THE JOURNAL

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THE SOUTH AFRICAN

VETERINARY MEDICAL

ASSOCIATION

CONGRESS NUMBER

KONGRES UITGAWE

TYDSKRIF

VAN

DIE SUID-AFRIKAANSE

VETERINÊR-MEDIESE

VERENIGING

Dr. and Mrs. Verwoerd and Dr. and Mrs. Steyn being welcomed by Prof. Jansen.

The 1963 Congress of the Association.

Sy Edele Dr. Verwoerd en Professor B. C. Jansen.

Die President van die Vereniging en mev. Steyn word deur die Burgemeester en mev. van der Walt by die skemerkelkie onthaal.

Sy Edele Dr. Verwoerd word deur die Hoof van die Navorsingsinstituut vir Veeartsenykunde by die Kongres verwelkom.

EDITORIAL

CONGRESS

Congress was again held at Onderstepoort this year.

From the time of Union in 1910, Onderstepoort has been the main venue for the Scientific programme associated with the Annual Meetings. In the days of the Transvaal Veterinary Medical Association, and after its amalgamation with the other Provincial Veterinary Associations in 1920, the only departure from this practice was to hold an occasional Annual Meeting at Johannesburg to coincide with the Witwatersrand Agricultural Show.

In 1961 a further departure to this practice was occasioned when Congress was held at Durban.

Next year it is to be held at Cape Town and it is trusted that the President's desire for the 1964 Congress to be well attended, will be generously supported.

Onderstepoort is unquestionably the venue of choice, although the Association undoubtedly makes new friends when it holds a Congress in a large centre, in another part of the country.

It is hoped that the building programme soon to be put into effect at Onderstepoort, will further encourage and substantiate its reputation as the paramount centre of veterinary endeavour and a most desirable place for Congress to be held.

The special feature of Congress this year was its opening by the Hon. Dr. H. F. Verwoerd, Prime Minister of the Republic.

This is the second occasion within eight years, that the Association has enjoyed the privilege of having its Congress opened by a Prime Minister. In 1955, on the occasion of the fiftieth anniversiry of the South African Veterinary Medical Association, Congress was opened by the late Advocate J. G. Strydom, then Prime Minister of South Africa.

The Scientific programme this year offered a variety of interests and was indeed well received. The Congress committee should feel satisfied with its endeavours.

The practice of publishing the papers in the Journal, in advance of Congress, has much to comment it, but some members have contended that greater benefits will result, if summaries of fully prepared contributions are circulated to members in advance, and the authors given the opportunity of amending their original papers in the light of information disclosed at discussions.

This is certainly a thought which the Congress Committee could justifiably consider, when planning the 1964 Congress.

The social events were well received and the suggestion made at the 58th. Annual General Meeting that the fees levied to meet the expenses of Congress, should be reviewed could elininate further criticism in this regard.

The A.G.M. itself proved less contentious than one is accustomed to, and the President and Vice-President are to be congratulated on the undoubted quality of their chairmanship.

The thanks of the Association are once more due to the firms who exhibited at Congress, both in their individual capacities and as members of the Medical Exhibitors Association. The thanks of Congress to the chairman and secretary of the M.E.A. are offered without reserve.

A record number of exhibitors displayed their preparations and offered their courteous advice to members and visitors.

Congress was indeed fortunate to benefit from the arrangements made by the Trustees of the Veterinary Faculty Fund in staging the first Theiler Memorial lecture, while it was in session. The thanks of Congress are extended to the Trustees of the Fund for their considerate action.

A number of Veterinary and Medical V.I.P.'s attended Congress and it is trusted that this happy state of affairs will be repeated each year.

The ceremony arranged by Council, ably directed by the President, and faultlessly augmented by the Chief of the Veterinary Research Institute, to present the title of Honourary Life President to the Hon. Mr. P. M. K. le Roux, Minister of Agricultural Technical Services, was most impressive.

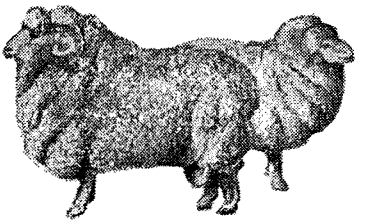
The thanks of Congress is extended to the President for the part he played in initiating this ceremony as well as his action in gaining acceptance by the Prime Minister to open Congress.

The impressive address by the Prime Minister and in particular the concluding part of it, is likely to be remembered by Congress for many years. It is fitting to repeat it here:—

„En wanneer ek u Kongres open, dan is dit met die seënwens en met die uitspreek van die hoop dat u taak in die toekoms steeds groter en groter sal groei; nie in die sin dat u te doen sal kry met meer siekteverskynsels nie, maar in die sin dat u meer en meer in staat sal wees om daaroor beheer uit te oefen, deur die omvang van u kennis en die erns van u arbeid."

Congress Extends its profound appreciation to all who have contributed to its success.

To those interested in veterinary economics and veterinary politics, the Presidential address, and the digest by Prof. de Boom of the Symposium on The Changing role of the Veterinarian in the Modern World appearing in this issue are commendable.



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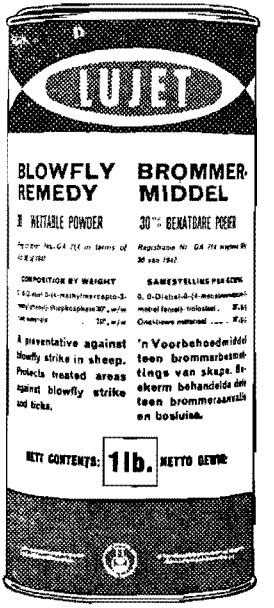

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ANNUAL SCIENTIFIC CONGRESS AND FIFTY-EIGHTH ANNUAL GENERAL MEETING HELD AT ONDERSTEPOORT FROM 24–27 SEPTEMBER 1963

The Annual Scientific Congress and Fifty-Eighth Annual General Meeting of the South African Veterinary Medical Association was held in the Auditorium of the Faculty Building, Onderstepoort from 24 to 27 September 1963.

THE OPENING CEREMONY

Prof. B. C. Jansen, Chief of the Veterinary Research Institute, welcomed the guests and delegates.

The Hon. the Prime Minister, Dr. H. F. Verwoerd, addressing the 1963 Congress while the President of the Association, Dr. H. P. Steyn, listens.

The Hon. Dr. H. F. Verwoerd, Prime Minister of the Republic of South Africa opened the Congress.

PROF. B. C. JANSEN VERWELKOM GASTE EN AFGEVAARDIGDES

Prof. Jansen verduidelik dat die Agt-en-vyftigste Kongres maar een van 'n reeks jaarlikse byeenkomste is waar wesenlike probleme van die land deeglik behandel word. Sommige van die probleme word deur middel van simposia bespreek. Hierdie samekoms van intense belange sluit in navorsers, veld en munisipale personeel, belanghebbers by veeartsenykundige opleiding, privaat praktisyns, belangbhebers by dierevoeding en andere kommersiële ondernemings, en by verskeidenheid veeartsenykundige werksaamhede, mediesenavorsing en so meer. Almal behou die regte perspektief.

Die veeartse van Suid-Afrika is nog steeds pioniers; waar nodig word hul dienste dag en nag aangebied om die land se probleme te voorkom.

Hulle soek nie openbare erkenning nie en sal voortgaan met die geesdrif wat deur Sy Edele die Eerste Minister se openingstoespraak vir hulle aanmoedig, en deur Sy Edele die Minister van Landbou Tegniese Dienste se belangstelling in hul werksaamhede.

The year 1963 marks the centennial of the World Veterinary Congress and in honour of this occasion it has been proclaimed ANIMAL HEALTH YEAR, in support of the FREEDOM FROM HUNGER CAMPAIGN of the Food and Agricultural Organization.

The vital role played by the animal population in the lives of the people of South Africa is fully appreciated by the veterinary profession.

Dr. Jansen extended a warm welcome to all persons and in particular to the very distinguished guests — the Hon. Dr. H. F. Verwoerd and Mrs. Verwoerd, the Hon. Mr. P. M. K. le Roux and Mrs. le Roux, his Worship the Mayor Prof. van der Walt and Mrs. van der Walt. He welcomed the representatives of the adjoining territories, the Staff of the Department of Agricultural Technical Services, the Curator of the National Parks Board of Trustees Mr. Rocco Knobel, the representatives of the Medical, Dental, and Pharmaceutical professions, and of the Pharmacy Board, the chief of the Council for Scientific and Industrial Research, and the Director of the Institute for Medical Research.

Dr. Jansen extended a very special welcome to Dr. Sabin, who had attained great distinction through his work on the preparation of the latest live attenvated poliomyelitis vaccine. He hoped everyone would enjoy the papers which would be presented.

DIE KONGRES WORD DEUR SY EDELE DR. H. F. VERWOERD, EERSTE MINISTER VAN DIE REPUBLIEK GEOPEN

Sy Edele wonder waarom hy uitgesoek is om met die veeartse hul Kongres te vier. Is dit omdat hy 'n seun het wie 'n veearts is; of is dit omdat hy 'n tjekboekboer was, wie af en toe van sy bestuurder 'n brief ontvang het, met 'n rekening en 'n afkondiging dat die veearts daar was maar die koei is dood; of is dit omdat hy so min van veearsenykunde af weet dat hy met die professie nog goed bevriend is?

Sy Edele verwys na die hulde wat aan die veeartseny professie gebring is met die bestryding van siektes soos rinderpest, bek en klouseer en ander

ernstige veesiektes. Wanneer sulke rampe die land tref word redders gesoek. Navorsers en veldwerkers kry dan die geleentheid om die betekenis van hul beroep te verklaar. Suid-Afrika het betreklik min gespesialiseerde werkers om sy reeks besondere probleme op te los.

Sy Edele Dr. H. F. Verwoerd open die Agt-en-Vyfstige Jaarkongres van die Vereniging.

Daar bestaan 'n relatiewe wanverhouding tussen die getal veeartse en die veebevolking van die land. Miskien is ons vee in die algemeen baie gesond of hulle behou hulle gesondheid beter met die minimum van veeartse. Die baie terreine wat hierdie klein volkie moet dien is 'n oortuiging van sy standvastigheid. Die tekort aan opgeleide personeel mag binne aansienbare tyd oorwin word. Wat veeartsenykunde betref word die oorwinning behaal deur die deeglike werk wat die Instituut lewer. In samewerking met die boere kan baie vordering gemaak word en kan kontak tussen die geleerdes en die leke verbeterings aanbring.

The Hon. Dr. Verwoerd regarded it as a great pleasure to be with the veterinarians and to pay tribute to the Onderstepoort Institute which was a world renowned Veterinary Research Centre. A great deal of work had been done but there was still much to do.

It was encourageing to see the expansion of research endeavours through the development of regional diagnostic centres. Research could afford to extend throughout Africa as so many problems were common to the Continent as a whole.

It was a pity that the developing African States had decided not to take advantage of the experience which South Africa had.

They had not felt it worthwhile to make use of us. This was a great pity as we have always been willing to share our knowledge with those who were less fortunate.

The time had come when we would only disclose information if we were asked to do so. We had been prevented from sending our experts to conferences in Africa, and our vaccines to benefit the development of these States. Times would change and it may be that the other States of Africa would be happy, and perhaps proud, to renew our acquaintance. We would not be found wanting nor unwilling to do so.

Sy Edele herhaal dat hy hulde aan die veearts beroep probeer bring het, daar hul strewe arbeidwaardig is.

Hy het 'n paar gedagtes vir die toekoms by die navorsingsinstituut gelaat. Die veeartse durf nie hul navorsing laat agterbly nie. Die roem van die veeartse in die veld is gebou op die vordering van navorsing by die Instituut. Dit is van uiterste belang dat dit voortgesit word om die siektes wat agter gebly het te beheer, en om die wat die land nog mag binnekom, te bekamp. Die regering sal alles in sy vermoe doen om hulp te verleen maar op ander terreine word ook sorg van die regering geeis. 'n Nuwe Instituut vir bek- en klouseer navorsing is toegestaan. Die veldwerk sal ook hierby baat.

Lokale navorsingswerk is van veel waarde en sal die veearts in die praktyk baie help.

Daar is 'n behoefte vir meer veeartse maar daar is ook die nodigheid om landbounavorsing as 'n geheel aan te help.

As dit vervulbaar is sal die bestryding van veesiektes nog verder aandag geniet; maar ongelukkig moet die regering sy aandag aan almal verleen, wat met ontwikkeling van die land te doen het.

Die verdere uitbreiding van die Navorsingsinstituut vir Veeartsenykunde mag dus tydelik sy benodighede as voldoende beskou.

Hy weet hy trap moontlik op iemand se tone maar die regering moet vir almal sorg. Die mediese meen dat hulle nog 'n fakulteit behoort te kry. Die vraag kom op, wie voorkeur moet kry. Die regering sal die taak van die veearts nie vergeet nie.

Sy Edele het sy toespraak met die volgende woorde afgesluit:—

„Ons wil nie as 'n regering suinig wees in verband met ons steun nie; in elk geval nie meer suinig as met die ander beroepe nie want ons besef die betekenims van ons landbou industrieë in ons land, en ons besef die betekenis van die diere faktor in ons industrieë. Dit bring van die vernaamste voedselsoorte vir die onderhoud van die mens; dit bring ook die grondstowwe vir nywerhede wat van groot belang is.

Dit is ook 'n bedryf wat vir ons valuta verdien oorsee, op 'n enorme skaal. Omdat u diensbaar is binne die terrein van hierdie belangrike grondliggende bedryf van ons land, daarom kan u weet dat u ons voortdurende belangstelling nie alleen het nie, maar ook ons voortdurende aandag. Ek wil afsluit om te sê dat ek met baie belangstelling geluister het na die leidende woorde van Prof. Jansen en dat dit 'n indruk op 'n mens maak wanneer jy sien met watter geesdrif die taak benader word.

Dat dit die navorser hoek is wat die aandag, nie alleen het nie, maar dat dit die navorser hoek is wat ook hier voorgelê word, as die eindelike taak van die Kongres van u vereniging; nie net van studente en dosente nie maar ook van praktisyns; met ander woorde dat dit die idealistiese is wat op die voorgrond is, en nie die verdiengemak nie; dat dit nie die materiële maar die geestelike is wat u op die voorgrond hier stel, en dat u sê dat u u eie Kongresse organiseer, nie om te kyk hoe om die professie materieel voor te help nie, maar hoe u daarvan dink om juis deur simposia en anders, dieper deur te dring tot die geheimenisse waarvan u die kennis wil hê, beide vir u eie ontwil en vir die praktyk; en dit is dan ook die regte benadering.

En wanneer ek u Kongres open, dan is dit met die seënwens en met die uitspreek van die hoop, dat u taak in die toekoms steeds groter en groter sal groei, nie in die sin dat u te doene sal kry met meer en meer siekteverskynsels nie, maar in die sin dat u meer en meer in staat sal wees om daaroor beheer uit te oefen, deur die omvang van u kennis en die erns van u arbeid".

DIE PRESIDENT VAN DIE VERENIGING DR. H. P. STEYN BEDANK SY EDELE DR. VERWOERD

Dr. Steyn het onder andere Sy Edele Die Eerste Minister met die volgende woorde bedank:—

„Ek wil u Edele bedank vir die gedagtes wat u aan ons oorgedra het. Dit is gedagtes wat ons in die afgelope jare terdeë aandag op geskenk het. U is in 'n beter posisie om te beoordeel waar die grootste tekort in tegniese in die land is, maar ek wil sê dat ons nie kan verwag om ons taak beter te vervul deur meer kennis nie. Ek dink u Edele, dat daar is in die verlede deur veeartse in Suid-Afrika, meer gelewer dan wat verwag kon word of verwag was van veeartse in ander dele van die land. Die boer self gaan nie in staat wees om sy bedryf te behartig sonder die hulp van 'n hele trop tegniese waar, onder wie veeartse 'n baie belangrike rol gaan speel. Ek aanvaar u opinie sonder enige voorbehoud dat dit op die huidige oomblik onmoontlik is om meer veeartse op te lei, maar ek voel dat as 'n verteenwoordiger van 'n professie wat terdeë sy verantwoordelikhede besef en waarvan die eerste leus feitlik is, ons is tot diens van die mens, nie tot diens van ons self nie."

TOEKENNING VAN SY EDELE MNR. P. M. K. LE ROUX AS LEWENSLANGE EREPRESIDENT VAN DIE SUID-AFRIKAANSE VETERINER-MEDIESE VERENIGING

PROF. B. C. JANSEL STEL MNR. LE ROUX AAN DIE PRESIDENT EN LEDE VAN DIE VERENIGING VOOR

PROF. JANSEN

"Geagte mnr. die President, mnr. die Eerste Minister, mnr. le Roux, mnr. die Burgemeester, dames en here:

Die konstitusie van die Suid-Afrikaanse Veterinêr-Mediese Vereniging maak voorsiening vir die toekenning van Lewenslange Erepresident; maar in die vyftigjare bestaan van ons vereniging het hierdie unieke onderskeiding nog nooit iemand te beurt geval nie.

Ons is nou egter, as Raad van die Vereniging, en as indiwiduele lede van die Vereniging, gekonfronteer met die feit dat ons 'n persoon het wat hom deur en deur bewys het as waardig van hierdie posisie van Lewenslange Erepresident.

Met die paar inleidende woorde mnr. die Minister van Landbou-Tegniese Dienste, sal u my toelaat om 'n paar woorde direk aan u te spreek in hierdie verband:

PIETER MATTHEUS KRUGER LE ROUX

Pieter Mattheus Kruger le Roux is op 11 November 1904 op die plaas Doornkraal, De Rust, in die distrik Oudtshoorn gebore. Skoolopleiding het hy eers op De Rust ontvang, waarna hy die Hoërskool Outeniekwa te George besoek en aldaar gematrikuleer het, alvorens hy aan die Universiteit Stellenbosch gaan studeer het.

Hy het hom vervolgens op die ouerlike plaas Doornkraal op boerdery toegelê. In die harde en mededingende leerskool het sy praktiese sin en oordeelvermoë hom 'n vooraanstaande posisie in die gemeenskap besorg, en was hy 'n direkteur van verskeie kooperatiewe en private maatskappye. In Mei 1958 is hy benoem tot Minister van Landbou, 'n portefeulje wat in 1959 na die van Landbou-Tegniese Dienste en Waterwese omskep is.

