary sounds on auscultation and lung areas normally resonant on percussion. Abdominal palpation hindered by nervous "boarding" of the musculature, but no evidence of pain or the presence of an abdominal mass elicited.

LABORATORY EXAMINATION: A normal haemogram, also normal B.U.N. and blood sugar values.

DIAGNOSTIC CONSIDERATIONS: Owner refused hospitalization for the dog, so was sent home while awaiting laboratory results. Some reflection and reading up led to the following thoughts:

1. The condition was of slow onset and the recurrent nature of the seizures meant it could be given the general generic name of "epilepsy".
2. The advanced age of the dog rather ruled out idiopathic or "true" epilepsy, which has an onset at 1 to 5 years of age.
3. There was little evidence of a systemic cause, such as hypoxia (cardiac or pulmonary disease) or hypoglycaemia for the seizures, although cerebral atherosclerosis could not be excluded as a rare possibility.
4. Despite its nervousness the dog had a relatively slow resting pulse rate. There was also a history of emesis and signs of nausea. Together with the seizures and the rather rapid, shallow respiration, these signs collectively might signal increased intra-cranial pressure.

5. The one episode of circling after a seizure was evidently not attributable to a cerebellar-vestibular syndrome, since no other localising signs, such as hypermetria, incoordination, torticollis or nystagmus, had been noted.

6. The above considerations together seemed to raise the possibility of a slowly expanding space-occupying lesion in the anterior fossa.

TREATMENT: The owner was informed of consideration 6 above and a grave prognosis given. The medication prescribed by the referring colleague (Stemetil (a phenothiazine derivative) 5 mg. t.i.d./os) as tranquilizer and to control the ptyalism, was left unchanged.

COMMENT: The dog died 26 days later after several more seizures had occurred. Post-mortem examination of the brain revealed a tumour of the right front cerebral lobe which was later diagnosed histologically as an astrocytoma.

McGrath (1960) lists 4 syndromes, based on anatomico-physiological considerations, connected with cranial neoplasia, viz. cranial nerve, posterior fossa involving medulla-cerebellar-vestibular midbrain area, pituitary — hypothalamic and cerebral. The last named occurs most often and has epilepsy as one of its commonest signs. "Cerebral circling" as he calls it, may be ipselateral or contraleteral as regards the side of the lesion.

Bannister (1973) states that epilepsy in cerebral tumour occurs most frequently when the tumour is in the frontal or temporal lobe, but it may be a symptom of a tumour in any part of the cerebral hemisphere. Holliday et al (1970) consider that phenothiazine-derived tranquilizers are definetly contra-indicated in dogs with a history of seizures, since they can activate EEG abnormalities associated with epilepsy and induce or maintain status epilepticus in this species.

REFERENCES

Bannister, R (1973). Brain's Clinical Neurology, 4th Edition. Oxford University Press, London.
Holliday, T.A. et al (1970). Epilepsia, 11, 281-292.
McGrath, J.T. (1960). Neurologic Examination of the Dog, 2nd Edition. Lea and Febiger, Philadelphia.

Department of Medicine, Faculty of Veterinary Science, U.P.

STUDENT RESEARCH PROJECTS

In view of the excellent article (in a previous OP magazine) informing students of the research work of the various members of staff, we have decided to mention just a few of the intensive research projects being undertaken by certain members of the student body:

1. **The absorption, pharmacodynamics, biotransformation and excretion of ethanol from the body of the postexaminal student** by W.E. McGirr

   This project involves regular weekly sampling of students. Latest findings are that microsomal induction in senior students far exceeds that of junior students.

2. **The pharmacological effects of tioctic acid and glucuronic acid on the metabolism of ethanol by the postexaminal student** by P. Gilbert-Green.

   This interesting project was inspired by the rather drastic findings in the first project.

3. **Biomechanics of motility in swimming dolphins at altitudes over 2000 metres** by S. Seaman, A. Fisher.

   After much personal effort by the authors the project was unfortunately abandoned due to unpopularity with the authorities concerned.

4. **The physicotraumatics of high speed collision by cyclists** by M. Walsh

   100% of cases so far studied show that scapular damage is a predominant pathological finding.

5. **Nocturnal surface skin temperature recording from long distance runners in various exposures** by G. Reeve.

   The author is having difficulty finding experimental material due to the existing low ambient temperatures.

6. **The decline of neo-colonialistic idealism in veterinary standards** Major Borrowdale (ex Indian Army)

   One evident finding indicates: "Why Swot? If you don't know it now, you'll never know it! "

7. **Advances in transabdominal herniation suture techniques** by B. Hurwitz.

   Long term effects were not studied due to the death of the patient.

8. **Local tannic acid scalding induced by increased adrenaline levels related to undesirable statements by colleagues** by R. Newman

   An interesting short term project carried out at teatime, allowing most of the student body to see the peculiar results.

9. **The phenotypic acquisition of ruminal status in initially monogastric veterinary students as a result of long term ingestion of high bulk roughage.**

   A joint project by the Food Committee shows that by 3rd year a ruminoreticulum is present and that by 5th year the omasum has also appeared.

10. **The life and work of Dr. Y. Smith** by Jim Reid Rowland

    Present indications show that this is an extremely long term project.

11. **The ability of 2nd year students to learn veterinary science during extended evening tea breaks** by R. Jeppe, A. Stettler, L. Lewis, I. du Plooy, M. Thomas

    Results will only be available at the end of year.

12. **Phenamidine - A radical improvement in the route of administration** by M. Odendaal.

    Intravenous usage, although accompanied by unexpected effects, caused rather a rapid cure.

13. **Emergency access to drugs** by H.R. Scherer

    Rather drastic physical methods of obtaining the correct drip solution are studied. This project is being undertaken in collaboration with the Department of Medicine (using their equipment!)

14. **Anal fixation in goats** by G. Louw

    A detailed work which would not be possible without the assistance of the 2nd year class.

THE EQUINE PHYSIOLOGY RESEARCH UNIT

The Equine Physiology Research Unit of the University of Pretoria was founded in 1971, by the efforts of a number of South African citizens, sporting clubs, breed societies, and other institutions whose common interests were the health, breeding, racing and general welfare of the horse in Southern Africa.

The funds collected by the above bodies were used to found the Chair of Equine Physiology of the University of Pretoria, and the work of the Unit began when this Chair was formally occupied on 1st October, 1971 by Prof. A Littlejohn.

The aims of the EPRU may be summarised as follows:

1) To carry out fundamental research in the field of exercise physiology in the horse.

2) To collaborate, in pursuance of this aim, with members of other departments and institutions.

3) To apply the knowledge and expertise gained to the best advantage of the horse in Southern Africa.

4) To assist in the training of students in the disciplines and techniques utilised by this unit.

In the third year of its existence, the work of the Unit has fallen into a pattern which provides a balanced pursuit of the above objectives. In particular, we have been concerned to achieve fruitful collaboration with members of other departments and of different institutions, since it is difficult if not impossible for a single individual to carry out biological research unaided and in vacuo.

PROJECTS COMPLETED.

(1) "Respiration in new-born foals anaesthetised with sodium pentobarbitone and fluothane".

The object of this investigation was to compare two anaesthetic techniques at 1300 m. altitude in foals of 1 – 21 days of age. There is a great deal of information regarding the safety and efficiency of different anaesthetic techniques in adult horses, but very little in foals despite the fact that foals are

not uncommonly required to undergo major surgery within the first few weeks of life. The efficiency of ventilation was measured in newborn foals and also at 15 – 21 days of age. Much new information of value in enquine anaesthesia was obtained from this study, and a paper to this effect was delivered at the Annual Conference of the Equine Practitioners Group in April 1973. This work is also to be delivered at the 1st International Symposium upon Equine Reproduction at King's College, Cambridge during the period July 22 – 26, 1974.

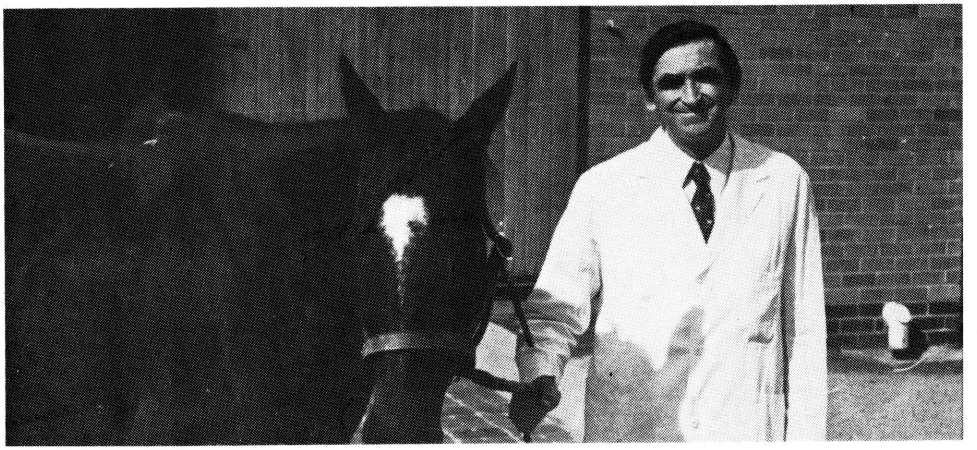
(2) "A technique for collecting blood samples under anaerobic conditions, from horses during exercise".

Up to the present, haematological investigations in working saddle horses have without exception been carried out at rest, i.e. after the horse has completed work. Consequently the results have reflected what is happening during recovery from work, and not during work itself. For accurate assessment, however, it is necessary to collect samples during exercise, at different stages of the work period.

A technique was devised for collecting arterial and central venous samples during exercise. This consists of two spring-loaded syringes connected by three-way taps to indwelling arterial and venous cannulae. The springs are released by a simple mechanism activated by the rider, thus enabling samples to be collected at any stage during work. This technique has been tested in horses by comparing samples collected thereby with samples collected by direct puncture of the vessel. The results of the comparison show that the technique is just as accurate as manual techniques.

(3) Factors influencing the oxygen/haemoglobin dissociation curve of the horse.

Investigations in foals revealed that there was apparently no information regarding the 0_2/Hb dissociation curve in foals. Blood samples from one newborn Percheron foal have in fact been investigated and compared with those of the dam. The results indicate that as with other neonates including the human baby, the blood of newborn foals has a much greater affinity for oxygen than that of adult horses.



Prof. A. Littlejohn

PROJECTS IN PROGRESS.

(1) "The effect of exercise at different work rates on acid-base and bloodgas values in the horse."

This project is providing much new information, since our techniques allow the collection of simultaneous arterial and venous blood samples during exercise. We have also shown that blood values change significantly in the first ten minutes following the end of exercise and it therefore appears that our techniques are more accurate and informative than those used heretofore.

Experiments have been carried out on four experimental horses in which the carotid artery was repositioned in the subcutaneous position to allow repeated indwelling cannulation. Samples of blood were collected at intervals during standardised work at walk, trot and gallop. One finding of general interest is the confirmation of the long-suspected phenomenon, that as in human sprinting athletes and aquatic diving mammals, horses are already metabolising anaerobically in the first 200 metres of a gallop.

(2) "Cardio-pulmonary function studies in normal horses and in horses with cardial and/or respiratory dysfunction."