Gedurende sy ampstermyn as Minister van Landbou, en daarna as Minister van Landbou-Tegniese Dienste, het mnr. le Roux 'n buitengewone belangstelling in, en waardering vir, die waarde en omvang van die bydraes van die veeartsenykundige beroep tot die welvaart van die dierenywerheid in Suid-Afrika, getoon. Sy diepgaande insig in die vereistes wat aan veeartsenykundige diens gestel word, sy skerpsinnige oordeel oor die verbeterings wat aangebring moet word, en sy heldere begrip van dieresiektebeheer, het hul uitwerking daadwerklik getoon, en is ook in sy toesprake in die Volksraad weerspieël. Onder sy leierskap is die Veeartswysigingswetsontwerp deur Volksraad en Senaat geloods, en as Wet nr. 49 van 1963 op die Wetboek geplaas.

Sy aanspoiende belangstelling in die onlangse herorganisasie van die Afdeling Veeartsenydiens, in veeartsenykundige opleiding, en in die prestasies van indiwiduele diereartse, dien as verdere bewys van die mate waarin hy bevordering van dieregesondheid en vooruitgang van die dierenywerheid, onderskraag het. Met die loop van jare het mnr. le Roux van elke geleentheid gebruik gemaak om die veeartsenykundige beroep by te staan, teneinde sy potensiaal ten goede te laat ontplooi, om sy regmatige plek as voogde oor dierewelvaart in Suid-Afrika te laat inneem, en om sy lede aan te wakker tot indiwiduele bydraes tot hierdie gesamentlike poging."

„Geagte mnr. die Eerste Minister ek wil dus op hierdie geleentheid ons President versoek om 'n Rol met die paslike inskripsie daarop, as teken van die oordraging en toekenning van Lewenslange Erepresidentskap aan Sy Edele Minister mnr. P. M. K. le Roux toe te ken; asseblief."

SY EDELE MNR. P. M. K. LE ROUX NEEM DIE TOEKENNING AAN.

SY EDELE MNR. P. M. K. LE ROUX

„Ek wil dit net eers graag wys—so lyk dit.

Sy Edele mnr. P. M. K. le Roux wys die Rol van Lewenslange Erepresident wat aan hom oorhandig is.

Mnr. die President, Edele dr. Verwoerd, vriende en vriendinne. Toe Prof. Jansen so kort en bondig so 'n hulde hede oor my gehou

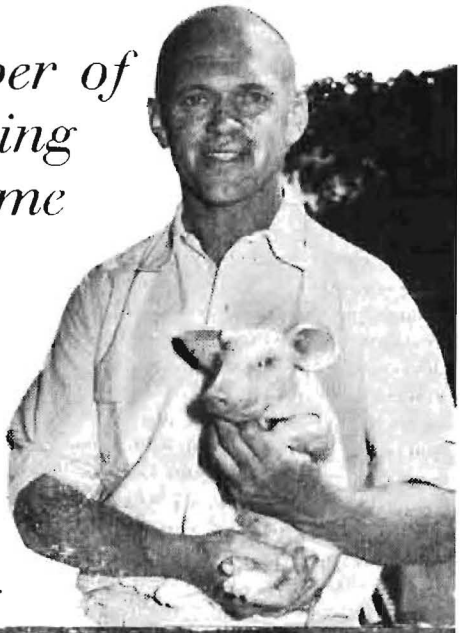
het, toe het ek onmiddellik gedink aan die storie van die kleurling man en vrou—ek sal dit in Engels vertel.

A coloured man and woman who had lived together, not so very happily, for quite a number of years and had at least one child, decided that they would part. The father went to live in a neighbouring town while the mother and child stayed on at the farm where they lived while they were still living together. This young boy was about 5 years old when his mother received the news that his father had passed away and that the funeral would be held at some or other place in the neighbourhood, on a Saturday afternoon. She took the child by the hand and said "After all he was your father and I think we must attend the funeral". They arrived a little late to find that there was more than one funeral ceremony. She thought the one she attended might be that of her late husband. While the missionery was speaking about the life of this man who had passed away and what a good example he was when alive and what a good man he was, she thought to herself that there must be some mistake and that she was at the wrong funeral. "Listen boy" she said, "We had better leave this place because we are at the wrong funeral."

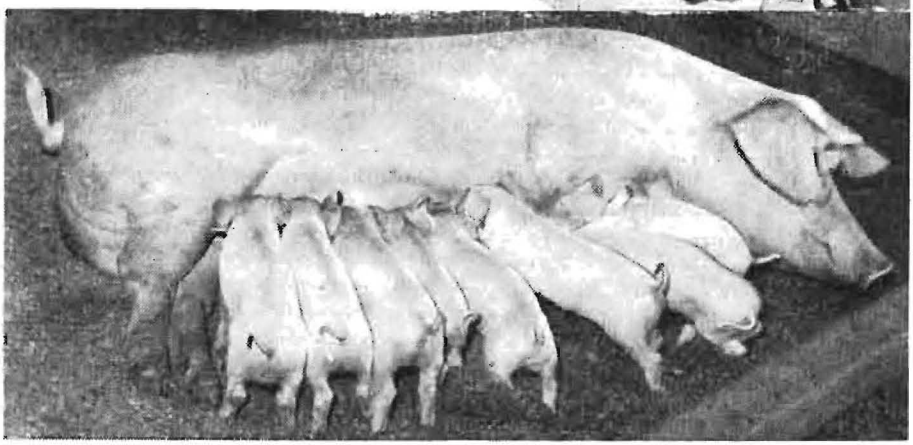
Ek het nou eerlikwaar gedink hierdie huldeblyk, en die eer wat aan my gedoen word om Lewenslange Erepresident van so 'n besonder en uitstaande en vername vereniging te word, is miskien nie goed gekies nie. Ek verdien dit in allegeval nie. Maar mnr. die President, ek waardeer dit verskriklik baie. Miskien is dit nou 'n geval soos dr. Verwoerd gesê het, dat ook u vereniging vriende moet soek om u by te staan, en daarby leke op u fakgebied. As dit 'n bydrae sal maak, en ek is oortuig dit sal, om van my nog 'n groter vriend te maak van hierdie beroep, hierdie professie van u, dan sal dit my alleen plesier gee".

Die President dr. Steyn sê nogmaals dankie aan sy Edele dr. Verwoerd en aan Sy Edele mnr. P. M. K. le Roux en die seremonie is afgesluit.

Prominent member of S.A. Sow Recording and Health Scheme thanks IMPOSIL for a gain of one extra pig per litter!



Mr. K. Janovsky, who has farmed at Hennops River, Pretoria District since 1942.



For many years Mr. K. Janovsky has studied ways of increasing piglet production. When he discovered that his piglets were suffering from an iron deficiency he used ferrous sulphate solution, given per oral route, twice weekly. He continued to weigh his pigs every week and keep accurate records of the litters produced by his herd of 38 registered South African Landrace sows sired by boars of the same breed. Over a control of 22 litters using sporadic dosing of ferrous sulphate solution, the average weight at weaning was 23.95 lbs., and the average number of piglets per litter was 7.35.

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THE PRESIDENTIAL ADDRESS

The Hon. Prime Minister, The Hon. Minister of Agricultural Technical Services, Ladies and Gentlemen.

The past year has been one of extraordinary significance to our profession and we are particularly gratified that you should be present with us today when we acknowledge an advance which to us is by way of being a mile stone in our progress. I refer, of course, to the amendments to the Veterinary Act.

The President, Dr. H. P. Steyn, delivers his address.

You may wonder at our extreme satisfaction, or I may even say our jubilance at this achievement, but when I tell you that we in the veterinary profession have become accustomed to advances in short sharp rushes which seem to come at intervals of 30–40 years, you no doubt will appreciate our feelings the better. It took approximately 30 years from the foundation of the first Veterinary Association in this country before the first Veterinary Act came about in 1933. It took another 30 years before this Act was first amended, but we are delighted with these amendments, because I believe South Africa may now be one of the leaders, if not the leader, in protective veterinary legislation; and this proves that the value of the veterinary profession is well appreciated by the authorities and by the public generally.

This is a considerable achievement, but you Sir, as well as your colleague the Hon. Mr. Le Roux, will realise better than any of us that delaying good legislation too long may have serious consequences. This has been the case with us, but we believe that the position is not irretrievable.

The present Veterinary Faculty was founded in 1920. It was, I think, 1958 before there was any major reorganization brought about in that Faculty. Another span of 38 years.

It is clear that the state of veterinary affairs of our country is pregnant with possibilities, but the gestation periods seem to know no bounds, and they are extremely painful.

There is another aspect of procrastination in planning for the future development to which I wish to pay special attention today, that is delay in planning for the training of adequate numbers of veterinarians for the future.

Let me hasten to emphasize that the arrangements made for accepting 45 students per year at Onderstepoort has our unreserved support. There has been a rumour prevalent that Mr. le Roux said during the debate on the amendments to the Veterinary Act that Onderstepoort could take up to 75 students per year. I have not been able to find this statement in Hansard and I hope Sir, that this was not said, because it would be rather a tragedy if that were to happen. We shall return to this aspect later.

As you all know this year is the centenary of the first International Veterinary Congress. The object of celebrating this centenary has been chiefly to focus attention upon the freedom from hunger campaign which has been organized by W.H.O. and F.A.O. Many of you may not appreciate that the increase in the world's population for the last year for which figures are available was 61 million. In addition it has been estimated that 10 to 15 per cent of the world's population suffers from hunger and starvation. This 10 to 15 per cent means 300 to 500 million souls who are seriously underfed or starving.

This problem of under feeding; not to mention malnutrition from unbalanced feeds, is with us in South Africa and we must therefore pay attention to the problem from our own national point of view as well as from the more universal humanitarian approach.

The first symposium on our scientific agenda which is titled "*The Changing Role of the Veterinarian in the Modern World*", is an effort to

direct the thoughts of the profession to planning for the future, or to visualize what will be required of the veterinarian of the future.

There is one contribution to this symposium which I believe deserves special mention. It is the article by I. van Schalkwyk, in which he endeavours to emphasize the need for the industrialised production of livestock. The need for maximum efficiency in production and marketing would appear to be the main hope of stepping up production because the area available for production is becoming saturated and more and more limited.

In stepping up livestock production, as in crop production, collaboration between a number of specialists is necessary. There is a need for the veterinarian and the animal husbandryman. Furthermore both these groups require men who specialize within the sphere of each particular group. To attain best results these people all need to work in the closest possible collaboration. There is no justification for endeavouring to encroach upon each others fields.

In this respect one therefore appreciates the reorganization which has been brought about in the Department of Agricultural Technical Services in which an earnest endeavour is made to ensure just that degree of collaboration which is essential to the most efficient results.

There are, and always will be, instances of unjustified encroachment, but as the new administration in this department gets into its stride it is to be expected that the wastage involved in energy and money when people venture into spheres for which they are not adequately trained, will be almost entirely eliminated.

If the veterinarian fulfills an important function in society, and one must accept that this is generally felt and unstintingly acknowledged, then there are two prerequisities that must be satisfied. These are that a *sufficient number* of veterinarians are *properly trained* to carry out the duties which are expected of them.

Why do we persist in asking that more veterinarians should be trained? After all it would be much easier for a limited number of us to find adequate employment if we simply remained silent and allowed events to take their course. We aks for this because we sincerely believe that our profession is dedicated to the service of humanity. We believe that inadequate veterinary services must detrimentally affect the production of food and fibres from animals. There is another sphere in which we may be able to make a very significant contribution viz pisciculture. We also believe that anything which might adversely affect the quality of the training of veterinarians would cause serious retrogression.

I must pay tribute to the Minister of Agricultural Technical Services for what has been done in his usual energetic manner during the last few years, but when we remember that the corrective steps for training more veterinarians were adopted fifteen to twenty years too late we realise that we are now starting off at a point where that time lag has to be over taken before any real progress can be expected.

Some very interesting facts emerge from a study by the FAO/WHO Expert Panel on Veterinary Education. The first of these is that South Africa can only be classified as a developing country from the point of view of the availability of veterinarians. Their standards of comparison

are admittedly arbitrary and they admit as much. Their difficulty was that they could find no standards on which recommendations could be made. To base the standard simply upon the total number of livestock units in a country, without having given due consideration to the value of the stock and the cost of providing the services, is to say the least, irrational. Yet the only basis of comparison available to this Panel was the total number of livestock units as compared to the total number of veterinarians per country. We show up very badly in this comparison.

There are other considerations to be borne in mind such as farming methods, auxiliary services, spheres of veterinary activity in relation to public health and the animal industry, and the prevalence of disease etc.

However, despite the lack of information about all these relevant factors, countries such as the U.S.A. and the U.K. complain that they are suffering from a shortage of veterinarians. According to this Expert Panel the U.S.A. has one veterinarian per 4,900 livestock units and the U.K. one per 3,300 livestock units. We have approximately one veterinarian per 31,000 cattle and sheep units alone i.e. disregarding horses, pigs, poultry and goats, and taking cattle as 0.8 and sheep as 0.1 unit. In addition we have more disease than the older countries.

It will be argued, and justifiably so, that our veterinary profession, in spite of its limited numbers, has rendered outstanding service by bringing under control all the dangerous infectious diseases.

This was a magnificent achievement and I would not endeavour to detract one iota from the status of the men who carried it through. In fact I was a humble member of this body of men for nearly 13 years and I believe that even I made a small contribution to the work in hand.

There was, however a reason for this success, and remember that a very major contribution to this work came from men who had adopted South Africa as their home. They were men trained in Britain and Europe.

Would we now claim that only South African veterinarians, whether South African by birth or adoption, could have carried out this apparently herculean task? Do we breed a special type of superman veterinarian in this country? If not, surely we must accept that veterinarians in other countries can do as much as we are capable of doing; and they find that in spite of their relatively large numbers they too are suffering from a short- By the same token our shortage must be so much more acute.

I said there was a reason for being able to get dangerous infectious diseases under control. It is that these diseases are specific entities against which vaccines could be produced, or which could be controlled by isolation and eradication. Recognition, once these diseases had been identified, was comparatively easy.

The veterinary problem today is a much more insidious one; research techniques have become much more involved because the problems needing elucidation are often very obscure. Control of stock losses and the prevention of the ravages of the erosion diseases and malnutrition, have become a major undertaking for field services. A brief insight into these problems will be presented to this meeting during the course of the symposium mentioned earlier.

It is therefore reasonable to say that although a small number of veterinarians were able to cope with our most pressing disease problems

during the past fifty years, that is no argument against the claim that a very considerable increase in the number of veterinarians is necessary.

Various estimates of the number of veterinarians needed have been made in the past, but they are all more or less arbitrary.

During the existance of our single veterinary faculty there have been two or three new medical and two or three new agricultural faculties established, there being five and four of these respectively now. Why should the veterinary profession be the cinderella profession in a primarily animal producing country?

Why have veterinary services and veterinary education not developed parallel to the increase in the value of the livestock industry in this country?

A great deal has been done in recent years and we fully appreciate the efforts which have been made to rectify the position, but when I say that a second veterinary faculty is an urgent necessity I say so knowing full well that should this be accepted in principle almost immediately, it would take at least ten years before the first graduate would pass out of the doors of that faculty, and another ten years thereafter before it could reach peak efficiency. I am thoroughly aware of the difficulties inherent in the establishment of a second faculty, the greatest of which may be finding the necessary staff. However, with the increased teaching staff being trained at Onderstepoort now, and the inevitable time-lag before a second faculty can be established, there should be enough men available to draw upon when a second faculty becomes available.

What is more, one wonders how valid the argument is that there are not enough experienced men available to establish a second faculty. Must an alleged shortage of personnel be the final blockade to progress? How many men have been appointed as professors and lecturers at Onderstepoort without any previous teaching experience; yet this has not materially reduced the standard of training of undergraduates. These inexperienced teachers have acquited themselves well and soon acquired the necessary experience.

An argument which cannot be adequately countered is that we have no accurate idea of the actual shortage in numbers. It would be impossible to make a reliable estimate without a thorough investigation of all the factors mentioned earlier; more especially as conditions have changed and will continue to change rapidly.

Similarly we have the burning question as to how many students should be admitted annually to any single faculty. The Expert Panel previously referred to recommends that *not more* than thirty is the ideal number, if training is not to be detrimentally affected. A Committee sitting in London the previous year recommenced *not more* than forty.

The number would vary according to available facilities and clinical material, but should these be optimal adequate clinical training is dependent upon individual attention to undergraduates; and in large classes this becomes impossible. One of the main limiting factors at Onderstepoort, remains, in spite of contradictions, the inadequacy of clinical material; and Onderstepoort is being overcrowded with undergraduates.

The economics of veterinary services in this country are extremely obscure. Without an adequate investigation it would be difficult or impossible to express a reliable opinion. In the U.S.A., in spite of its ter-

mendous expenditure on veterinary education, research and its high ratio of veterinarians to livestock, Dr. Edens told us some years ago, that for every dollar spent on veterinary services a profit of five dollars was shown. This was established, he said, by an investigation. The eradication of tuberculosis in certain overseas countries is claimed to have increased profits from tuberculosis-free herds by 10–25 per cent. Figures quoted by Kleeberg in the latest Journal of our Association indicate that the U.S.A. spent $326 million on the eradication of tuberculosis, but the savings resulting therefrom are now estimated at $150 million per annum. This campaign was started in 1917 and the expenditure was spread over many years.

In this country we know from personal experience what dividends have accrued from the money invested in veterinary services, but because those dividends are high we seem to be inclined to feel that we have done well enough. Perhaps we have, but how much better could we not do in future by planning now for the expansion in veterinary services which is obviously necessary.

The emergency measures which have been taken to remedy the deplorable state into which veterinary services was sinking, are wise and sound. It would be wrong suddenly to flood the country with too many veterinarians, because adaptation is necessary in absorbing fairly large numbers of new graduates, but the steps taken can only relieve a critical situation very slowly; and with the increasing demand for veterinarians in a variety of spheres, it does not seem likely that any great improvement in the availability of personnel is likely to occur for 10 or 15 years, if at all.