In collaboration with Dr. C. Button, Dept. of Medicine.

The investigation of horses referred to Faculty Clinics continues and the collaboration of the Dept. of Veterinary Medicine and Veterinary Surgery is much appreciated. Referred horses are subjected to E.C.G. and pulmonary function tests when necessary.

The existence of allergic pulmonary conditions has been reported in other countries but so far not in South Africa. However, it has become apparent in the course of our investigations that an asthma-like syndrome does in fact occur in horses in South Africa. The causes of this have not been ascertained, but a project to identify pathogens is planned in collaboration with a member of the Department of Infectious Diseases (Dr. C. McCrindle):

(3) "Survey of Equine Disease in Southern Africa."

In order to establish priorities for future research efforts in horses, an extensive survey was planned to investigate incidence of disease conditions in horses in Southern Africa and Rhodesia. The Director of the Computer Unit of Pretoria University collaborated closely in the planning and execution of this survey, which is expected to cover a population sample of approximately 12 000 horses. Information supplied each month by veterinarians engaged in equine practice is stored in the Computer. Collection of data is now completed; the final programming is nearing completion.

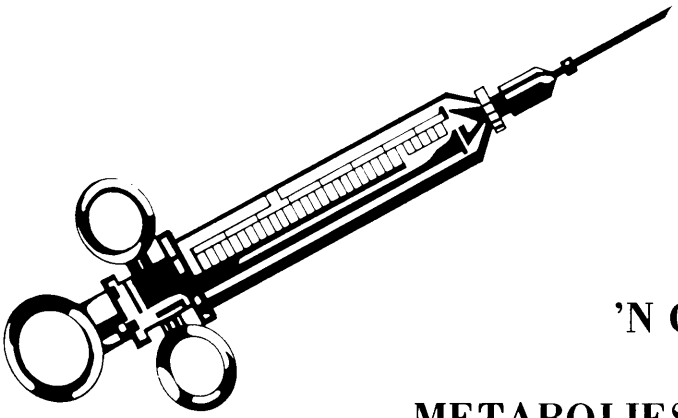
(4) "Telemetry of the EKG in the horse."

As reported in our Annual Report of 1972, a telemetry system was developed (in collaboration with Mr. G. Hill of the C.S.I.R.), for determining the heart rate of horses during exercise. It was noted then that the system was unsatisfactory for analysis of the EKG. However, further experiments and modification of the system allowed analysis of the QT/RR ratio of the electrocardiogram at slow rates of work in the majority of horses.

Experiments in this field are continuing.

PROJECTS IN PLANNING STAGE.

(1) "The relationship between heart rate and oxygen consumption in horses".



'N GEVAL VAN METABOLIESE ASEDOSE IN 'N JERSEYKOEI

GESKIEDENIS

Die koei het die vorige aand in die meelkamer ingekom en het 'n halfsak mieliemeel opgevreet. Die koei was om 3.15 nm. die volgende dag gesien.

KLINIESE BEVINDINGS (slegs belangrikste abnormale bevindings)

Die koei was in 'n koma en het 'n baie duidelike dehidrasie getoon (velvou het 'n paar oomblikke geneem om terug na normaal te keer). 'n Effense laminitis was teenwoordig.

Alle sigbare slymvliese was 'n donker vuil pienk kleur, en die oë is diep in die oogkaste ingesink (dehidrasie). Respirasie was 12 asemhalings per minuut.

Die rumen is gevul met 'n deegagtige massa en daar is 'n effense opblaas. Daar was hoegenaamd geen rumenbewegings nie.

SPESIALE ONDERSOEKE

1. Hematologie en bloedchemie.

(a) Hematologie:

Toets	Bevinding	Normaal
R.B.S.-telling	11 milj./kub. mm.	5 - 10 milj./kub. mm.
Hematokrit	41%	30 - 38%
Wit seltelling	10,400 selle/kub. mm.	9,000 - 10 000 selle/kub. mm.
Neutrofiele	60%	35%
Limfosiete	39%	55%
Monosiete	1%	7 - 4%

Eosinofiele	0%	0 - 5%
Basofiele	0%	0 - 2%

(b) Bloedchemie:

Toets	Bevinding	Normaal
B.U.N.	14.7 mg%	10 - 25 mg%
SGO-T	46 mU	50 mU
SGP-T	15 mU	30 - 110 mU
Bloedsuiker	98 mg%	40 - 60 mg%
Na	153.3 m eq/1	142 m eq/1
K	1.82 m eq/1	3 - 5.5 m eq/1
Mg	9.53 mg%	2,5 +0,5 mg %
Ca	1.64 m eq/1	9 - 12 meq/1
S.A.P.	6.7 KA eenhede	3 - 13 KA eenhede
Cl	105 meq/1	96 - 108 meq/1
CO_2	32 meq/1	20 - 30 meq/1
pH	7.6	7.35

2. Roetine urienondersoek

Toets	Bevindings	Normaal
Kleur	donker geel	liggeel
Troebelheid	geen	geen
S.G.	1.018	1.015
pH	5.5	7.5-8
Albumien	geen	geen
Suiker	+++	geen
Ketone	negatief	negatief
Bilurubien	negatief	negatief
Hb	negatief	negatief
selle	geen	geen
gietsels	geen	geen

Die urien is vry gekollekteer.

3. Rumeninhoud:

pH. 4.5 (normaal 6.8). Die rumeninhoud het ook 'n suur reuk gehad. Sedimentasie flotasietoets: A.g.v. te veel growwe materiaal was die toets nie suksesvol nie.