It is therefore necessary to plan now for extended training facilities.

If we could persuade the authorities concerned to accept in principle, the need for a second faculty, and to select the site at which this faculty will be established, I have good reason to believe that a very large sum of money would soon be subscribed by the public to assist in financing the establishment of the faculty; for there is no doubt that a large body of progressive and wealthy farmers are fully aware of this need. The farmers of the Winter Rainfall area have clearly demonstrated this.

I would like to promise Mr. le Roux that once we have more veterinarians we will be able to give him a great deal more help and sound advice for his ostrich farming. In fact the ostrich industry is of so much importance at present that it deserves more attention from my profession. However, should the Hon. Minister decide to ask me personally for advice about his ostriches, I must warn him that there are far too few veterinarians available for me to be able to answer his questions.

Recently I paid a very short visit to the Cape and took the opportunity of interviewing a few important people. The only doubt which was expressed in regard to a second faculty was: Would there be sufficient candidates available for the faculty?

As it happens an analysis of the origin of the students who enter the present faculty was carried out some years ago. This revealed the interesting fact that an overwhelming majority of these young men came from the Transvaal, and that of the entrants from the Transvaal the highest proportion in relation to population came from Pretoria, and the next highest from Johannesburg.

This would indicate that the establishment of a second faculty would draw recruits from the immediate neighbourhood of the new faculty.

Should there however be a dearth of applicants for the veterinary course, the remedy would be a simple one viz. to see that the salaries offered are adequate. About this we have no complaint at the moment except perhaps in one instance and that is in Public Health. There are veterinarians employed in Public Health work who are paid a much lower salary than other people doing comparable work. This is not conducive to veterinarians applying freely for this type of work and must be rectified. The result has been that certain large municipalities have not been able to obtain the applicants they require to fill vacant posts. In this and other avenues of employment we do not ask for more than is given to people doing comparable work; but why should we be satisfied with less?

The advantages to be gained from a second faculty are really too numerous to be listed in a short address. Let it suffice to say that I cannot see any real disadvantages.

I know that the Minister for Agricultural Technical Services has said that there is no need for a second faculty. Some times he has said there is no immediate need, and there I must agree with him if that means next year, but the basis of my argument is that even should the need now be accepted in principle, there is no prospect of the idea coming to fruition for 8–10 years.

Sometimes the Minister has said that there will be no need in the forseeable future. Here I regret that I very emphatically disagree. Naturally I must grant that the meaning of the phrase foreseeable future is extremely elastic. My optician tells me that I am long sighted, but even allowing for this, my "foreseeable future" does not span more than 2–3 years ahead and that in my humble opinion, Sir, is too long by far, to wait before some tangible step is taken in the direction of either thoroughly investigating the veterinary needs of this country, or giving official approval for the establishment in principle of a new faculty.

Mr. le Roux has been kind enough to intimate to me that should our Association feel that certain aspects of veterinary affairs need investigation, and should they submit a request which is satisfactorily documented, his Department would give the matter the necessary attetion. This I interpret as meaning that he has left the door at least ajar for us and we intend to make use of this offer.

In latter years a condition has been recognised in animal disease which is called stress. Gradually, means, are being found of measuring and anticipating these stress factors. Now, Sir, the Veterinary Profession has been subjected to very considerable stress for very many years. If the only sypmtom arising from this stress is a peculiar obstinacy not to take "no" for an answer when vital issues are at stake, then I believe this is justifiable.

Now, Sir, when we consider the magnitude and value of the livestock industry in South Africa and when we consider its potential, and the need for the full development of that potential in order to provide food for all, then, after all, I am not asking for very much. I have only spoken for a few minutes and how much could one ask for in that time.

This is no Orange River Scheme; and incidentally the Orange River Scheme is going to increase the demand for veterinarians considerably. Nor do I wish to pretend that this is my last territorial claim, but it is the most urgent one, and therefore I make this appeal with all the force at my command and with all possible sincerity.

Please allow me to remind you that it is impossible in a short address to present all the relevant facts and circumstances which cause the unshakeable conviction that increased facilities for veterinary training are necessary. It is a tragically mistaken concept, for which we ourselves are undoubtedly largely to blame, that the veterinary sphere should be limited to disease. It is only because there has been such a paucity of veterinarians that they have been obliged to confine their attentions largely to disease. It must be very obvious that before disease can be recognised it is necessary to be well informed about the normal, and to know what the limits of normality are. This admittedly does not include the ability to judge individual animals for excellence in the show ring, but it does mean that the earliest deviations from productive health can be recognised. The function of the veterinarian therefore must be more all-embracing so far as his knowledge of health and disease are concerned, than any other group dealing with animals; and who indeed but the veterinarian is to say where disease stops and normality commences? It would therefore appear to be a logical step for the veterinarian to play an even more important role in animal production, provided there are sufficient men available to undertake the work. This is a generally accepted fact in other parts of the world; why should it be denied here? Furthermore it is an economically sound policy.

In conclusion, Sir, it is necessary for me to pay a little attention to a statement made by the Hon. Minister of Agricultural Technical Services in Parliament. I think his remarks about the role of the veterinary surgeon in time of war may have been made without due consideration, and as they received considerable publicity, it is necessary to correct what may develop into a serious misconception. It must be remembered that during war time feeding the entire population, including the army, becomes a major undertaking. I believe Napoleon is alleged to have said that an army marches on its stomach. In modern warfare one can equally claim that the whole nation marches on its stomach. Food supplies, and particularly the protein part of the food supply, which comes chiefly from animals, becomes a major problem. It has been the experience in some other countries that the veterinarian is best qualified to ensure the soundness of all foods of animal origin intended for human consumption. In addition it becomes more important than ever to see that this important source of food i.e. the animal population, remains healthy and retains its maximum potential for production.

In modern warfare the dangers of irradiation and the possible use of poisonous materials as well as bacterial infections as methods of attack, would appear to be very real. When the safety and survival of the nation is at stake it seems, therefore, that the veterinarian will have as important a role to play as the medical man. It would therefore ask the Minister to reconsider his remarks, because it may well happen that he finds his veterinary department to be one of his most valuable assets in time of war.

It is no longer he who holds the gun who renders the most important service to his country during war.

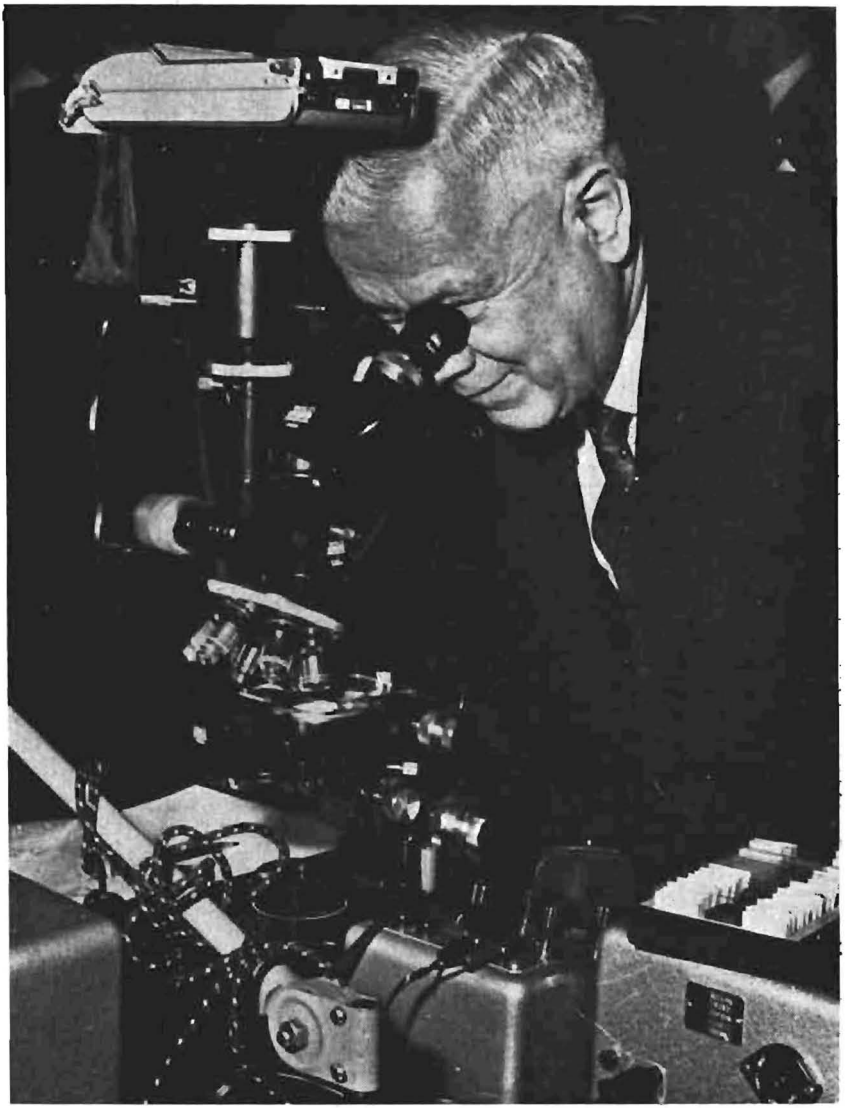
In public health, which includes control of the health of food supplies of animal origin, the veterinarian has a vital role which may increase rather than diminish with war.

In the past, I believe, veterinary students, were in some way exempted from military training, or they did part time trianing during the course of their studies. It would seem necessary to continue that arrangement if at all possible.

These remarks are made, not in a sense of any alarm but merely to indicate that, for the common good, it may be necessary to present the position as I see it.

OPENING OF THE TRADE EXHIBITS BY THE VICE PRESIDENT

Prof. Clark in addressing the members of the Medical Exhibitors Association thanked them for their interest and consideration in again promoting good relations between veterinarians and the firms who sup-



The Hon. Dr. Verwoerd visits the Trade Exhibition at the 1963 Congress of the Association.

plied the pharmaceutical preparations, instruments and appliances necessary to treat sickness in animals.

Mr. Stabler in thanking Prof. Clark for his words of encouragement mentioned that donations to the Association's Benevolent Fund had been made by the individual firms who exhibited and that the cheques would be forwarded to the Secretary of the Association.

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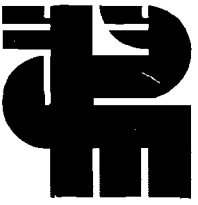

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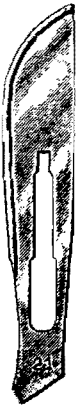

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INLEIDENDE PRAATJIE DEUR DR. J. G. VAN DER WATH VOORSITTER VAN DIE SUID-AFRIKAANSE WOLRAAD

DIE VORIGE BEHEER VAN VEESIEKTES

Ek wil Georganiseerde Veeartsenykunde hartlik bedank vir die geleentheid wat aan my gegee is om namens Georganiseerde Landbou 'n paar gedagtes uit te spreek oor 'n verbeterde veeartsenydiens vir die platteland.

As voorsitter van die Wolraad het ek nie eintlik gesag om namens Georganiseerde Landbou voorstelle te maak nie, maar aangesien ek vir so baie jare sy belange voortgesit het, kan aan my vertrou word om hierdie belange met erns en eerlikheid namens hom voor te dra.

Ek was vir 'n aantal jare hier op Onderstepoort werksaam en verkeer dus in die unieke posisie dat ek met die veeartseny-aspek ook vertroud is.

Die veeartsenydienste wat vir die eerste helfte van hierdie eeu aan die veenywerheid toegeken is, moes noodwendig die bestryding van besmetlike veesiektes as sy vernaamste plig beskou. Runderpes, longsiekte, droes en Ooskuskoors is totaal uitgeroei; skaapbrandsiekte staan op die punt om uitgeroei te word; miltsiekte, perdesiekte, lamsiekte, bloutong, hartwater, slenkdalkoors, bloednier, sponssiekte en ander siektes wat die ekonomie van vee-boerdery belemmer, word nou deur die gebruik van doeltreffende entstowwe onder beheer gehou. Verwante siektes aan Ooskuskoors, soos buffelsiekte en Tzaneensiekte, is nou as spesifieke siektes herken en val nie meer onder die strenge Ooskuskoors-beheerregulasies nie.

Hoewel die uitbreek van bek- en klouseer en hondsdolheid nog van tyd tot tyd lastigheid vir die boer meebring, word selfs oor hierdie siektes verbeterde beheer deur middel van entstowwe voorspel.

Veeartse is dus nou in staat om hul aandag te skenk aan die verwydering van veeartsenyprobleme wat die ekonomie van veeboerdery dag vir dag teister.

Die veeartse van die verlede wat met die beheer van besmetlike veesiektes bemoeid was, het vir Suid-Afrika 'n uitstekende diens gelewer en saam met die boere van daardie tye groot opofferings gemaak om die gevreesde veesiektes uit te roei of onder beheer te bring.

NUWE BEDELINGS

Afsonderlike Navorsing en velddiensteenhede

Die Afdeling Veeartsenydiens soos ons dit tot onlangs geken het, bestaan nie meer nie en is vervang deur die aparte eenhede van Veeartsenykundige Navorsing en Veeartsenykundige Velddienste. Georganiseerde Landbou aanvaar hierdie nuwe benadering en voel dat sodra die

nuwe eenhede koers kry, veeartsenydienste vir die veebedryf met groter doeltreffendheid bewerkstellig sal word.

Veeartsenykundige Velddienste behoort noukeurige opnames te maak van die siektes en toestande wat die ekonomie van veeboerdery beskadig, en Veeartsenykundige Navorsingsdienste kan dan die intieme eienskappe van veroorsakende organismes in alle opsigte bestudeer.

DIE EROSIESIEKTES

Inwendige Parasiete

Die bestryding van die erosiesiektes is, wat die ekonomie van veeboerdery betref, dringend nodig. Die middels wat vandag teen inwendige parasiete beskikbaar is, is blykbaar baie doeltreffend, maar is nog glad te duur om op groot skaal en gereeld, gebruik te word. Middels soos Fenotiasien en Thibenzole behoort in Suid-Afrika vervaardig te word, want hulle is die sleutel tot 'n gesonde skaapboerdery. Die reëlmatige toediening van hierdie middels op groot troppe diere, het 'n merkbare nadelige invloed op die ekonomie van veeboerdery.

Mastitis

Uierontsteking is waarskynlik nog die ergste toestand waarmee die suiwelbedryf te kampe het. Dit is nie moontlik om die skade te bereken wat deur mastitis veroorsaak is, maar dit is seer seker miljoene rand per jaar. Baie meer aandag behoort aan die bestryding van hierdie toestand geskenk te word. Noukeurige opnames behoort oor 'n lang termyn onderneem te word om die siekte in al sy vorms en stadia te studeer.

Besmetlike Misgeboorte en ander Geslagsiektes en Teelprobleme

Die geweldige verliese wat die veebedryf ly as gevolg van geslagsiektes en teelprobleme is die oorsaak van baie van ons mislukte boerderyondernemings.

Hier is 'n rigting wat Veeartsenykundige Velddienste kan inslaan, om met die medewerking van die Navorsingsinstituut en die privaat praktiserende veeartse, hulp aan die boere te verskaf.

Langtermynopnames en intieme waarnemings sal alleenlik bydra om hierdie geweldige verliese te bekamp.

Tuberkulose

Ons verstaan dat 'n skema om tuberkulose by plaasdiere te bestry, die spesiale aandag van Veeartsenykundige Velddienste geniet. Alle moontlike veeartsenykundige kragte behoort ingespan te word om hierdie groot probleem aan te pak. Die artikels wat deur drr. Kleeberg en Worthington op hierdie kongres voorgedra word, is indrukwekkend. Sodra met die skema begin word sal belangrike gegewens versamel word.

DIE PROBLEME VAN DIEREVOEDING

Die veeartse behoort 'n baie groter rol te speel in die oplossing van probleme wat met dierevoeding gepaard gaan. Hier is 'n swakheid in ons veeartsenykundige kursusse.

Die opgeleide veearts is sonder twyfel die persoon wat spesiale kennis behoort te hê oor alle aspekte van dierevoeding, en hy behoort leiding te gee oor hierdie belangrike kwessie.

Die Voorligtingsbeamptes kan hier geen positiewe raad gee nie. Die algemene versorging van diere is in besonder die plig van die veearts.

Korrekte voeding sal ook noodsaaklikheid van toediening van medisynes verminder en produksiekoste verlaag.

DIE UITBREIDING VAN VEEARTSENYDIENSTE

Die rol van die privaat praktiserende veearts

Die fooie van die privaat veearts is in die algemeen onekonomies vir die boer, want as hy volle gebruik maak van die veearts se dienste soos hy behoort te doen, sal hy skade ly. Die *mylgelde* wat aan die veearts betaal moet word is die vernaamste rede waarom die fooie so hoog is en die rede daarvoor is die afstande wat die veeartse moet ry om by die plase te kom. In die algemeen is die veeartse in die stede gevestig en reëlings behoort getref te word om hulle na die platteland toe te lok.

Die Staat is in die algemeen baie gewillig om sy veeartse sonder onkoste tot die boer se beskikking te plaas wanneer grootskaalse mortaliteit ondervind word. Die fooie wat die boer moet betaal vir die behandeling van individuele diere is hoog en die ekonomie van sy boerdery kan dit nie bekostig nie.

Vir jare al is gepraat oor 'n stelsel om veeartse soos distriksgeneeshere in diens te neem. Indien soiets sou gebeur sal beide die Veeartsenykundige Velddienste en die boer geweldig daarby baat. Die Departement van Landbou-tegniese Dienste behoort hierdie noodsaaklike uitbreiding van veeartsenydienste baie noukeurig te ondersoek.

MUNISIPALE VEEARTSE EN VEEARTSE IN DIE HANDEL

Die Munisipale Veeartsenydienste behoort verder uitgebrei te word om die plattelandse dorpe te dien en sodra privaat praktisyns daarheen getrek word, sal hulle hierdie werk deeltyds kan behartig.

Die aanstelling van 'n veearts vir die buite-stedelike gebiede word verwelkom.

Blykbaar is die veeartsenydiens vir die handel besig om toe te neem. Georganiseerde Landbou neem kennis van hierdie vordering.

Ek het maar 'n paar gedagtes oor die uitbreiding van veeartsenydienste in u midde gelê. Skenk u ernstige aandag daaraan en ek is seker beide Georganiseerde Veeartsenykunde en Georganiseerde Landbou sal daarby baat.

SUMMARY OF, AND COMMENTARY ON THE SYMPOSIA:

1. THE CHANGING ROLE OF THE VETERINARIAN IN THE MODERN WORLD

H. P. A. De Boom (Organiser) — P. O. Onderstepoort.

The symposium was organised as part of the proceedings of the 58th. Annual Congress of the South African Veterinary Medical Association held at Onderstepoort from 24th to 27th September, 1963, to celebrate the centenary of the World Veterinary Congress as Animal Health Year. The papers delivered at the symposium have been published in this journal (Vol XXXIV, Nos. 2, 3 and 4). Reference to their essential content only will be made.

It transpired very clearly that, despite mechanisation and the strong trend toward replacement of animal products by synthetic ones, the veterinarian's future rôle would be one of increasing importance, demanding more man-power, greater diversification of activities and thus greater need for specialisation. A positive note was sounded throughout the proceedings, the main concern being one about sufficient man-power, effective top level organisation and co-ordination of activities, and provision of adequate training.

The days of attending to the individual ailing animal are by no means past, but a remunerative practice along these lines in South Africa can only be built up in the cities and larger towns. Even here it can only be done at a higher organisational level—that of established partnership—if the individual practitioner wishes to enjoy a certain modicum of leisure. The past quarter of a century has seen a phenomenal growth of private practice; the number of practitioners increasing from a mere handful until to-day this group outnumbers all others. Private practice will continue to grow, but obviously at a slower rate.

It is in country practice that the services of the veterinarian are needed most urgently in terms of national interest and economy, but it is here that the most serious problems arise, particularly in South Africa. From the farmers' point of view, veterinary services are difficult to obtain and the fees too high relative to the farming economy. Low level farming economy sets in motion a vicious circle: it results in poor veterinary coverage, not likely to be improved in the face of bad debts and inadequate remuneration. The high cost of motor transport and the long distances to be covered, as well as expensive modern drugs, force the practitioner to charge fees uneconomical to the farmer. The latter resorts to self-treatment, an expedient aided and abetted by nostrum hawkers, whose numbers are increasing rapidly. Cases are beyond professional help by the time it is eventually called in.

The principle of part-time employment of private practitioners by state and municipal bodies found general and strong support as a means of overcoming financial obstacles facing all parties concerned and of in-

ducing veterinarians to take up country practice. Before this can be implemented successfully, an adequate number of veterinarians must be available. Meanwhile, the private practitioner should screen his clientele rigorously and, above all, adopt the herd approach, wherel y he becomes an effective link between research worker and farmer. It is by acting as advisor and counsellor to the animal producer that he can most effectively raise the economic level of production and at the same time cut down his overhead expenses and save much-needed time. At the same time it is the most effective way of educating farmers to the value of veterinary aid.

In extension of this line of thought, Dr. van Schalkwyk made the most significant and revolutionary contribution. He analysed future tiends in farming operation, indicating that the family unit farm with its limited man-power and capital is being outsted by the factory farm, run strictly on business lines. "Agri business" has come to stay. The example of the American broiler industry was quoted, the development of which reduced the cost of poultry meat to the consumer from $0.60 per lb. to $0.25 per lb. This was attained by developing types of birds that were genetically capable of the highest production at the most economic levels under the most diverse circumstances, without regard to show and breed standards, and rigorous attention to the economics of nutrition and of management, thus gaining optimum levels at minimum cost of feed labour. Although by comparison prophylaxis against disease had made the least spectacular advances, its significance could not be gainsaid. Movements are afoot overseas to organise sheep- and pigfarming along similar lines.

In such a highly organised and progressive approach, the veterinarian has a vital rôle to play. There is a limitless future in store for the profession, provided it takes note of these developments and prepares itself accordingly to take its place in the teams of specialists, without which such concerns cannot function adequately. This demands for more attention to the organisation and economics of animal productoin. More experience should be gained by visiting existing factory farms overseas and studying their organisation and functioning, more specifically the problems that were encountered and the mistakes that were made.

The possibility of local manufacture of drugs to reduce their cost was explored. It was realised that the tremendous cost involved in developing modern, effective drugs, precluded decentralised, small scale production. (Certain pharmaceutical firms, however, are making effective use of the lower cost structure in the Republic by final processing of imported basic products. Lowering of tariffs on such importations would decrease the local price still further.) A plea was put forward that the process of manufacture be patented instead of the trade name of the ultimate product. As regards nostrum hawkers, there are already indications that organised agriculture is becoming concerned about the deleterious effects of such practice.

Dr. Lambrechts (Chief of Field Services) stressed the increasing economic value of livestock. In the Republic of South Africa this amounted to some R200,000,000. Due to more extensive international contacts and movements, the danger of spread of infectious disease had increased rather than decreased. On the other hand, a number of infectious diseases

have been eradicated or are on the point of being eradicated, others are well-controlled by vaccination and similar measures. Consequently the state veterinary service organisation is changing its empahasis from mere control of potentially dangerous infectious diseases to one of active propagation of animal health. More attention is being devoted to the erosion diseases. A global approach is necessary, entailing surveys, the establishment of regional diagnostic centres, advice and assistance, follow-ups, and effective extension services generally. These services have to be integrated with those of the practitioner, on whose domain the state service may not encroach. On the contrary, it can be of material benefit to him, particularly through the services of the diagnostic centres. The practitioner, in turn, can assist to an ever-increasing degree in the surveys of disease and in extension work. Effective integration entails organisation at a higher level than can be dealt with by a state department alone, as both public and private sectors are intimately concerned. In this respect the professional organisation, more particularly through its council, can and should play an important part. Alternatively, separate coördinating bodies have to be created.

In terms of the above change in approach, the Field Services have been reorganised recently. Improved salary scales and the availability of more veterinary graduates have made it possible to increase the number of field units from forty to eighty in the space of three years. The establishment of regional diagnostic centres is still in its infancy in this country, hence the institution of part-time state veterinarians at this stage, however desirable, would lead to collapse of the evisaged system: the central organisation's machinery must be put into order first.

It was suggested that any unusual occurrence of disease be reported to a central bureau, where the information could be collated and sorted out, as is being done in the case of human diseases in certain overseas countries. This would lead to earlier recognition of disease in unusual guise, or of previously unknown diseases.

Within the framework of state animal health services, the need for specialisation not only in epizootiology in its widest sence, but also in breeding, nutrition, husbandry and in economics of production is evident. In the latter fields there is ample room for both the veterinary hygienist, genesiologist and zootechnologist on the one hand and for the agriculturalist and animal husbandryman on the other. Proper integration at this level, too is of prime importance.

Although established, the rôle of the veterinarian in public health is insufficiently recognised and consequently his potentialities not fully exploited. Since 1944, when six full time and eleven part time municipal veterinarians were employed, in South Africa, these numbers have not increased appreciably. At the moment only seven municipalities employ veterinarians. Difficulties are experienced in filling vacant posts due to lack of trained veterinarians and relatively low salaries offered.

There is ample opportunity for extending the scope of the municipal veterinarians' activities to include inspection of and control over all human food of animal origin—including poultry, game and fish—in all its phases of production. His control over milk and milk supplies is still inadequate because of administrative shortcomings. A very good case for

centralisation of food inspection control was made out by Dr. Horwitz (Cape Town Municipality). This would ensure uniformity of legislation and of inspection standards. Such centralisation should not be absolute: a certain degree of autonomy should be granted to larger centres. At the moment, out-dated regulations and lack of uniformity from centre to centre impose unnecessary burdens on the meat and milk producer and restrict control over hygienic milk production, In all but the seven centres mentioned, there is no veterinary control whatsoever. Adequate inspection of poultry should be instituted. It was suggested that large broiler-producing farms be licensed as slaughtering centres and the requisite buildings be made to conform to uniform and adequate standards. Very high standards are imposed by importing countries: we should be able to meet them.

Dr. H. Nelson (Medical Officer of Health, Pretoria) also expressed concern over the small part played by the veterinarians in public health in South Africa. Regulations should be promulgated to enforce employment of a veterinary officer of public health on a part-time, state-subsidised basis, as soon as the population of a community exceeded a certain number, as was being done in the case of medical officers of health.

A recent development, and a trend that deserves encouragement, is the appointment of veterinary officers to peri-urban health services.

The activities of the veterinary officer of health can be integrated profitably into state animal health services and disease eradication schemes, as well as into highly organised factory-farm production units. As an example the abattoir as a disease-detecting centre was mentioned.

In the pharmaceutical industry there is an increasing demand for veterinarians in all spheres of drug production and manufacture in basic research in evaluation and toxicity testing, in development of production and in marketing—provided the veterinarian is prepared to adap himself to the demands imposed.

Although the veterinarian in South Africa has long been associated with game as carriers of disease and his attitude had perforce been a negative one, it was only within recent years that a more positive attitude has been taken. It has become apparent that the veterinarian can render valuable service by applying his knowledge of physiology, animal husbandry, pathology and epizootiology to game ecology and control and thus assist the game conservationist in the problems confronting him.

Dr. MacKinnon (Southern Rhodesia) indicated that rational game cropping with adequate control over inspection, storage, distribution and marketing of game products is a proven possibility in the light of experience in Southern Rhodesia. A number of persons practise game farming and eight licences have been issued to allow large scale controlled shooting of game as both a conservation measure and as a source of food. There is a Department of Game Preservation in that country, and a committee of experts, including veterinarians, supervise activities.

Control over the health of laboratory animals is still an incidental function of research laboratories; in the Republic it has not yet become a full-time avenue of employment. Problems confronting the fur industry and fisheries have only received sporadic attention from veterinarians. It is still fallow land.

The nature of research has changed considerably and present trends will be continued at an accelerated pace. As the focus of attention is intensified, so the range is shortened. A multi-discipline approach to the same problem is developing and teamwork has become the essence of organisation. There is the continual demand for increased specialisation. At the same time advancing techniques force the research worker to take note of the developments in fields remote from his own, as, for example, electronics and nuclear physics. Concomitantly with the greater specialisation and divergence of activities, there is an overall process of convergance on the essential physiology of the living organism. This process is fundamentally altering the approach in most fields.

The institution of regional centres will not only lighten the burden of routine diagnostic work devolving on the central institute; they will also serve to collect, screen and forward the necessary information and material. The influence of environment on animal health is of the utmost importance. In the investigation of regional pathology these centres will do sentry duty.

Within the wider framework of organised research, the field officer, the municipal veterinarian, the veterinarian concerned with game conservation, the private practitioner, all have important assignments to fulfil. Accurate and acute observation on the various manifestations of disease still form the essential starting point of research, often providing the all-important clue, as, for instance, in the case of botulism. The private practitioner, in addition, can assist materially in the evaluation of remedies under varying conditions of usage. This is emphasised, because there is the distinct danger than an incorrect attitude is adopted, namely, that research is a matter of massive data collection, involved apparatus and a laboratory environment.

The widening sphere of veterinary activities in turn impose greater demands on research, to supply answers to the problems encountered. Development of research policies and organisation and integration of research has become an evermore exacting task over wider horizons.

An awareness of problems and possible solutions, at whatever level, can only be created by continual intercommunication, through which information can also be disseminated. This is all the more important, where no direct organisational link exists, such as between private practitioner and state services. In this respect the professional society has a vital task to fulfil. And the more highly geared the organisation, the more effective communication must be.

In view of the world-wide shortage of veterinarians, veterinary education has received the serious attention of, inter alia, F.A.O. At the first international meeting on veterinary education in 1960 an expert panel on veterinary education was formed. This panel has now met twice, and reports of all the proceedings and recommendations are available. The second international meeting in due to be held in 1965.

No simple and generally applicable formula could be found by the abovementioned bodies, by which the exact extent of the shortage could be assessed. The obvious method of assessment, namly the comparative ratio of number of veterinarians to number of livestock units, did not and could not take the economic value and productive capacity of the animals

into consideration. The general level of economic development and particularly the economic level of animal production also determine the number of veterinarians required. In terms of ratios existing in advanced European countries and the United States of America, South Africa would qualify as an underdeveloped country—as was mentioned in the Presidential Address delivered earlier in the day—despite the high level of veterinary organisation obtained.

The total number of students accepted annually at Onderstepoort since the beginning of this year, namely 45, is in excess of the numbers recommended by the F.A.O. Expert Panel, i.e. 40 and 30. (Unfortunately no closely reasoned rationale is offered of how these numbers were arrived at.) The wastage during the course of professional training (that is from the second year of study onwards in this country) is three per cent, and compares favourably with that of other countries.

In terms of the above figures a second faculty would be necessary to relieve the shortage of man-power experienced by the various branches of veterinary services in the Republic. (The advantages and disadvantages of a second faculty were not thrashed out by the meeting. In view of the Prime Minister's remarks in his Opening Address to the Congress, a second faculty of veterinary science was not likely to materialise soon.)

Although the suggestion was made that courses should already be differentiated at the undergraduate level, the consensus of opinion did not favour undergraduate specialisation. The first degree is to be considered as nothing but a licence to improve previous knowledge and gain new knowledge.

Rapid advances in knowledge, diversification of veterinary activities, and changed conditions generally impose heavy demands on veterinary education; demands of which the Faculty is well aware. Efforts have been and are being made to improve the teaching of genetics, and nutrition. A separate Department of Genesiology and Artificial Insemination has been created. It was mooted that in some countries extension of the undergraduate course was being considered: no specific opinion was expressed by the meeting on this matter. By implication the impression was created that it was not yet necessary, despite the admittedly heavy burden placed upon the students. Prof. Coles offered to make arrangements whereby observers from the Veterinary Faculty could attend the meeting on Medical Education to be held in Durban next year.

The recent institution of specialist degrees (Magister Medicinae Veterinariae) in Surgery, Medicine, Genesiology, Public Health, State Veterinary Medicine and in Physiology, as well as a Diploma in Public Health equivalent to the D.P.H. taken by medical men, was welcomed as a favourable response to the demands exacted from the profession. The importance of, and the need for, post-graduate courses of instruction was stressed by a number of speakers, each in his own field. Selected officers in the state service would be granted the opportunity of obtaining such an advanced degree. Wherever and whenever possible, state veterinarians were attending brief, informal refresher courses. The need was expressed for a post-graduate course in animal conservation in this country.

As a specialist register for practitioners was not yet economically feasible, it was felt that ways and means be considered to afford some relief of the financial sacrifices made by those self-employed veterinarians wishing to take post-graduate courses. A system of temporary assistantships against reasonable remuneration, and/or adequate bursaries should be instituted. A plea was put forward that more bursaries than the two now availbale be granted by a private business sector.

A note of warning was sounded against too early specialisation. The expert in any particular branch of veterinary science was all the better off after having gained experience over a wider field before confining himself to a particular line. Those men who are regarded as authorities in this country to-day, have attained their leadership not by attending post-graduate courses, but by their own efforts and self-study.

The future offers unlimited possibilities, provided the profession is aware of them, and prepares itself adequately and accordingly, in terms of knowledge, experience, man-power and organisation.

ACKNOWLEDGEMENTS

Sincere thanks are tendered to the contributors of papers towards this symposium, to the participants in the discussion, and to Drs. J. F. Grosskopf and W. A. de Klerk for their valuable help in recording the proceedings. Permission to publish this summary is acknowledged to the Chief, Veterinary Research Institute, Onderstepoort.

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2. GERIATRICS OF SMALL ANIMALS

A Summary of the discussion

Six practitioners presented papers on varying aspects of the aging processes in dogs; the renal and cardiovascular systems were discussed while senile conditions affecting the eyes and skin came under review. Surgical intervention and its attendant risks were considered as were the care, management and feeding of hospitalised patients.

In opening the Symposium, Dr. E. M. Hearn stressed the inherent risks which are encountered when the aged animal undergoes any marked environmental changes and how many relatively mild mishaps to the system may precipitate renal, hepatic and cardiovascular collapse. The need for replacement therapy using vitamin B. compound pre- and post-operatively was mentioned and the merits of short acting barbituate anaesthesia were compared with halothane closed circuit techniques.

Drs. Brownlie and Brown agreed that the use of tranquillisers in aging animals was unreliable and could be fraught with danger due to liver damage and renal impairment; the value of methionine, choline and

vitamin B in reducing post operative collapse was mentioned. Prof. van der Walt favoured the administration of whole blood pre- and post-operatively or protein hydrolysate to combat surgical shock in anaemic patients and to increase glomerular function but Dr. Brown pointed out the possible dangers of whole blood. He preferred serum albumen for plasma replacement and sodium lactate, glucose saline and dextrose intravenously to increase glomerular filtration.

The advantages of pre-operative B.U.N. tests were put forward by Dr. Malherbe and it was agreed that these were extremely useful guides to prognosis although Dr. Hearn pointed out that in emergencies, these were not feasible.

Renal and urinary conditions were dealt with by Dr. W. E. Warnes who reviewed the scope of some urinary antiseptics and the effects of antibiotic therapy. The question of whether Leptospirosis exists in S. Africa was effectively answered by Drs. Brownlie, Clark and van der Walt all of whom agreed that it did occur.

Methods of counteracting renal collapse were discussed and the value of high quality protein in the aging dog was mentioned. Contrary to former teachings Dr. Van der Walt said that sodium intake was necessary to maintain effective glomerular excretion but in his experience oral diuretics were not called for.

While he agreed that anaemia did occur in old dogs, Dr. Brown deprecated the use of whole blood since haemosiderosis might follow its administration and Dr. Clark said he too took this view.

The frequency of cardiovascular changes linked with renal degenerations was mentioned by Dr. C. Dickson. In his review he pointed out that cardiac conditions might occur at quite an early age, but that in many cases it is possible to prolong life for considerable periods before congestive heart failure ensued. He gave brief outlines of treatment of the aging heart and said that digitalisation appeared to give best results. In his experience there appeared to be the need for regular examination to evaluate digitalis therapy and he favoured routine injections of vitamin B_{12}. Oral diuretics were of value in controlling systemic oedema.