LYS VAN ABNORMALE BEVINDINGS EN BESPREKING DAARVAN

Dehidrasie: Die osmotiese druk verhoog a.g.v. verhoogde melksuurinhoud (absorbsie van water verminder) en vloeistof beweeg in die rumen in. Die dehidrasie lei gevolglik tot haemokonsentrasie, val in bloeddruk en anurie.

Laminitis : Dit ontstaan a.g.v. histamienvrystelling in die rumen.

Asemhaling: Die asemhaling was vlak en abdominaal. Die asemhalingspoed was 12/min. As gevolg van die posisie waarin die koei gelê het en die groot rumen (wat baie vloeistof bevat het) kon torakale asemhaling nie plaasgevind het nie. Omdat sy in 'n koma was, was die asemhaling so vlak en stadig.

Spysverteringskanaal: Soos klinies vasgestel kon word, het die rumeninhoud bestaan uit 'n kompakte deegagtige massa wat gepaard gegaan het met baie vloeistof.

A.g.v. die baie melksuur in die rumen het dit 'n rumenitis en rumenstase veroorsaak (fermentasie het nog aangehou maar daar was rumenstase en daarom was daar 'n mate van opblaas).

Daar was ook geen borborygme hoorbaar nie en die anussluitspier was heeltemal verslap a.g.v. 'n stase van die derms.

Hart: A.g.v. die dehidrasie is daar 'n hemokonsentrasie en 'n daling in bloeddruk. Daar is dus 'n versnelling in die hartspoed (in die geval was dit 112 slae/min) maar omdat daar 'n lae bloeddruk is, is die pols swak.

2. Hematologie:

(a) **R.B.S. telling** is 11 milj./kub. mm. (normaal 5-10 milj/kub. mm.).

Dit is te wyte aan die haemokonsentrasie wat ontstaan het omdat die osmotiese druk verhoog het en baie vloeistof uit die bloed getrek het wat ook verantwoordelik was vir die dehidrasie.

(b) **Hematokrit** was 41% (normaalweg moet dit 30 - 32% wees). Die rede is ook die dehidrasie.

(c) **Leukositose:** Wit seltelling is 10 400 selle/kub. mm. (normaal is 9 000 - 10 000 sell/kub. mm).

Dit is hoofsaaklik te wyte aan 'n neutrofilie (60%) (normaal is 35%). Daar is egter 'n limfopenie (29% i.p.v. die normaal van 55%). Daar was dus 'n omkering van neutrofiele en limfosiete. Die neutrofilie is te wyte aan die erge rumenitis wat teenwoordig is.

Die limfopenie en eosinopenie is te wyte aan hiperaktiwiteit van die adrenaalkorteks, wat veroorsaak word deur die stress van die siekte. In die behandeling is daar onder andere ook gebruik gemaak van kortikosteroiede wat ook dieselfde effek op die bloedselle sal hê.

(d) **Neutrofiele is 60**% (norm. 35%). Die geweldige suur rumen (PH 4.5) a.g.v. die baie melksuur het 'n irritasie van die ruemnslymvlies tot gevolg gehad wat gelei het tot 'n rumentitis. A.g.v. die rumenitis het die sirkulerende neutrofiele gestyg en die % neutrofiele het verhoog, terwyl die ander wit bloedselle verminder het in getal. Omdat die ander wit bloedselle so verminder het in getal lyk dit of die neutrofiele geweldig gestyg het. Die neutrofiele het werklik gestyg maar relatiewe neutrofielie speel hier beslis ook 'n rol.

(e) **Limfosiete 29**% (normaal 55%).

Eosinofiele 0% (normaal 0 - 5%).

Die vermindering van die eosinofiele en limfosiete is beide te wyte aan die hiperaktiwiteit van die adrenaal skors a.g.v. die stress wat teenwoordig is.

3. Bloedchemie.

(a) **Verhoogde bloedsuiker:** 98 mg.% (normaal is dit 40 - 60 mg.%).

Die invloed van stress op die adrenaal korteks is daarvoor verantwoordelik. Glikogeen wat in die lewer gestoor word gaan dan in die bloed a.g.v. die inwerking van die hipersekresie van die hormone van die adrenaalkorteks. Die verhoogde hormoon afskeiding stimuleer ook glukoneogenese. Dit mag ook deels te wyte wees aan glukose-saline wat gedurende die behandeling toegedien is.

(b) **Na 153.3 meq/L** (normaal is 142 meq/l) en
K 1.82 meq/ L (normaal is 3 - 5.5 meq/L

Bogenoemde twee is te wyte aan stimulasie van die adrenaal korteks wat dan meer minerale kortikoiede afskei wat verantwoordelik is vir Na-retensie (vandaar die verhoging) en uitskeiding van K (vandaar die verlaging in die bloed). Bogenoemde kan ook te wyte wees aan toediening van kortikosteroiede (Betsolan).

(c) **Mg 9.53 mg% (normaal is 2,5 ± 0,5 mg %).**

Volgens Prof. Brown* (Dept. Fisiologie) is die hoogste Mg van die bloed wat hy nog in die literatuur teegekom het 4.5 mg% en skryf die 9.53 mg% toe aan 'n fout met die berekening.

(d) **Ca is 1.64 meq/L** (normaal is 9 - 12 meq/L)

Daar kon geen verklaring vir die geweldige daling in Ca gevind word nie. Te lae inname kan dit nie so drasties laat daal het nie. Dit kon ook nie melkkoors wees nie, want die koei was nie in kalf nie of het ook nie gekalf nie. Dr. Owen (Dept. Fisiologie) skryf dit toe aan 'n fout met die bepaling daarvan.

(e) **CO_2 inhoud is 32 meq/L** (norm 20 - 30 meq/L) en pH. 7.6 (norm. 7.35).