Where cardiac irregularities were diagnosed at an early stage it was felt that high dosage vitamin E could be of value. Dr. Brown enquired whether any new information of the linkage between vitamin E and selenium was available.

Dr. Van der Walt said that where digitalis was not tolerated he had had good results using a new drug Cortensor which enabled the dosage of digitalis to be reduced; with reference to vitamin B_{12} therapy he felt that minimal doses were required since the effective factor might well be cobalt itself.

Dr. J. L. Doré, whose subject was eye conditions, described in some detail the removal of cataractous lenses; the dangers of haemorrhage and post operative opacities were stressed and a comparison was made between his technique and that of Prof. Hofmeyr. The possibility that pigmentary keratitis in certain breeds might be hereditary was mentioned as well as irritation as a causal factor.

A pigmentary, punctate keratitis which occurs chiefly in Alsations was mentioned by a number of practitioners and it would seem that this

condition is much more prevalent on the Reef than elsewhere. Dr. Keep stated that a temporary improvement is frequently obtained by the use of subconjunctival "Depo-Medrol" which must be repeated at 3-4 week intervals.

Considerable discussion followed the paper and slide demonstrations of skin conditions presented by Dr. J. F. Brownlie. He pleaded with practitioners to make notes of their observations, and suggested that the time was ripe for a much more accurate nomenclature of skin conditions.

Dealing with the all too common mouth-prepuce-vulva lesion of some breeds, Dr. Dore asked whether others could confirm his finding of monilial infection. In reply Drs. Malherbe and van der Walt said that no evidence existed that this cheilogenic condition was infectious. Environment certainly played a part and Drs. Steyn and le Roux were of the opinion that an allergy was probably the cause and that floor polish or the wood irritant solutions with which parquet flooring was prepared, might be implicated.

In the treatment of rodent ulcers in white cats, Dr. Jenkins said that a malignancy was frequently present and that he has had initially successful results with radio-active gold implants and he would be willing to assist practitioners in treating such cases. Dr. Smit mentioned the value of hormonal treatment in many skin conditions and felt that this field had not been sufficiently explored.

In the final paper on conditions calling for surgical intervention Dr. M. E. Keep touched on teeth extraction, the removal of tumour growths and cystic calculi in dogs and bitches, and the relatively infrequency with which calculi recurred in bitches. He stressed the advantages of performing a cystotomy at the same time as urethrotomy in the dog. Tumours could be divided into two classes, the inoperable and operable and he suggested that better results might be obtained in the latter if an early correct diagnosis of the neoplasm could be obtained.

Dr. Brown said that serum phosphatase determination might be of value in determining malignacy in osteoblastic types and in the differentiation between prostatic malignancy and hypertrophy. Dr. le Roux mentioned that in the reduction of perineal hernia, the repair of the hernia was successful if carried out early enough, even in bilateral cases. Castration of the animal and the resulting alleviation of prostatic irritation appeared to help in his experience.

Summing up by Campbell Dickson (organiser)

As the organiser of this symposium, may I on behalf of my colleagues and myself thank our Association for the honour it has bestowed on us.

You have listened with interest, I trust, to the experiences of some of us in general practice and it has been our endeavour to present some of the more important facets of the treatment, care and management of our aging small animal population. In particular, we have tried to pinpoint those pathological conditions which clinicians encounter in their daily practices. From our discussions you will have noted that aging and aged animals comprise a considerable proportion of our patients.

It is apparent from various speakers that urinary conditions plus cardio-vascular degenerative processes account for the highest mortality rate in aging dogs. Measures to combat and alleviate uraemic states were discussed and while no agreement was reached on the value of whole blood transfusions, it is agreed that a high protein diet increases glomerular function and that a sodium intake is essential. It has been established that renal and cardiac conditions in later life probably arise from previous infective processes and the existence of Leptospirosis in dogs in S. Africa is confirmed.

The discussion on the general aspects of pre-and post-operative care and management evoked the greatest interest. In aged animals the consensus of opinion is that tranquillisers are unpredictable and that short acting barbiturate anaesthesia offers the greatest safety and is likely to produce a minimal amount of shock. The value of replacement therapy including Vitamin B. complex, Ringer's solution, serum albumin and choline and methionine was stressed as was the advantage of the blood-urea-nitrogen test in assessing the prognosis in surgical interventions.

In the realm of eye surgery it has been made clear that the attendant hazards are such that we, as a profession, can never expect to emulate our colleagues in the medical field. However, considerable advances have been made and the newer techniques which have been developed and adapted by veterinarians offer considerable hope and it is encouraging to note that Prof. Hofmeyr and Dr. Doré have both ventured boldly into this aspect.

An interesting observation has arisen from our discussions on pigmentary keratitis in aging dogs and it is obvious that the Alsatian in the Witwatersrand is subject to an intractable punctate form of this condition which has not been noted elsewhere. As yet, no lasting benefit has been seen from a number of treatments, although subconjunctival injections of a long acting cortico-steroid relieve the condition.

Most of us present endorse the plea which has been made for a closer and more exacting investigation into skin conditions in aging dogs and cats. Too frequently these are lumped together under the portmanteau term eczema and it is refreshing to learn from a number of colleagues that they are actively pursuing studies into the causation of some skin conditions which may arise from sex hormonal disturbances, pituitary deficiences and allergic reactions.

Among the latter, floor polish or the irritation caused by treated parquet flooring has been cited as a potent cause of cheilogenic dermatitis affecting the mouth, prepuce and vulva particularly in spaniels and the possible reasons for this reaction have been given a full airing. In cats suffering from rodent ulcer of the nose, lips and ears, good results have been obtained by implants of radioactive gold.

Some of you may feel that undue consideration is placed by owners on the preservation and maintenance of old animals. I would remind you, however, that the care and affection of houshold pets has long been recognised as the mark of a civilised people and were this not so there would be little justification for myself and my colleagues to be here with you.

I would like all of you to differentiate between sentiment and sentimentality and I think Dr. Hearn's paper clearly outlines this difference. In it she mentions the need for nursing of aging animals and the considerations that accompany hospitalisation of these. I agree with her entirely that the destruction of animals purely on account of age is to be deplored. As a profession we must not and should not advocate euthanasia rather than exercise our diagnostic talents and even pit our brains against baffling senescent changes. Nor should the necessity for surgical interference deter us in preserving animals which are aging. Again, we have advanced steadily in recent years; we have armed ourselves with better drugs especially anaesthetics and have made ourselves familiar with up-to-date techniques so that surgery even in an old dog is a feasible and frequently worthwhile and rewarding intervention. Dr. Keep's brief outline has shown what can be done.

To all of you who have taken part in and have listened to our discussions I would express the hope that you have gained something of value. The sharing of knowledge and the exchange of views, techniques, treatments and even our fads and fancies is of benefit to all. I thank you all for your attention and to my colleagues with me here who supported me, go my especial thanks and appreciation.

3. PROBLEMS ASSOCIATED WITH THE HIGH PRODUCING DIARY COW

SUMMING UP BY I. S. MCFARLANE (ORGANIZER)

Dr. McFarlane read Mr. Beal-Preston's paper in his absence:—
The following statements were made:—

1. The masterbreeder of high producing dairy animals must be looked upon as a scientist himself, but the breeding of such cows is not only a science, but an art.

2. Mr. Beal-Preston stressed the fact that there should be a very intimate interrelationship between the breeder and the veterinarian.

3. He stated that where the production of the cow increases reproduction tends to decrease.

4. It is a wellknown fact that the nutritional and management stress decrease the resistance of the animal to infection. Dr. McFarlane added that excellent feeding can mask the presence of disease, and as soon as the quality of nutrition decreases, symptoms of the masked disease appear.

5. In this symposium the emphasis fell on the udder, and the relation between mastitis and nutrition was of utmost importance.

6. Nutrition, and anatomical defects predispose to mastitis; even hormones have their implication in this regard. To prove this point, it was stated that the cows with a very good milk "let down" do not show such a tendency to infection of the udder.

7. It is a well known fact that machine milking can cause a very high incidence of mastitis *under certain circumstances*: It was found that well managed milking machines of good quality prove highly efficient and economical.

He concluded with the following remarks:—

In spite of modern knowledge more research was needed to investigate the problems of the high producing cow. The science of feeding and production is advancing tremendously but one aspect which has been neglected is management.

It was quite clear that factors like automatic breeding as such were turning the cow into a mere unit, and the art of stockmanship was disappearing.

After Dr. Grosskopf, Prof. van der Walt, Dr. S. W. J. van Rensburg, Dr. la Grange and Dr. van den Heever had presented their contributions to the symposium, Prof. Walter Renk made the following contribution:—

CONTRIBUTION BY PROF. WALTER RENK OF BERLIN WESTERN GERMANY

There are 50 different species of bacteria and about 25 species of fungi which have been proved to be capable of causing mastitis in cows. Furthermore, catarrhal inflammations of the udder are known to occur in the absence of any micro-organism.

The micro-organisms found most frequently in mastitis are the following:— Streptococci, staphylococci, *Corynebacterium pyogenes*, *Mycobacterium tuberculosis* variety bovis, *Brucella abortus* and *Escherichia coli*.

The main route of entry for the majority of mastitogenic organisms is the teat orifice and the ductus papillaris. In tuberculosis and brucelloses, and in some cases of *E. coli* infection, infection of the mammary gland occurs haematogenically. Contact between the teat orifice and the germs does not necessarily cause infection *per se*; this is influenced by many factors: poor stabling, cold, teat injuries, inherited or acquired abnormalities of teats and udder, bad milking methods and weaknesses in general condition. Not only are injuries, eczema, warts and injuries of the ductus papillaris of importance but the inherited plate- and funnel-shaped teat oriface and the deep-hanging pendulous udder may also predispose to infection. Occasionally cases of mastitis are produced by treating the udder under unhygienic conditions.

The influence of nutrition on mastitis has not yet been definitely established. The age of the animal and stage of lactation, however, play a definite role. With increasing age a higher incidence of mastitis due to *Streptococcus agalactiae* is obtained. Infection with *C. pyogenes* occurs mainly in the period before milk secretaion is initiated.

The different forms of mastitis may be classified according to the course of the disease, the nature of the secretion (secretion and exudate) and the nature of the inflammatory reaction, into seven different types:—

1.&2.	Galactophontis and Mastitis catarrhalis acuta or chronica	Mainly caused by streptococci staphylocci and non-specific catarrh of the udder.
3.	Mastitis acuta gravis.....	*E. coli* and miscellaneous infections.

4.	Mastitis apostematosa chronica	*C. Pyogenes* and miscellaneous infections.
5.	Mastitis interstitialis non-purulenta	B. *abortus.*
6.	Mastitis tuberculosis.....	*M. bovis.*
7.	Mastitis actinomycotica.....	Staphylococcus and miscellanneous infections.
8.	Mastitis blastomycotica.....	*Crytococcus neoformans.*

The different types of mastitis are not specific for the species of microorganism present. Bacteriological examinations are essential for the correct diagnosis and therapy.

The question whether the organisms causing mastitis could be destroyed by the drugs in use-today, was asked. It can be said that, in general, usually streptococci, staphylococci and *C. pyogenes* are not resistant to penicillin and streptomycin. *E. coli* is resistant to penicillin but not to aureomycin and terramycin. The efficiency of the drugs depends not only on the species of bacteria present but also on the location of the bacteria in the udder. Streptococci are present and multiply in the duct system of the udder and are therefore relatively easy to destroy (control) by penicillin injected into the teat cistern. Staphylococci occur in the duct system and, in some cases, also in the interstitial tissue of the mammary gland. Here, intracisternal treatment has no effect. Staphylococci may live for a long time on the skin of the udder before or after treating the infection in the gland. Coliform bacteria may not be reached via the duct system of the udder if they have already invaded the mammary tissue or if the milk ducts are filled with fibrin (fibrinous exudate). The same may be said when abscesses are present during *C. pyogenes* infections.

Frequently mixed infections are encountered such as staphylococci and streptococci, *C. pyogenes* and staphylococci, *E. coli* and staphylococci, or *Clostridium perfringens* and staphylococci. These mixed infections are usually more dangerous than the infections due to single species of bacteria. Treatment is also more difficult.

With regard to oedema of the udder: according to the latest information available high protein rations during the dry period have no influence on the development of oedema. Apparently, during pregnancy, there is a reduction in the total plasma protein content which favours the appearance of oedema. The same condition has been described in women. Severe oedemas develop only after parturition and they may be reduced by diuretics (dehydrating drugs) e.g. Vertidrex.

The question with regard to milking ability which may also predispose to mastitis was asked. In our cases of inherited hard milkers we very often found teats with a blunt teat top and a long ductus papillaris, and also narrow teat cisterns with thick teat walls. Easy milkers, on the other hand, usually had pointed teat tops, wide teat cisterns and thin teat walls. Acquired hard milking ability is usually the result of teat injuries or of productive inflammation of the cistern and the duct system of the udder.

DR. MCFARLANE then gave a summary of the main contributions to the Symposium whereafter the general discussion followed.

GENERAL DISCUSSION

A lively discussion on this subject followed.

DR. MCFARLANE discussed the effectiveness of the antibiotics supplied to the farmers; some members disagreed with him.

DR. C. VAN DER MERWE complained about certain cows which showed no clinical symptoms but still did not give good milk yields. She advocated regional laboratories to facilitate the investigation of milk samples.

DR. VAN DEN HEEVER replied that the cases which she complains about were probably due to a subclinical infection.

PROF. OSTERHOFF gave a lengthy discussion in which he asked whether it was possible to breed for such a variation of characteristics in the high producing dairy cow. He also discussed the milking period of 300 days and referred to udder function, teat length etc. based on observations done in Sweden, during a genetical project.

THE ORGANISERS' REPLY

DR. MCFARLANE first of all replied to the criticism of Dr. Shone, by saying that Dr. Shone misinterpreted his words about antibiotics.

He said that genetics had a very small role in the breeding of high producers. He added that the careful selection of various characteristics stayed foremost in breeding.

It was an accepted fact that no animal produced more than she could, but an attempt should be made to get as much as possible from her. It should be remembered that high production for a 2 gallon cow was exactly 2 gallons and no more. The same applied to a 10 gallon cow. Prof. Renk was then heartily thanked for his contribution, which showed his profound knowledge of the problem.

IMMUNITY TO *STAPHYLOCOCCUS AUREUS.*

C. M. CAMERON.

After shortly explaining the role which the various exotoxins and somatic antigens play in staphylococcal immunity, the use of vaccines in practice was discussed in more detail.

It was stressed that antibody response is only transient and that no permanent immunity is possible with adjuvant cell toxoid type vaccines. Staphylococcal vaccines may nevertheless be of value in herds where the control of mastitis by other means have failed. This is however, only possible where the infectious strain is antigenically closely related to the strains which comprise the cellular portion of the vaccine.

Discussion

Dr. Shone posed a question regarding the relative incidence of streptococcal and staphylococcal mastitis and aslo wanted to know what the tendency has been during the last couple of years. This question was difficult to answer as milk specimens routinely received at the laboratory were pre-selected in that they were usually from heıds which have given poor response to antibiotic therapy. Such cases invariably prove to be staphylococcal or corynebacterium mastitis. Only isolated cases of streptococcal mastitis have been diagnosed during the past four years.

The problems associated with research into staphylococcal immunity were dealt with in detail by Dr. Janivick a visitor from Saphar Laboratories. He especially emphasized the difficulty found in interpreting the conflicting results which are obtained with various immunizing antigens. Dr. Cameron thanked him for expounding on the important aspects which he was only able to mention in passing in his paper.

Following a question by Dr. du Toit, it was pointed out that staphylococcal mastitis is very often an interstitial infection and for that reason, it is advisable to treat cases parenterally as well as by udder infusion. Care should alıo be taken that dosage of antibiotics are adequate.

In conclusion, Dr. Jansen pointed out that streptococcal mastitis is a true infectious disease, whereas staphylococcal infections develope under suitable conditions from commensals contaminating the skin and udder.

2. A MODERN APPROACH TO THE CONTROL OF BOVINE TUBERCULOSIS

H. H. KLEEBERG

In introducing the paper, DR. KLEEBERG appealed to the profession as a whole to play a more active part in the eradication of tuberculosis. The seriousness of the situation in the dairies could no longer be doubted. After summarising the advantages of isoniazid therapy over slaughter-out of reactors, he elaborated on the criticisms of chemotherapy of bovne tuberculosis as voiced in U.S.A., Europe and South Africa.

It was said to be too costly, but this was no longer true. The price of isoniazid as pure powder had dropped recently again and it would now cost R5.00 (£2.10/-) to treat a Holstein cow. Excretion of the drug with the milk occurs, but the drug has deterioted before the milk reaches the consumer. Reactivation of tuberculosis after treatment was only seen twice in 1,000 treated cases. Another objection was the possible spread of INH-resistant tubercle bacilli. This had not been observed in 90% of cases these organisms were found in well encapsulated lesions. It had been shown experimentally that they were not able permanently to infect calves and that they are highly attenuated in seven other mammalian species. The phenomenon of tuberculous cattle becoming negative to tuberculin tests during treatment and showing skin reactivity again after therapy stopped was no longer interpreted as an indirect cortisone-like interference of INH, but as the disappearance and re-appearance of cellular antibodies. When all except a few dormant bacilli have been removed, antibody formation ceases. After dosing stopped, the survivors sometimes start multiplying again and antibodies re-appear. Due to a higher immunity and the attenuation of the bacilli, these "re-infections" are overcome by most cattle which then revert to negative again. Among the tables and graphs shown were two which gave the results of tuberculin tests done on nine more recently treated herds. See Table III and IV.

In order to test the practicability of the treatment method when used on a larger scale, these nine herds were treated at the owners costs and as little supervision and control as possible was excercised. In 7 herds no separation of infected and clean stock was undertaken. The farms were visited in connection with tuberculin tests only, which were cut down to 2 per year. Regularity of dosing was not controlled, except for the amount of INH powder used.

From the absence of any new reactors and the rapid decrease in tuberculin skin sensitivity, one can conclude that all farmers administered the drug daily for 8 months as prescribed. The results are equally good whether dosing was done by spoon or syringe or the drug was mixed into the ration.

DR. TRUTER: In opening the discussion, emphasised that the position with regard to tuberculosis in dairies was serious. He agreed with the speaker that the use of isoniazid in the control of tuberculosis had a num-

ber of advantages as compared to the slaughter-out policy. Neither slaughter not separation was necessary. The productivity, economy and management of the herd was unaffected. Eight of the experimental herds were located in the Heidelberg district and the coöperation between the Onderstepoort Tb section and the Field Services had been very good. Giving the drug in the concentrate ration, caused little extra work and dosing of young and dry stock was best done in a crushpen. Proper identification of cattle over long periods was essential and very often the lack of it caused great losses of the veterinarian's time. Good brass eartags should be used and correctly inserted in the base of the ear. The accurate keeping of records was extremely important. Both the owner and the veterinarian were usually impressed by the improvement in the condition of the cattle and the marked change in tuberculin skin sensitivity after therapy.

TABLE III

Tuberculin reactivity of four herds treated with Isoniazid in 1961 and compared with the 8 herds treated earlier.

Herds	Average increase of skinfold measurement in millimeter						No. of previous reactors in herd 2 years later
	At start		2–3 months	8–10 months	13–15 months	20–26 months	
	No. of Tb cattle	reaction					
G.A.G. Tvl...	140	15.2	16.3	8.9	7.7	6.6	87
Scho. Tvl.....	69	12.5	9.0	8.0	4.0	4.0	40
Schm. Tvl.....	47	13.0	—	6.4	4.6	3.0	43
C.J.G. Tvl.....	64	15.4	13.4	7.5	6.8	3.4	40
8 Herds of 1958-59....	576	11.1	7.9	3.9	2.8	1.5	257

TABLE IV

Tuberculin reactivity of five herds which started Isoniazid treatment in 1962.

Herds	Size and Tb incidence		Skin reactions (averages)	
	Total	Reactors	Before INH treatment	After 8 months INH treatment
P.E. Natal.....	133	54	14 mm	4.5mm
S.W. Natal.....	163	51	15.6mm	5.0mm
HOU. Natal....	504	135	16 mm	5.2mm
C.R. Natal.....	314	54	20.5mm	6.0mm
HOO. Tvl.....	240	87	12.7mm	5.8mm

DR. VAN DEN HEEVER asked, whether cattle which were presented for slaughter at various stages of treatment and healing should be judged any differently from ordinary Tb. cases from the meat inspection point of view.

Answer:

Any tuberculous lesion found should be judged in the usual way. In generalised cases, there might still be living organisms present and in localized cases, the lesions would be very small, completely fibrotic or even re-absorbed and most of those would be missed at the normal meat inspection.

DR. SMIT mentioned that it is said that 70 per cent of udder tuberculosis is of the isolated organ type and how this would agree with the speakers statement that the site of lesions was of little concern for the eventual outcome of the treatment.

Answer:

Because of the time limit, the problem of treated Tb. mastitis had not been dealt with. Mastitis should never be treated and clinical, bacteriological and serological examinations should be carried out to eliminate these cases before treatment started. The figure of 70 per cent of Tb. mastitis being of the isolated type was doubtful. All cattle with Tb. mastitis in this investigation had shown generalized tuberculosis.

DR. GREATHEAD pointed out that five treated Tb. cattle were examined at the Johannesburg Abattoir recently and lesions were found in only one case.

DR. VAN DRIMMELEN asked, how new animals could be introduced into a treated herd. Would they also be treated?

Answer:

The aim should always be to have a closed herd, but this was rarely done so far. All new intorductions were tested and when positive, treated immediately; and new spread has not occurred yet from these animals.

DR. LAMBRECHTS expressed his appreciation of the work done by the tuberculosis section of Onderstepoort. While admitting that little progress had been made with tuberculosis control, it should be remembered that other epizootics like foot-and-mouth disease had to be controlled and that there was a shortage of staff. It would be unwise to jump into a general scheme without sufficient control and organisation. Experience of other countries showed that area eradication was best, and that it was the final spurt that counted, not the slow long term control.

The method of treatment with isoniazid had valuable application in valuable herds where high compensation would have to be paid for slaughtered cattle. In the commercial herds treatment could be used to dampen the flames of the disease; for the rest the radical method was still best.

As the first step, as much tuberculin testing as possible will be done to get a better picture of the incidence of Tb; then a start with controlling the reactors will be made.

In Northern Natal, the Division had seen that when cattle movements were restricted to movements on permit, the average farmer made 40 movements per year. This will present a problem. On our farms there are often three distinct herds—the pedigree herd, the "summer herd" and the native cattle. This, among other things, made our conditions different from overseas.

DR. PIETERSE, TUBERCULOSIS HOSPITAL, RIETFONTEIN:

The veterinarians are lucky to be able to judge improvement after treatment by a clinical test, i.e. tuberculin test. This was not so in humans. In humans one single dose daily proved to be far better than a multiple dose, and probably twice weekly dosing is better than slipping a few days, provided a full weeks dose is given on these 2 days.

Answer:

Twice weekly dosing was a new approach in human medicine that had been thought of in the treatment of cattle. It was, however, considered psychologically better to the farmer to have daily dosing, otherwise he might become careless.

3.—IMMOBILISING DRUGS USED IN THE CAPTURE OF WILD ANIMALS IN KRUGER NATIONAL PARK

J. W. VAN NIEKERK

DR. JANSEN wou van dr. van Niekerk weet hoe die metodes aangewend kan word om sekere species wat feitlik verdwyn het en wat slegs in sommige areas voorkom, soos bv. die Bastersgemsbok, te behou.

Antwoord:

Noukeurige waarnemings word gedoen asook rekords gehou in verband met voorkoms van sulke species. Miltsiekte het in die verlede heelwat verliese veroorsaak onder die species en die vermoede bestaan, volgens genetici, dat nuwe bloed ingebring moet word vir die behoud van die species. Diere vanaf ander omgewings kan dus met behulp van hierdie metodes ingebring word.

DR. MEESER wens dr. van Niekerk geluk met werk wat gedoen is, wys daarop dat die werk 'n inleiding is tot die toepassing van veeartsenykunde op 'n nuwe gebied. Talle probleme moes oorhou word voordat sukses behaal is bv. die ontwerp van 'n spesiale naald vir suksesvolle toediening van verdowingsmiddels aan dikvellige diere. Die middels en metodes wat hier gebruik is sal in die toekoms van groot waarde wees vir diagnostiese doeleindes en die bevestiging van species.

DR. VAN DER VEEN wanted to know why Dr. van Niekerk has not used "Sequil". In his experience it works very well in both bovines and dogs.

PROF. SMIT het die aandag gevestig op verlamming by blesbokke wat gevang word en waarin 'n toestand soortgelyk as Vlekspiersiekte gesien word. Wou weet of dr. van Niekerk sulke gevalle teegekom het gedurende die vang van wild. 'n Derglike toestand kom ook voor by varke wat vervoer word. Die toestand word toegeskryf aan 'n Vit. E. of Selenium te kort, beveel aan dat Selenium profelakties gebruik word in sulke gevalle.

Antwoord:

Daar is wel in buffels, wat met "Qixlaflex" verdoof is, 'n toestand soortgelyk aan paralitiese myohaemogloginurie by perde, gesien. Bedank Prof. Smit vir die wenk van profelahtiese gebruik van selenium. Wys verder daarop dat wilde diere nie gewoond is aan strawwe oefening nie.

Bespreek rol wat spierglikogeen, en oortollige melksuur wat met 'n oormate van spierinspanning ontstaan, in die verband mag speel.

PROF. SMIT spreek mening uit dat die moontlikheid volgens hom bestaan dat „Monday Morning's Disease" en Vlekspiersiekte, dieselfde toestand kan wees.

PROF. VAN DER WALT maak melding van 'n geval van myohaemoglobinurie in 'n Eland wat gejaag is voor dit gevang is.

DIE PRESIDENT bedank dr. van Niekerk en vereenselwig hom met mening uitgespreek deur dr. Meeser.

ADDRESS BY MR. EVANS OF THE SOUTH AFRICAN GUIDE DOGS ASSOCIATION FOR THE BLIND

Mr. Evans gave a very instructive address on the way both the Guide-dog and the blind master were taught to collaborate in the interests of the blind.

The dog was taught always to respect his masters wishes and the blind master instructed how to keep the dog under control.

Unfortunately the film which was to have been shown had not yet been completed.

ADDRESS BY PROFESSOR T. BONADONNA

Professor T. Bonadonna, Professor of Zootechnics at the University of Milan and Director of the Lazarro Spallanzani Institute for Artificial Insemination in Milan, in his address stressed the urgent need for stepping up animal production throughout the world in order to meet the demand for food of animal origin for the rapidly increasing human population.

As Secretary General of the Vth. International Congress on Animal Reproduction and Artificial Insemination which is to be held at Erento in North Italy, on 6–13 September 1964, he detailed the organization of that Congress.

There will be four sections, namely (1) Biology of reproduction; (2) Morphology and physiology of reproduction; (3) Pathology of reproduction; and (4) Artificial insemination.

Each section will include a number of Symposia by world famous specialists.

Between 1,000 and 1,500 delegates are expected from all parts of the world. In view of the abnormally large number of factors which have a retarding influence on animal production on the Continent of Africa, Professor Bonadonna appealed to all concerned with this problem, to ensure that as many delegates as possible from the Republic attend the Congress and contribute towards the discussions.

THE SOCIAL FUNCTIONS AND ENTERTAINMENTS

Get-together at the Continental Hotel

A "get-to-gether" was arranged at the Continental Hotel on Monday evening 23rd. September 1963. Members were able to meet each other and renew acquaintance.

A very pleasant evening was spent in this way.

Attendance at the Opening Ceremony

A large number of members and distinguished guests attended the opening ceremony which was performed by the Hon. Dr. H. F. Verwoerd, Prime Minister of the Republic.

Immediately after the opening a very pleasant ceremony was conducted when the Hon. Mr. P. M. K. le Roux Minister of Agricultural Technical Services was presented with the unique Scroll containing the Coats of Arms of the Republic, the Town of Oudtshoorn, the le Roux family, and of the Association, in recognition of the award to him of Hon. Life President.

Entertainment of the ladies

A number of ladies spent a very pleasant morning visiting Braak's Flower Farm.

Many ladies were present at the opening ceremony.

Visit to the new animal hospital at the National Zoological Gardens

Those who were not engaged in sport were given the opportunity of seeing the new animal hospital which has recently been erected at the National Zoological Gardens.

The Social Events

A Civic Cocktail Party was arranged at the Fountains Kiosk on Wednesday 25th. September, and a Buffet-Supper and Dance on Thursday 26th September.

These functions were very much enjoyed by members and their wives and lady friends.

The presentation of the prizes won at the sporting events, was undertaken by the President and Mrs. Steyn.

The Sporting Events

A very pleasant afternoon was spent at tennis, golf and bowls at the Pretoria Country Club. The Golf trophy was won by Prof. S. van Heerden and the bowls trophy by Drs. Diesel, G. F. van der Merwe, S. W. J. van Rensburg and G. Sutton.

No competition took place for the Tennis Trophy.

The theiler Memorial Lecture

The brilliant lecture given bv Prof. C. Remington F.R.S. on Pink Tooth was greatly appreciated by all wo attended. It is trusted that this will be one of many such lectures arranged for the benefit of members at the time of Congress.

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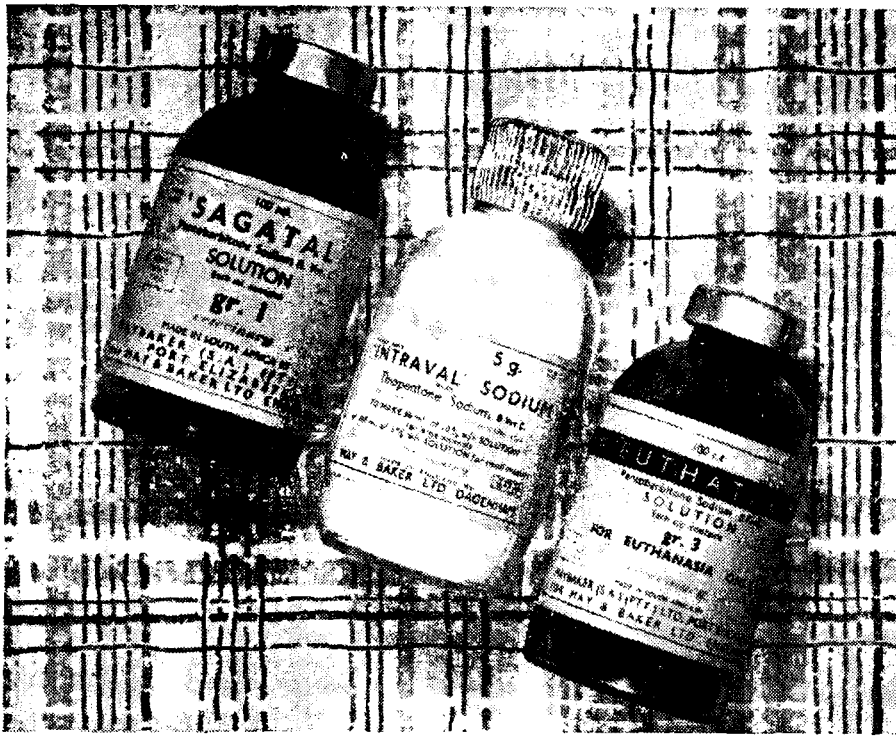

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THE BUSINESS MEETING

Minutes of the Fifty-Eighth Annual General Meeting held in the Auditorium of the Faculty Building, Onderstepoort on Wednesday 25th. September, 1963.

PRESENT:

Dr. H. P. Steyn (President).
Prof. R. Clark (Vice President), the Secretary.
(Dr. A. M. Diesel) and the following members:—

Abrams, L., Adelaar, T. F., Alexander, R.A., Anderson, P., Azzie, M., Barrie, N., Basson, P. A., Bakker, S. K., Barnard-B. J. H. Belonje, P. C., Bishop, G. P., Bisschop, P. J. N., Blome, field, L. C., Bosman, P., Botes, H., Bothma, R., Boardman, N., Botha, P. B., Breytenbach, V. M., Brown, J. M. M., Brownlie, J. F., Cameron, C. M., Coetzee, H. G. J., Coetzee, L., Coles, J. D., Collier, P. N., Colly, L. P., Cotton, C. J., Craig, C. L., Davis, P. A., Dames, H. D. P., De Lange, M., De Boom, H. P. A., Dent, G. C., De Villiers, O. T., Dickson Campbell., Dore, J. L., Du Preez, J. H., Du Plessis, J. L., Du Plessis, A. H., Du Toit, R. M., Du Toit, I., Ebedes, H., Edwards, L. T., Ehret, W. J., Erasmus, B. J., Erasmus, J. M., Fair, A. E., Flight, C. H., Frean, J. R., Galpin, W. E., Greathead, M. M., Grobler, J., Grosskopf, J. F. W., Hearn, E. M., Hellig, H. ,Huyser, J. H., Hobbs, W. B., Hofmeyr, C. F. B., Hugo, P. P., Horwitz, B. M., Howell, R. J., Horak, I. J., Irwin, D. H. S., Jansen, B. C., Jenkins, W., Kleeberg, H. H., Kuge, E. B., Keep, W. E., Krige, J., Kruger, J. L., Langlands, W., Lambrechts, M. C., Langbridge, F. W., Langen, E., Le Roux, J. M. W., Le Roux, P. H., La Grange, A. B., Loveday, R. K., Lubbe, A. M., Louw, A. J., Louw, Jac., Louw, T. A. T., Louw, P. J., Mansvelt, P. R., Malherbe, W. D., Mason, J. H., Marnewick, J. J., Meara, P. J., McFarlane, I. S., McDonald, C. T., McMillan, D., McHardy, W. M., McNab, E., Meeser, M. J. N., Muller, C. J., Nesbit, J. W., Osbourn, D. E., Oosthuizen, J. J., Owen, N. C., Paine, B. T., Petrick, S. W., Pols, J. W., Pretorius, J. L., Ryksen, W. J., Reinecke, R. K., Robson, T., Rous, R. C., Roos, C. J., Rossiter, L. W., Schutte, A. P., Schmidt-Dumont, A. M. A., (Miss)., Scheuber, J. R., Schuss, J., Schultz, K., Smit, J. P., Smit, P. J., Smit, D. J., Shone, D. K., Snyman, P. S., Snyman, J. H. D., Snyders, S. L., Snyders, A. J., Stevens, G. J. H., Solomon, S. (Mrs.), Strydom, H. F., Steyn, D. G., Steenekamp, G. J. H., Terblanche, H. J. J., Thornton, D. J., Thorold, P. W., Thomas, A. D., Trengove, R. B., Theron, H., Trace,G ., Truter, D. E., Tustin, R. C., Uys, P. L., Van der Veen, R. R., van Drimmelen, C. G., Van Heerden, A., Van Heerden J. S., Van Rensburg, S. W. J., Van Rensburg, S. J., Van Rensburg, G. F., Van Niekerk, J. W., Van

Niekerk, C. H., van den Heever, L. W., Van der Merwe, J. P., Van der Merwe, C. F., van der Walt, K., Van Schalkwyk, I., Veenstra, T. Viljoen, J. H. B., Wacher, D. C. L., Warnes, W. E., Weiss, K. E. Williams, J. G., Winterbach, P. B., Wilkins, C. A., Worthington, R. W., Zschokke, M., Zwarenstein, J. J.

APOLOGIES FOR ABSENCE:

Drs. Barnard, W. G., Du Toit, P. J., Viljoen. P. R., McIntyre, G., Turner, S. G., van Niekerk, J., Watt, J. M., Matthew, A., De Kock, G.

IN MEMORIAM

Before opening the proceedings the President requested members to stand in reverence to Dr. N. F. Viljoen who had passed on since the last Annual Meeting.