Mens sou verwag het dat die bloed pH aansienlik sou daal a.g.v. die baie melksuur in die bloed, en dat die Co_2 inhoud van die bloed baie hoër sou wees met so 'n akute asedose. Beide is feitlik normaal en dit is toe geskryf daaraan dat daar te lang tyd verloop het vandat die bloed geneem is en voordat dit getoets is. Dit behoort binne 2 uur getoets te word vandat dit geneem is. In hierdie geval egter is die bloed die aand geneem (toe die koei ingekom het) en dit is die volgende oggend ingehandig by die laboratorium. Voordat daar weer bloed geneem kon word is die koei dood.

4. Urienondersoek.

(a) **Kleur:** Die urien is donkergeel i.p.v. liggeel. Dit is te wyte aan die anurie wat teenwoordig is wat die urien dan meer konsentreer.

(b) **S.G.:** Die S.G. is 1.018 i.p.v. die norm 1.015. Dit is toe te skryf aan die konsentrasie van die urien a.g.v. die anurie.

(c) **PH:** Dit is 5.5 (norm 7.5 - 8). Omdat daar 'n geweldige hoeveelheid melksuur in die bloed is word baie daarvan ook in die urien uitgeskei wat dan die pH laat daal.

(d) **Suiker** +++ (Glukose-urie): Daar is ook baie suiker in die bloed (sien vorige verklaring). Omdat daar so baie in die bloed is word daar ook baie in die urien uitgeskei wat die baie glukose in die urien gee. Normaal is daar geen glukose in die urien nie.

5. Rumeninhoud.

pH 4.5 (norm 6.8). Dit is te wyte aan die melksuur wat in die rumen deur die lactobacilli van die koolhidraat gevorm word, wat die rumeninhoud se pH laat daal. Die rumeninhoud ruik ook suur en het baie mielies in. Rumeninhoud is verkry d.m.v. 'n neusbuis.

VOORLOPIGE DIAGNOSE

Volgens die geskiedenis en die ontleding van die abnormale bevindings is die voorlopige diagnose 'n oorvreet aan graan wat gelei het tot metaboliese asedose.

*Nou Dept. Fisiologie van Mediese Fakulteit, Universiteit van Pretoria.

DIFFERENSIËLE DIAGNOSES

1. Melkkoors.
2. Vergiftigings bv. tulp, arseen, ens.
3. Lamsiekte.
4. Laminitis bv. crotoloribossie.
5. Drie-dae-stywe-siekte.

Die geskiedenis met die tipiese asedose tekens wat daarop gevolg het sowel as die laboratorium uitslag is so tipies dat bogenoemde differensiële diagnoses uitgeskakel kan word en met sekerheid 'n finale diagnose van asedose gemaak kan word.

BEHANDELING EN MEEGAANDE VORDERING

Patogenese van asedose: As die patogenese van die toestand verstaan word, sal die behandeling ook meer logies wees.

Die koei het oorvreet aan mieliemeel; dus koolhidrate wat vinnig deur lactobacillis afgebreek word tot melksuur. Dit laat die rumen pH daal wat gevolglik lei tot stase van die rumen en afsterwing van mikroflora. Die alkali reserwes word uitgeput en asedose volg.

Die osmotiese druk verhoog (absorbsie van water verminder) en vloeistof beweeg in die rumen in vanuit die vaskulere stelsel met gevolglike haemokonsentrasie. Die bloeddruk daal en anurie ontstaan.

Die rumeninhoud word pap en waterig en dehidrasie volg. Gedurende die proses word histamien in die rumen vrygestel wat 'n laminitis veroorsaak.

'n Rumenitis ontstaan wat gevolg word deur sekondêre besmetting deur swamme **(Mucor spp.)** en bakterieë **(Sphaerophorus necrophorus)**

Behandeling

	3.15 nm.	4.00 nm.	5.30 nm.
Asemhaling	12/min.	12/min.	12/min.
Hartspoed	112/min.	80/min.	68/min.

3.30 nm.

1. "Parentrovite" 60 ml i/v. Dit dien as bron van vit. Bl.
   Rede: Die vit. Bl nodig in metaboliese van melksuur

2. "Phenergan" 18 ml i/m
   (Dosis 1 - 2 mg/kg)
   'n Histamien word in die rumen gevorm wat dan 'n lamenitis veroorsaak. "Phenergan" is 'n antihistamien wat daarteen gebruik word.

3. "Betsolan" 6 ml/ i/v. (Dosis is 0.04 mg/kg). Dit is 'n kortikosteroied wat 'n anti-inflimatoriese aksie het en dit help terselfdertyd teen skok. Dit het egter dieselfde aksie op die liggaam as 'n hiperaktiwiteit van die adrenaal korteks (sien vorige bespreking) wat nadelig vir die liggaam kan wees).

4. Normale soutoplossing 4 L i/v vir die dehidrasie wat ontstaan omdat die osmotiese druk wat verhoog (absorbsie van water verminder) en vloeistof beweeg in die rumen in.

5. ± 2 lb $CaCO_3$ in 20 L. water is per maagbuis gegee. Dit is 'n alkali wat die suur in die rumen neutraliseer.

7.00 nm. 1. 'n Trokar word ingesteek om die koei af te blaas.

2. Doseer 4 onse suurdeeg per neusbuis. Dit gee ook vit. B1.
Rede: Sien hierbo.

3. Gee ook twee gellingwater plus 2 onse suurdeeg deur trokar en masseer rumen om die inhoud los te kry.

4. Daar word daarin geslaag om bietjie rumeninhoud deur die neusbuis uit te tap. Dit is egter maar baie min. Dit het 'n baie suur reuk en die pH daarvan is 5.