THE PRESIDENT then welcomed all members, expressed the wish that the deliberations would be fruitful and conclusive and declared the meeting correctly constituted.

Item 1.—CONFIRMATION OF THE MINUTES OF THE FIFTY-SEVENTH ANNUAL GENERAL MEETING (PUBLISHED IN THE JOURNAL OF DECEMBER 1962)

The President was authorised to sign these minutes as correct.

Item 2. MATTERS ARISING FROM THE MINUTES OF THE PREVIOUS MEETING

RESOLUTIONS FROM THE 57th A.G.M.

Besluit No. 1

DIE PRESIDENT voel dat die kwessie van 'n tweede Fakulteit vir Veeartsenykunde, nou taamlik geopenbaar is en die vergadering het besluit om die saak tydelik daar te laat. Die hoop is uitgespreek dat die saak later volledig ondersoek sal word.

DR. O. T. DE VILLIERS thanked the President for the progress so far made and complimented him on the lucid explanations he had offered in his presidential address on this subject. He thought he had impressed both the Prime Minister and the Minister of Agricultural Technical Services and it was not unlikely that there would be a change of front.

Besluit No. 2

DIE PRESIDENT verduidelik dat die Raad hierdie saak met sy vergaderings op 18.3.63 en 13.5.63 bespreek het en is van mening dat publisiteitsmedia op die prestasie van die professie gebaseer moet word.,

Die vergadering het die voorstelle van die Raad so aanvaar.

Resolution No. 3

THE PRESIDENT explained that Dr. Tarr, Prof. Jansen, Dr. Lambrechts and himself, as the Sub-Committee appointed to consider this resolution had never met on account of the difficulty of all being present at the same time. Council had considered the matter and in particular assertions that the State Veterinarians concerned with the Diagnostic Centres had on occasions acted in competition with private practitioners.

Council was not able to satisfy itself that there was sufficient evidence to substantiate this assertion and the President felt that the matter should now be discussed.

After a brief discussion it was clear that concrete examples of competition with private practitioners could not be satisfactorily cited.

DR. EDWARDS assured the meeting that there was no intention on the part of the Division of Veterinary Field Services to obstruct the progress of the private practitioner, on the contrary, the practitioner was invited to collaborate in the scheme and in that way to improve his practice.

The matter is also referred to under *Item* 12 *General.*

Resolution No. 4

The attention of the meeting was drawn to the English translation of the relevant portion of the minutes of the Veterinary Board as published on page 487 of the September 1963 issue of the Journal.

PROF. JANSEN verduidelik dat die Engelse vertaling foutief is en dat die notule van die Veearts Raad soos in Afrikaans in die Tydskrif van die S.A.V.M.V. uiteengesit korrek is. Hy maak dit duidelik dat die Register van Veeartse wat in die toekoms gepubliseer word, alleen die grade wat behaal is op die gebied van suiwer Veeartsenykunde erken sal word. Die Veearts Raad sal die saak baie sorgvuldig nagaan wanneer die regulasies opgestel word. Die Veearts Raad het geen belang by die sosiale status van 'n veearts — sy Vereniging mag daarin belang stel.

PROF JANSEN explained further that he had set out the matter comcomprehensively in a letter to the Registrar of the Royal College of Veterinary Surgeons to which no reply had yet been received. He had recently discussed the matter with Prof. Weipers, the President of the College, who accepted the South African point of view.

Besluit No. 5

DIE PRESIDENT verduidelik dat hierdie saak onder die aandag van die Raad vir die laaste drie jaar is.

Die verslag van die onderkomitee is met die jongste Raadsvergadering bespreek en met sekere wysigings aangeneem. Afskrifte van hierdie rapport sal aan alle lede binnekort onder dekking van 'n verduidelikingsbrief verskaf word.

Die President maak sekere opmerkings en lees dele van die verslag.

The following resolution proposed by Dr. Alexander and seconded by Dr. Pols was unanimously adopted by the meeting:—

> "*Having heard the explanations made by the President on behalf of Council this* 58*th. Annual General Meeting of the S.A.V.M.A. approves the actions taken by and endorses the opinions expressed by Council*".

Item 3. PRESIDENTSVERSLAG

Die President het die volgende Jaarverslag oor die werksaamhede van die Vereniging voorgedra.

> Vanjaar is daar nie soveel om verslag van te lewer as die vorige paar jaar nie, hoofsaaklik omdat daar minder onder-komitees werksaam was.
>
> Ek stel voor om ten eerste verslag te lewer aangaande die manier waarop die resolusies van verlede jaar se vergadering afgehandel is.
>
> Daar was weer sewe Raadsvergaderings en soos gewoonlik is 'n massa van roetine werk afgehandel.

Een van ons vernaamste take van die jaai was die maatreëls wat getref was om so ver moontlik te sorg dat die amendamente aan Wet 16 van 1933 so vlot as moontlik deur die Volksraad goedgekeur sou word. U is alreeds bewus van die besondere suksesvolle verloop van die taak en ek sal dr. Jansen, Voorsitter van die Veeartsraad, later vra om die belangrikste veranderinge aan die Wet aan die vergadering te verduidelik.

Die resolusies van verlede jaar is as volg tot dusver afgehandel.

1. Resolusie aangaande die wenslikheid van 'n tweede Fakulteit voorgestel deur dr. Jansen en gesekondeer deur dr. O. T. de Villiers.

'n Brief is destyds aan die Minister van Landbou-tegniese Dienste gerig in verband met die aangeleentheid. Sy antwoord was dat aangesien Fakulteits geriewe op Onderstepoort uitgebrei word om 45 instede van 30 studente per jaar op te neem daar geen verdere onmiddelike behoefte aan 'n tweede fakulteit sou wees nie.

Ek het 'n verdere brief aan hom gerig gedurende Julie vanjaar en gevra na 'n onderhoud om die en andere veeartsenykundige aangeleenthede met hom te bespreek. Sy antwoord was dat aangesien hy alreeds met sy Openingsrede by ons Kongres van verlede jaar, asook in die Volksraad, verduidelik het waarom hy en die Kabinet nie binne afsienbare tyd die stigting van 'n tweede fakulteit kan oorweeg nie, hy nie bereid was om 'n onderhoud toe te staan nie.

My antwoord hierop het u gister met die Presidentsrede gehoor, en ons sal nou moet wag op verwikkelinge onder belanghebbende groepe voor ons sal kan aflei of daar enige wysiging aan Kabinetsbeleid gaan wees.

Ek sou slegs graag hier wil byvoeg dat die teekanting van die Minister en die Kabinet vir my onverklaarbaar is, en dat dit interessant sou wees om te kan vind wat die werklike bron van die teekanting is. As daar professionele eenparigheid was aangaande die noodsaaklikheid van 'n tweede fakulteit kan ek nie glo dat daar enige opossisie van die Kabinet sou wees nie. As daar professionele besware geopper word sou ek graag wou weet op grond waarvan die besware geopepr word.

Aangesien die saak van die uiterste nasionale belang is sou dit redelik wees om 'n openbare verklaring van die besware te verwag sodat die professie ten minste in die geleentheid sou wees om te besluit of die besware werklik goed gegrond is. Die feit dat daar in werklikheid nog geen goed gegronde besware teen 'n tweede fakulteit geopenbaar is nie laat die indruk dat dit slegs amptelik beleidssake mag wees wat die verwagte vooruitgaan strem.

2. 'n Resolusie dat alle moontlike publisiteitsweë ondersoek moet word om die „professionele beeld onder alle bevolkingsgroepe reg te stel."

Na behoorlike oorweging het die Raad besluit dat:
„advertising was anathema to the interests of the veterinary profession, and that the desired publicity should come from service and application to duty".

3. Besluit nr. 3 het versoek dat 'n onderkomitee aangestel word om die stigting van streekslaboratoria op 'n bevredigende grondslag te verseker.

Die doel van die besluit was eintlik om onetiese konkurensie tussen Staatsamptenare en praktisyns te probeer voorkom.

'n Komitee bestaande uit drs. Jansen, Lambrechts, Tarr en die President is benoem. Dit spyt my egter dat die komitee nooit saamgeroep is nie.

Drs. Jansen en Lambrechts het verklarings gedoen omtrent departementele beleid en dit is aanvaar as voldoende. Indien daar verdere klagtes in verband hiermee is kan dit dien as 'n besprekings punt by ons verdere verrigtinge vandag.

4. Besluit nr. 4 het gegaan oor die gebruik van die titel „M.R.C.V.S." en ek sal dr. Jansen vra om die besluit van die Veeartsraad hieromtrent later te verduidelik. Die besluit is reeds in ons Tydskrif van September 1963 bekend gestel.

5. Besluit nr. 5 gaan oor veeartse in kommersieële instansies. U Raad het besluit om 'n rondskrywe aan alle lede hieromtrent te stuur. Dit sal u eersdaags bereik.

Daar is onder andere besluit dat die vertolking van die toepassing van die gedragskode nie net op veeartse in kommersieële instansies betrekking moet hê nie, maar wel ook op alle geemplojeerde veeartse.

U Raad aanvaar die grondbeginsel dat self-geemplojeerde kollegas se regte en lewensmiddele ten volle beskerm moet word deur geemplojeerde persone, en dat laasgenoemde geensins moet konkureer met die praktisyn nie.

Die balansstaat en die inkomste en uitgawe vir die jaar is rondgestuur en ek verwys slegs na een belangrike item naamlik die verdere vermindering aan die verlies aan ons Tydskrif na R1,179.77. Ons batige saldo was R164.37.

Die word beskou as 'n baie bevredigende toestand veral aangesien die verlies aan ons Tydskrif gereeld en stelselmatig daal.

Ons ledetal het gedurende die jaar toegeneem met 23 terwyl daar slegs een bedanking was.

Die President en Sekretaris het gedurende die jaar verskillende takvergaderings bygewoon. Ons Onder-Presdient het ook twee takvergaderings bygewoon. Ek wil graag van die geleentheid gebruik maak om ons waardering van die gasvryheid wat ons tydens die besoeke van kollegas geniet het uit te spreek. Ek het ook 'n nieamptelike besoek aan die Kaap en Stellenbosch afgelê. Daar het my vrou en ek meer tyd tot ons beskikking gehad vir ontspanning as met tye van amptelike besoeke.

Graag wil ek namens my eggenote en myself my dank aan my kollegas betuig vir die gasvryheid en vriendelikheid wat ons oral ondervind het. Dis is sowaar 'n riem onder die hart.

PROF. CLARK in a short address referred to the very considerable amount of work and time which the President had sacrificed for the benefit of the Association and proposed a sincere vote of thanks to the

President for all that he had done for the Association and for the profession.

Item. 4. WYSIGINGS AAN DIE VEEARTSWET (WET NR. 16 VAN 1933)—VEEARTSWYSIGINGSWET NR. 49 VAN 1963.

PROF. JANSEN spreek die vergadering toe en gee 'n kort opsomming van die Veeartswysigingswet nr. 49 van 1963.

Hy verduidelik verskillende aspekte van die wetgewing op vrae wat aan hom gestel is en verseker die vergadering dat die Veeartsraad alle kontensieuse aspekte in aanmerking sal neem wanneer die regulasies opgestel word.

The significance of physiological experimental surgery under this Act and under the Animal Protection Act was referred to.

Item 5. LIDMAATSKAP

(*a*) *Sterfgevalle*

DIE PRESIDENT het daarop gewys dat een lid, naamlik dr. N. F. Viljoen sedert die laaste vergadering oorlede is.

(*b*) *Bedankings*

Een lid het gedurende die jaar bedank het die President gesê.

(*c*) *Verkiesing van nuwe lede*

Die volgende nuwe lede is eenparig deur die vergadering aangeneem:

IN BESIT VAN B.V.Sc. PRETORIA

Cotton, C. G.....	P.O. Box 365, Krugersdorp.
Craig, S. A.....	Veterinary Dept. c/o Veterinary Office, Lobatsi, B.P.
de Beer, A. S.....	P.O. Box 3, Rust der Winter, Transvaal.
de la Rey, R.....	c/o Director of Agriculture, Windhoek.
de Vos, I.....	Privaatsak 25, Ermelo.
Dommann, C. J.....	232 Main Street, Waterkloof, Pretoria.
Engelbrecht, J.....	Tweedeweg 15, Cloverdene, Benoni.
Erasmus, J. A.....	Cradockstraat 3, Bedford, Kaap.
Fair, A. E.....	P.O. Box 23, Ladysmith, Natal.
Jacobs, J. C.....	c/o Crelco, Biano, via Elizabethville, Katanga.
Krige, J.....	Posbus 71, Potgietersrus.
Kunnen, H.....	P.O. Box 1, Sandown, Johannesburg.
Lambrechts, H. B.....	Private Bag 2408, Louis Trichardt.
Morgenthal, J. C.....	P.O. Onderstepoort.
Nesbit, J. W.....	Fairfell, P.O. Box Howick, Natal.
Rippon, C. B.....	Springvale, Box 14, Highlands via Grahamstown.
Schürmann, J. G.....	Vermeulenstraat 460, Pretoria.
van der Watt, J. J.....	181 Queens Street, Kensington, Johannesburg.
Wilkens, C. A.....	Posbus 502, Bloemfontein.

IN BESIT VAN OORSESE GRADE

Deense Grade

Krog, F.....	Veterinary Dept., P.O. Box 6, Maun via Francistown, Bechuanaland Protectorate.
Jensen, C. A. S.....	Veterinary Dept., Serowe, Bechuanaland.
Norgaard, J.....	c o Veterinary Dept., P.O. Box 251, Mafeking.

Britsegraad

Townsend, G. H.....	Veterinary Research Laboratories, Pvt. Bag, Lobatsi, Bechuanaland.

Australiesegraad

Dommisse, M. R.....	8, Beauleigh Mansions, Kenilworth, Cape Town.

INSTELLING VAN LEWENSLANGE ERE-PRESIDENT

DIE PRESIDENT verduidelik dat onder Klousule 10 van die Konstitusie 'n Lewenslange Ere-President deur minstens drie lede van die Raad voorgestel moet word en op 'n Algemene Vergadering verkies moet word.

Die saak is by voorafgaande Raadsvergaderings bespreek en hy versoek dat die vergadering die nodige magtiging verleen.

Na verder bespreking van die saak is die volgende voorstel eenparig aangeneem.

> "Having heard the explanation made by the President on behalf of Council, this 58th. Annual General Meeting of the S.A.V.M.A. approves the action taken by and endorses the opinions expressed by Council in extending Honorary Life Presidency to the Hon. Mr. P. M. K. le Roux".

Item 6. CONSIDERATION OF REPORTS

(*a*) *Income and Expenditure A/c and Balance Sheet*

Copies of these accounts were circulated to all members well in advance of the date of the 58th. A.G.M.

The meeting unanimously adopted the statements.

(*b*) *Reports by Standing Committees*

(*i*) *Editorial Committee*

This Committee met regularly throughout the year to consider manuscripts presented for publication and generally to promote the interests of the Journal of the Association. It also assisted the Congress Committee in the planning of the 58th. A.G.M.

(*ii*) *General Purposes Committee*

This Committee met during the year to consider matters referred to it by Council and contributed, in collaboration with the Finance and Editorial Committees, towards the planning of the 58th. A.G.M.

(*iii*) *Disciplinary Committee*

This Committee met to consider mileage charges concerned with a Veterinarian employed by a Co-operative Society, although the position changed when the employed Veterinarian left the service of the Co-op.

(*iv*) *Finance Committee*

This Committee met on several occasions to consider assistance to dependents of deceased members and loans to students.

It assisted, as a member of the Congress Committee in the planning of the 58th. A.G.M.

(*v*) *Representative on the Advisory Committee of the Department of Education Arts & Science—Dr. P. J. Meare—on the future training and examination of Health & Meat Inspectors.*

Dr. Meara rendered valuable service on this Committee on behalf of the Association and has submitted his report to Council.

(*vi*) *The Permanent Committee of the World Veterinary Association*

Prof. Jansen conveyed the greetings and compliments of the Permanent Committee of the World Veterinary Association.

(*vii*) *Trustees Committee of the Veterinary Faculty Fund—Theiler Memorial Lecture.*

DR. ALEXANDER proposed a vote of appreciation to the Tuistees Committee of the Veterinary Faculty Fund for the brilliant lecture delivered by Prof. Rimington as the first Theiler Memorial Lecture.

He considered that the appeal made during the lecture for the acquisition of a fertile cow or bull clinically affected with Pinktooth should be relayed to all members of the profession with the view to the purchase of such animals by the Chief, Veterinary Research Institute, Onderstepoort.

DR. D. J. SMIT raised the question of reduction in Congress fees.

THE PRESIDENT agreed to submit the matter to Council for its consideration.

The meeting expressed its appreciation to the Committees for the services they had rendered.

DR. ALEXANDER drew the attention of the meeting to the appointment of Dr. P. J. du Toit as Chancellor of Rhodes University in succesStion to Dr. Shonland.

The meeting requested the secretary to address a letter of appreciation and congratulations to Dr. P. J. du Toit on this achievement.

Item 7. WORLD VETERINARY ASSOCIATION

No discussion arose in connection this matter as information on the subject had previously been suitably advised.

Item 8. PUBLICATION OF THE JOURNAL OF THE ASSOCIATION

PROF. JANSEN wished to compliment the Editorial Committee on a much improved Journal.

PROF. CLARK in replying paid tribute to members and to the contributors who had assisted the Editorial Committee in bringing about the change.

Item 9. EMPLOYED VETERINARIANS AND AMPLIFICATION OF THE GUIDE TO PROFESSIONAL ETIQUETTE

As this matter had previously been discussed under Item 2 no further discussion took place.

Item 10. CURRENT COMMITTEES OF INVESTIGATION

(*a*) *Committee on the Registration of Stock Remedies*

Prof. K. van der Walt was concerned with this investigation and as far

as can be ascertained the report is presently receiving the attention of the Department of Agricultural Technical Services.

(*b*) *Committee on the Contamination of Milk and Meat by Antibiotics and Insecticides.*

Dr. L. W. van den Heever was concerned with this investigation. This report too is receiving the attention of the Department of Agricultural Technical Services.