11.00 nm. Sedert 7 nm. het die toestand van die koei aansienlik verswak. Sy is heeltemal in 'n koma. Aangesien die prognose feitlik hopeloos is, is daar besluit dat daar net sowel 'n rumenotomie gedoen kan word om die rumeninhoud te verwyder en te vervang met vars rumeninhoud wat dalk die keerpunt kon wees.

Na oorlegpleging met dr. Loveday, is daar besluit dat daar 'n rumenotomie gedoen gaan word.

Die maaginhoud is verwyder en die rumen uitgespoel. Die rumeninhoud het baie suur geruik en daar is ook 'n hele paar plastiek sakke uit die rumen verwyder.

Die rumen is gevul met opgekapte tefhooi en vars lusern. 32 L lou-warm water met 4 onse suurdeeg en twee hande tafelsout is direk in die rumen geplaas.

Gedurende die operasie is daar ook 6 liter N-sout-oplossing i/v toegedien. 20 ml. penstrep is i/m toegedien om sekondêre besmetting te bekamp (van rumenotomie wond asook rumenitis).

8.00 vm. Die koei lyk baie beter as die vorige aand. Sy is by haar volle bewussyn. Haar kornea reflekse is nou weer teenwoordig. Sy lê nog maar sit haar teë as daar aan haar gewerk word. Die prognose het beslis verbeter.

Gee 1,5 liter 10% dekstrose + 26 ml Na-laktaat i/v. Vars bees-rumeninhoud word by die slagpale gaan haal. Dit word deur 'n sif gedruk en 6 L van hierdie vloeistof + 24 L lou-warmwater + 1 Kg bruinsuiker + 1 bottel asyn word per maagbuis toegedien. Die dehidrasie het aansienlik verbeter.

Gedurende die dag is die koei gereeld besoek. Haar toestand het geleidelik verbeter. Sy was nie meer in 'n koma nie en die dehidrasie het aansienlik verbeter. Haar oë het ook 'n helderder uitkyk gehad.

Tussen 3 nm. en 4 nm. het die koei op haar sy gaan lê en het opgeblaas. Opblaas en haar swak toestand het beide bygedra tot haar dood.

PROGNOSE

Die prognose was aanvanklik taamlik sleg. Die toestand van die koei het vinnig verswak maar daar was 'n keerpunt na die rumenotomie. Die prognose was nog baie swak maar het darem bietjie verbeter. Die skielike dood a.g.v. die opblaas (wat met die postmortem bevestig is) was werklik 'n antiklimaks.

ADVIES AAN DIE EIENAAR.

Die eienaar is aangeraai om in die vervolg ten alle koste te verhoed dat sy beeste toegang het tot die stoorkamer waar sy meel gebêre word, om weer so 'n skade te vermy.

Indien so iets weer gebeur kan hy vir die bees 8 onse suurdeeg per maagbuis ingee en alle meelkos wegneem en dadelik 'n veearts ontbied.

FLITSE UIT ANGOLA.

M.M.S. SMUTS

Departement Anatomie

Jou lewe is op die spel as jy die straat oorsteek in besige Luanda (bevolking 600,000) – en dan ry hulle nog boonop aan die verkeerde kant! Avenida Luis de Camoes, Rua de Vasco da Gama – mooi name, met die "s" wat "sh" uitgespreek word. Die klimaat is tropies en druk klam op jou vel. Seker dié dat straatbedrywighede na sónonder so opmerklik toeneem. Konserte en dinees begin om 9.30 nm.

In 1966, toe dit Onderstepoort se beurt was om as gasheer op te tree vir die jaarlikse informele samesprekings tussen die Departemente Anatomie van U.P. en Wits het Prof. de Boom op die gedagte gekom om Mosambiek en Rhodesië ook uit te nooi. Toevallig was 'n groep studente van Portugal en Luanda onder leiding van 'n paar dosente in Johannesburg op besoek. Die dosente is uitgenooi om aan die colloquium deel te neem. Die studente is deur Huis Onderstepoort onthaal en dis waar hulle leer rugby speel het! As gevolg hiervan het die algemene gedagte ontstaan om 'n Anatomiese Vereniging van Suidelike Afrika in die lewe te roep.

Prof. de Boom en Drs. Gerneke en Smuts het vanaf 7 - 12 April hierdie 6de Kongres van die Vereniging in Luanda bygewoon.

Maar moenie dink die mense van Angola luier ledig rond nie. Prof. Nuno Grande, Vise-rektor, hoof van die Mediese Fakulteit van die Universiteit van Luanda en nuutverkose President van die Anatomiese Vereniging van Suidelike Afrika is 'n lenige, dinamiese bondel energie. Sy vrou sê hy slaap gemiddeld vier uur snags. Hy het enige jare gelede as arts militêre diens in Angola kom doen. Die moontlikhede en uitdagings van hierdie land het hom só beetgepak, dat hy besluit het om met sy vrou en kinders permanent hulle tentpenne in Angola te kom inslaan.

Dr. Santas Davis is medikus en direkteur van 'n florerende diamantmaatskappy. Hy is Sekretaris-Generaal van die Kongres se plaaslike uitvoerende komitee en lewer 'n besondere interessante referaat oor 'n geval van superfecundasie by die mens.

Dr. Sá Nogueira is dosent in Anatomie aan die Fakulteit van Veeartsenykunde wat tesame met Landbou gesetel is in Nova Lisboa, 640 Km. suidoos van Luanda. Op die oomblik word 150 aspirantveeartse opgelei. Aan die einde van vyf akademiese jare moet elke kandidaat 'n navorsingsprojek aanpak en bevredigend deurvoer voordat hy of sy gradueer. Vreemd vir ons Suid-Afrikaners is die gereelde koerantadvertensies van veeartse. Dit is algemene praktyk vir die sogenaamde liberale professies.

'n Besoek aan die Mediese Fakulteit op Goeie Vrydag-middag is 'n openbaring. Amptelik is dit in die middel van die universiteitsvakansie, maar die disseksiesaal sit vol studente. Seker sestig van hulle. Almal is hard aan die werk vir 'n toets ná die vakansie. Prof. Grande verseker ons dat jy dieselfde aantal werkesels sal aantref om middernag, 365 dae van die jaar! Terloops, die gemiddelde druipsyfer van die Universiteit is 5%. Miskien moet ek darem byvoeg dat 'n student wat meer as eenmaal druip onmiddellik opgeroep word vir drie jaar militêre diens!

Portugese gasvryheid kan alleen in die oortreffende trap beskryf word: Blomme vir die dames as jy kom en as jy gaan: koninklike onthale met garnale of 'n reuse kreef as blote vóórgereg; vergulde uitnodigings (R.S.V.P!) in jou lêer: van die Goewerneur-Generaal en sy gade vir 'n onthaal in die amptelike paleis, 'n dinee deur die rektor en 'n noenmaal deur 'n bekende bank, om maar net 'n paar te noem.

Selfs die aartbiskop het 'n ereplek by die opening van die kongres gehad — troon en al. So ook die Goewerneur-Generaal, Hoof van die Weermag en die Rektor.

Sewe dae is veels te kort om uitspraak oor 'n nuwe land te gee — maar lank genoeg om 'n groot bos proteas te wil lê aan die voet van die standbeeld van Diogo Cao wat in 1482 die eerste Portugese spore diep in die sand van moderne Angola getrap het.

THE LUMP

Professor McGraw has a lump on his jaw:
There won't be a lecture today.
It is said that his sins and numerous gins
Have prevented him having his say.

Such crass allegations are pure defamations,
And have not one atom of truth.
His wife's on the phone and his swollen jawbone,
Has nothing to do with the drouth.

Is it just halitosis? Or blastomycosis?
Ameloblastoma? Or croup?
Whatever the cause of his motionless jaws
Its distressing to stoop or to poop.

Gone is the satire, rhetorical backfire,
Oh where is that exquisite wit?
That elegant frontal is how horizontal
The Prof is confined to his pit.

There's a cloud on the campus, a desolate air,
And the Dean has not even had tea.
The outlook for streaker has never seemed bleaker.
The hell with it! Crumpets for me!

Anonymous.

S.A.V.S.A.

President — Martin Goldberg

The South African Veterinary Students' Association has, this year, acted host to four overseas students — all from West Germany, and what is more, all females!

However we wish to offer thanks to those veterinarians without whose co-operation our scheme for visiting overseas students would surely fall flat.

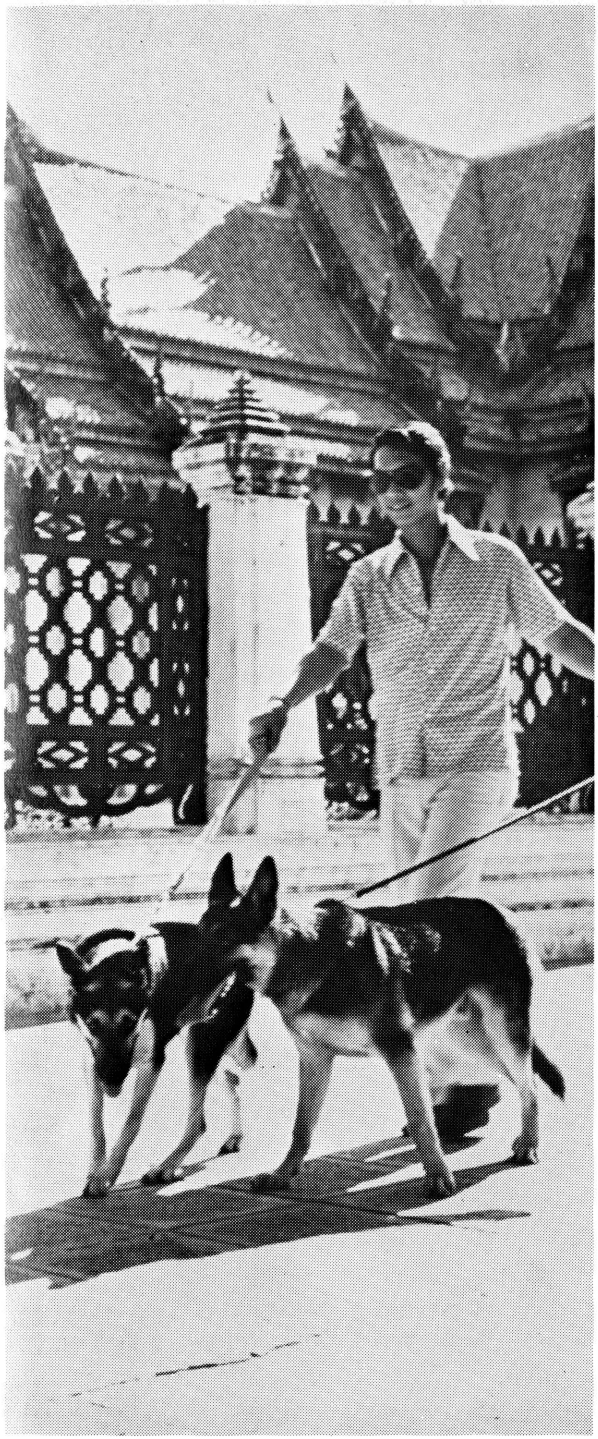
More specifically, thank you:

DURBAN	Dr. J.L. Doré	CAPE TOWN	Dr. O.H. Basson
	Dr. S.J. Downes		Dr. R.W. Hazell
	Dr. V. Amos		Dr. G.T. Futter
	Dr. G. Clow		Dr. A. Smuts
	Dr. B. Baker		Dr. J.P. Kriel
	Dr. J. du Preez		
KROONSTAD	Dr. A. du P. Cuyler	CERES	Dr. M. Thompson
	Dr. J.C. Hendricks		
PORT ELIZABETH	Dr. A. du Plessis	CALEDON	Dr. I. Herbst
	Dr. A. Vlok		Dr. R.A. Wilson
	Dr. G. Burroughs	ESCOURT	Dr. Every
RHODESIA	Dr. H.O. Flanagan		Dr. Turner
	Dr. T. Pritchard		
	Dr. D.L. Wright	HUMANSDORP	Dr. C. Deacon

Our student guests enjoyed their stay in Southern Africa and have without doubt taken back with them very favourable impressions of not only the Veterinery Profession but also the hospitality offered them in the Republic and Rhodesia. One would hope too, that their initiative in coming to a foreign country has been rewarded with a more enlightened attitude towards Southern Africa as a whole.

Every year there are two International Veterinary Student Congresses held at various centres amongst member countries; the so-called Summer Congress in August and the Winter Congress in December. A S.A.V.S.A. representative attends the Winter Congress and if time permits, the Summer Congress as well. The sponsorship for one of these annual trips comes entirely from PFIZER LABORATRIES (PTY.) LTD. Their continued support is greatly appreciated.

The 1974 Summer Congress is to be held from 25th August to 1st September in Copenhagen, and depending on funds available, Paul du Preez may attend this conference.



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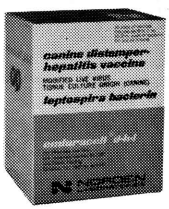

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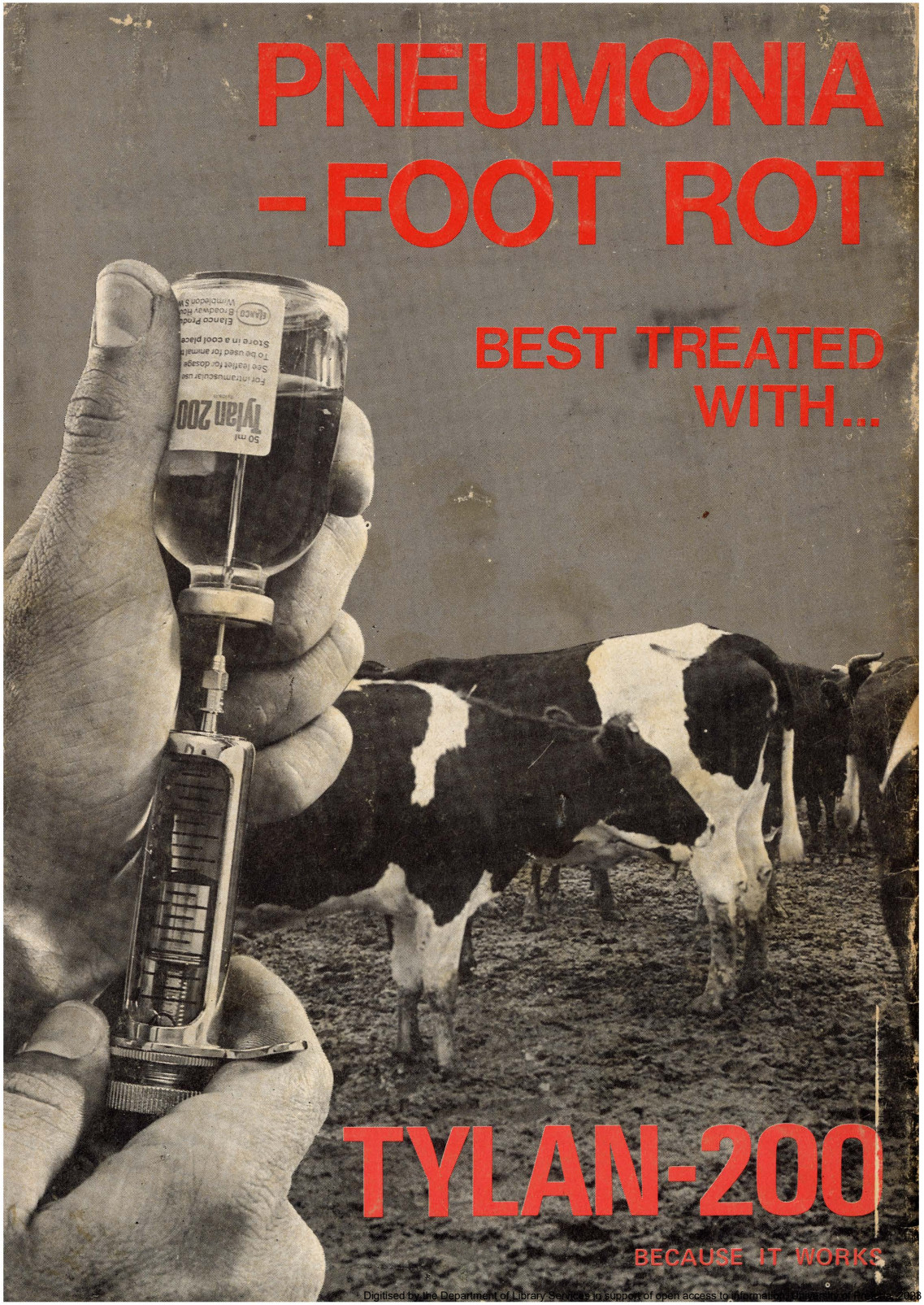

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