Item 11. NOTIFICATION OF ELECTION OF OFFICE BEARERS FOR THE YEAR 1963/64

THE SECRETARY advised the meeting that the result of the election was as follows:—

President — Dr. H. P. Steyn — Elected unopposed.
Vice President — Prof. R. Clark — Elected unopposed.
Members of Council
Prof. B. C. Jansen
Prof. C. F. B. Hofmeyr
Dr. L. W. van den Heever
Dr. J. H. R. Bisschop

The meeting considered that private practitioners should be encouraged to take a more active part in the administration of the Association.

THE PRESIDENT in thanking members for the trust they had in him by electing him for the fifth year in succession referred to the time when, on first being elected he pledged to dedicate himself to the interests and needs of the Association and of the profession. He had done this to the best of his ability. He thanks members for the confidence they had shown in him. He appreciated the honour and trust very sincerely.

He expected no monuments of the nature suggested by one member and desired no particular honour. Any success which the Association would attain would be the result of the support given by the Association, to any particular venture or expression of opinion.

Item 12. GENERAL

(1) *Onredelike kompetisie met privaat praktisyns deur streekslaboratoria personeel.*

DR. STEVENS meen dat tegnici wat opgelei word nadoodse ondersoeke onderneem.

DR. EDWARDS verduidelik dat hoewel leerlingskursusse deur die afdeling Velddienste gegee word, maak hierdie persone geen diagnose nie; hulle neem monsters in die afwesigheid van opgeleide veeartse en die word by die streeks laboratoria ingehandig en ondersoek.

DR. STEYN vra hoe die leekstaf die nodige monsters selekteer as hulle nie 'n diagnose probeer maak nie.

DR. EDWARDS verduidelik dat hulle versoek word om roetine monsters te neem van alle organe wat blykbaar abnormaal is.

THE PRESIDENT felt that care would have to be exercised to ensure that laymen avoided any expression of opinion on diagnoses if requested to do so by stock owners.

DR. EDWARDS explained that where ever possible the state veterinarian undertook the post-mortem and seldom was a learner-technician sent out.

DR. STEVENS beweer dat waar die Staatsveearts nie beskikbaar is nie kan die privaatveearts versoek word om die werk te doen.

DR. VAN DEN HEEVER meen die privaat praktisyns moet meer gebruik word waar die Staatsveeartse nie beskikbaar is nie.

DR. DAVIES considered that the Diagnostic Centres should have been introduced when private practitioners had been established.

DR. HORWITZ considered that there was a lot of disquiet among private practitioners. There seemed to be no reason why post-mortems on poultry by private practitioners should not be encouraged.

DR. REDELINGHUYS meen dat alhoewel hy deur die streekslaboratoria gehelp is, sal almal daarby baat as die praktisyn tot 'n groter mate in die saak erken word.

It would make for more goodwill.

DR. LOVEDAY advocated part-time State employment.

DR. CAMERON ondersteun dr. Loveday en meen dat deur deeltyds emplojeering, die boere die maksimum veeartsenydienste sou ontvang.

DR. DORE considered that there would be greater benefits to everyone if the establishment of part-time State service was encouraged.

Veterinarians would then become established in the smaller towns and be able to make a living.

DR. COLES pointed out that Veterinarians had set up practices at Umzinto and Highflats but had to leave. Veterinarians should be encouraged to go to rural areas. All that was necessary was goodwill'

Dr. Ryksen mentioned that in the O.F.S. ten rural practitioners had to abandon their practises in about 4 years. The farmer's had consequently suffered. He was pleased to listen to the pleas for more rural practitioners.

He was preparing a resolution.

DR. EDWARDS considered that practitioners derived considerable benefits from diagnostic centres. These centres were not taking work away from practitioners as Dr. Horwitz seemed to think.

He would welcome complaints of interference by the regional laboratory staff.

The survey work which was being planned by the diagnostic centres must lead to improved services by the practitioner.

THE PRESIDENT felt that when the bread and butter of the practitioner was at stake, there was often difficulty, but he felt that there was no need to send out a technical officer if the private practitioner was available.

Perhaps sufficient thought had not been given to colleagues practising under difficult conditoins. He appealed for closer collaboration on this subject.

DR. P. S. SNYMAN verduidelik dat dit nog altyd die beleid van die Departement was om inspekteurs te gebruik om die roetine werk te doen om die Staatsveearts die geleentheid te gee om die werk te doen waarvoor hy opgelei is. Die inspekteurs is in areas gevestig en dit is moeilik om hulle deur privaat praktisyns te vervang wanneer enrstige besmetlike siektes soos bek en klouseer voorkom. Staatsveeartse mag alleen Staatswerk onderneem.

After further discussion DR. RYKSEN proposes a resolution but withdraws it in favour of the following proposed by DR. COLES and seconded by Prof. Clark and carried unanimously.

> "This 58th Annual General meeting of the S.A.V.M.A. requests Council to take whatever steps are necessary to promote rural private practice and establish harmonious and fruitful co-operation between the State and the rural practitioners".

DR. THORNTON advanced a scheme designed to promote improved collaboration between commercially employed veterinarians and private practitioners.

His resolution was lost.

Dr. McFarlane proposed that Dr. Sutton be thanked for his services to the Congress.

DR. GROSSKOPF stel voor dat die Groepsvergaderings met die agenda aan alle lede van die Vereniging geadverteer word.

DR. HORWITZ reminded the President that the Annual Meeting at Cape Town for next year still had to be decided on.

THE PRESIDENT asked Dr. Horwitz to submit a recommendation which would receive Council's consideration.

PROF. HOFMEYR enquired about the time of the Civic Cocktail. He was advised that the time was between 5 and 7.30 p.m. at the Fountains Kiosk.

THE PRESIDENT intimated that the visit to the Zoo had been arranged for 2.00 p.m. on Thursday and that the cars should collect at the Hotel Continental.

DR. TRUTER voel dat die Fakulteit Ouditorium nou te klein geword het en dat die opening van Kongres in die toekoms in die Stad gereel moet word.

Item 13. PREPARATIONS AND ARRANGEMENTS FOR THE 1964 CONGRESS

The President reminded the meeting that the next Congress was due to be held at Cape Town.

The Cape Western Branch had suggested the following provisional programme:

DRAFT — CONGRESS PROGRAMME

Day	*Morning*	*Afternoon*	*Evening*
Sunday	—	—	Optional Registration, Informal Party.
Monday	Registration Convocation Welcome (By Mayor) Opening Opening: Trade Exhibits Papers	Papers Ladies, Tour of Cape Town and visit to Castle	Mayoral Party*
Tuesday	Papers Ladies: Visit to Kirstenbosch and Groot Constantia	Lunch at Kirstenbosch Cape Point tour	Theiler Memorial Lecture
Wednesday	Tour in Western Province	& Visit to K.W.V.	—
Thursday	A.G.M. Ladies: Visit to Administrator's Residence	SPORTS	Formal Dance Bouffet Supper
Friday	PAPERS Ladies: (1) Trip up Table Mountain or (2) Visit to Koopmans de Wet or (3) Visit to Art Gallery	Papers and Group Meetings Adjournment	—
Saturday	Tuna Fishing and Organised Sport.		

* *Mayoral Party* National President (& wife) meets Mayor and Moyoress in his parlour at 5.20 p.m.
With Mayor receives guests at 5.30 p.m.
Party ends at 7.00 p.m.

THE PRESIDENT suggested that the arrangements for the forthcoming Congress should be planned at once, to encourage members to attend at Cape Town in numbers.

A number of members, including Professor van Heerden, Dr. Grosskopf, Dr. McHardy, Dr. van Schalkwyk, Dr. J. D. Smit, felt that it was necessary to revise the Congress fees, fees for participation in sporting events etc. The Council and the Congress Committee should therefore consider ways and means of reducing the costs of attendance at Congresses.

A resolution by Professor van Heerden was withdrawn in favour of a suggestion that the matter should be left as a decision by Council, and that the suggestions made would be borne in mind.

Item 14 RESOLUTIONS

1. Proposed by Dr. J. D. Coles, seconded by Prof. Clark:—

"This Fifty-Eighth Annual General Meeting of the S.A.V.M.A. requests Council to take whatever steps are necessary to promote rural private practice and establish harmonious and fruitful co-operation between the State and the rural practitioners".

Item 15 ADJOURNMENT

PROF. CLARK sought permission to fill the role of Dr. Charlie Osrin and to propose a very hearty vote of thanks to the chair.

DR. MEESER proposed a vote of thanks to the Secretary.

THE PRESIDENT thanked members for a very successful meeting in every respect, from the opening by the Hon. Prime Minister, right through to the close.

He particularly thanked all contributors, the Chief of the Onderstepoort Research Institute, Mr. Coetzee and his staff of very able workers including Mr. Erasmus and Mr. Marais who were responsible for the seating arrangements, the floral decorations and the many facilities which were so often accepted as a matter of course. He thanked Dr. Sutton, and the lady helpers on whose shoulders the heavy tasks of registration rested viz. Mrs. van Rensburg, Mrs. Malherbe and Mrs. le Roux. He thanked Mrs. J. D. Smit and her very helpful band of workers whose efforts at producing the teas and lunches were indeed most successful.

To the Total Oil Products for the public relations service and public address system—in particular Mr. Cumins and Miss. Maxwell he extedned thanks.

To the S.A.B.C., Landbouradio and the Daily and Agricultural press he extended the particular thanks of the Association for reporting in detail on the Congress.

He requested that the Secretary write to the Secretary of the Exhibitors Association and to Maybaker thanking them for their contributions to the Benevolent Fund. He should also write to the Country Club and thank the Secretary for extending the Clubs facilities to members attending the Congress.

THE PRESIDENT reminded members that contributions for the Congress at Cape Town next year were being anxiously awaited.

Eggs in their thousands are used for research and testing the potency of Canilep. Many potency and safety tests are carried out before Canilep is released to do its job of providing all-in protection against the four major canine diseases.

the research behind Canilep

Glaxo research into the problems of canine protection has been intensive and productive. It resulted first in the production of separate and combined vaccines (Canilin-D, Canilin-H and Lepsolin) against the four major canine diseases and, more recently, in the introduction of Canilep. This is the first British vaccine to combine a living egg-adapted distemper virus vaccine with a killed hepatitis vaccine and a killed bacterial vaccine against the two forms of leptospirosis. Only two injections of Canilep are needed to give all-in protection against four diseases.

The making of Canilep

The making of Canilep is a considerable technical achievement involving the manufacture and blending of four components, each of which needs to be carefully balanced to ensure a high level of immunity to each disease. The testing of this vaccine requires experience, skill and knowledge of a high order and is a long and arduous process.

Proving the potency of Canilep

An example of the tests carried out on Canilep, which go beyond the normal requirements, is that used to determine the potency of the distemper component. A blood sample is taken from an animal previously vaccinated with Canilep. This sample is prepared in a series of dilutions, and injected, with distemper virus, into fertile hens' eggs. After a period of time, the eggs are opened and the chorio allantoic membranes are examined for virus growth. In this way, it is possible to determine the dilution of serum at which growth of the virus is inhibited. This indicates the level of immunity achieved. Each examination needs many eggs and this is only one of many tests carried out by Glaxo workers to prove the safety and efficiency of Canilep.

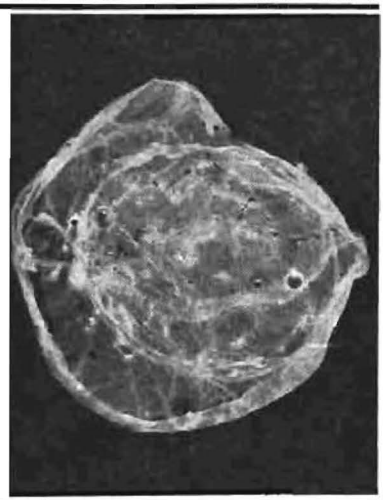
The advantages of Canilep protection

Background work in the research and analytical laboratories of Glaxo ensures that you have a highly efficient vaccine for canine protection, which is convenient to administer.

Low-cost immunity

Canilep gives all-in protection very effectively, simply and safely. It allows for continuation of protection with booster doses and it costs you much less than protection against four diseases with single or dual vaccines.

Inoculating fertile hens' eggs with distemper virus before incubation



Chorio allantoic membrane showing effect of virus growth

Harvesting of infected chorio allantoic membrane after virus growth

CANILEP

today's most advanced form of canine protection

Complete course

One vial of freeze-dried canine distemper, hepatitis and combined leptospirosis vaccine with water for injection and one ampoule of fluid hepatitis and combined leptospirosis vaccine. Price: **R3.00.**

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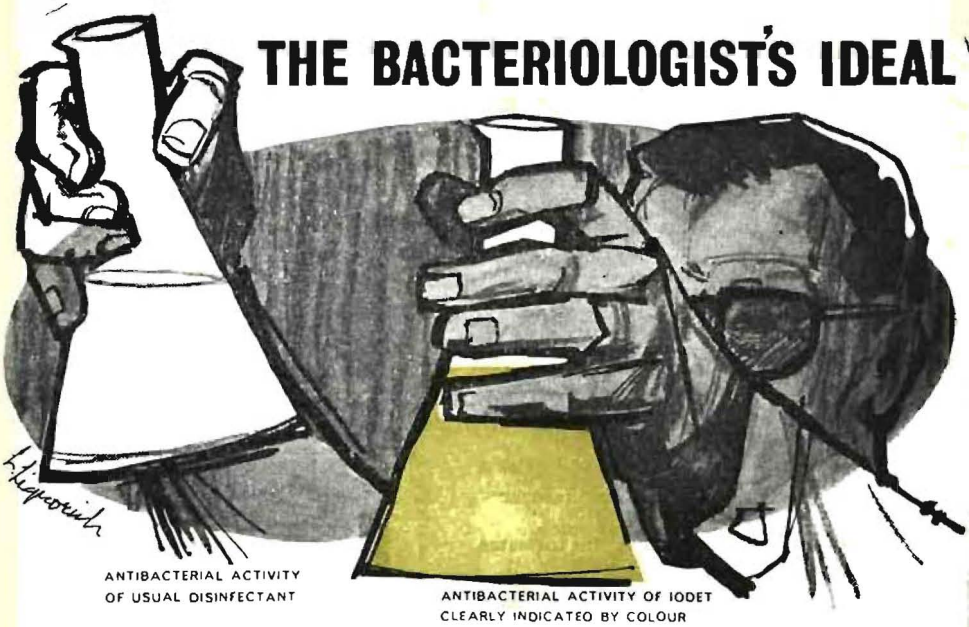

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PRELIMINARY STUDIES ON THE ADMINISTRATION OF A *STAPHYLOCCUS AUREUS* VACCINE TO SHEEP

C. M. CAMERON—Department of Bacteriology Veterinary Research Institute Onderstepoort.

Received for publication July, 1963.

SUMMARY

Effective buffering of the culture medium and selection of toxigenic single colonies were found to be vital factors in producing alpha haemolysin of high potency.

An adjuvant-cell-toxoid vaccine was produced which stimulated satisfactory antitoxin and agglutination titres in sheep using only two injections of 5 ml. each. The first injection produced a more intense response than the second which was given four weeks after the first.

The antigenic heterogeneity of Staphylococci was also demonstrated.

INTRODUCTION

Antitoxin plays an important role in rendering a body immune against Staphylococcal infections especially with regard to the severity of the disease and generalized toxic effects[1,2]. The function of antibodies against the cellular constituents of a vaccine should, however, not be overlooked.

The combined use of cells, toxoid and formalized whole cultures has been advocated and given better results than purified toxin or cells alone[1,3]. High antibody titres in cows, sheep and goats, and immunity has however only been obtained with adjuvant cell toxoid vaccines after administering multiple large doses.[4,5,6,7,8,9,10].

Protection could also only be demonstrated against a challenge with virulent organisms of the homologous strain.[5,6,7,8,9,11,13].

The object of this investigation was to determine whether satisfactory antitoxin and agglutination titres, using two doses only, could be obtained. This would be more practical under field conditions. Simultaneously the agglutinin response to two heterologous strains was investigated.

MATERIALS AND METHODS

Strains:

The Wood 46 strain* was used for vaccine and toxin production. Strain B.U. was isolated by a colleague from a case of gangrenous mastitis in a sheep and strain 24282 from a case of actue mastitis in a cow.

* Obtained from the South African Institute for Medical Research.

Both strains were coagulase positive, fermented manitol anaerobically and produced alpha haemolysin and small amounts of beta haemolysin.

Standard antitoxin:

Staphylococcal antiserum containing ca. 900 international units per ml. alpha antitoxin, was used.**

Titration of haemolysin:

Samples from cultures to be tested were centrifuged and twofold serial dilutions of the supernatant liquids were made in 0.11 M. phosphate buffer, pH. 6.8[13]. One ml of each dilution was transferred into consecutive tubes in a series. One ml. of a 3 per cent washed, rabbit red cell suspension was then pipetted into each tube. The mixtures were incubated at 37°C for one hour when the results were read.

The end point was taken as the highest dilution of toxin causing complete haemolysis.

Titration of Lh.

Dilutions of the toxins were prepared as above and 0.25 ml of diluted (to contain 4 I.U./ml) antitoxin was then added to each dilution and well shaken. Combination was allowed to take place at room temperature for 30 minutes after which a rabbit red cell suspension was added as above. Tests were read after the tubes had been incubated at 37°C for one hour. The end point was taken as the tube containing the highest dilution of toxin showing complete haemolysis.

Titration of sheep sera for alpha-antitoxin:

Test Toxin: The test toxin was prepared as for the vaccine. The cells were removed by centrifugation, the toxin was sterilized by Seitz filtration and stored at —20°C. The Lh of the toxin was determined by the method described.

The Test: Serial twofold dilutions of the inactivated sera were made in physiological saline. The test toxin was diluted in saline to contain 4 Lh. per ml and 0.25 ml added to each tube. The tubes were left at room temperature for 30 minutes when 1 ml of a 3 per cent washed rabbit red cell suspension was added to each. Tests were read after incubation for one hour at 37°C and the endpoint taken as the highest dilution of serum showing no haemolysis.

Agglutination tests

The method used was based on that described by Stern & Elek. (1951)[14].

Antigens

The strains used were grown on blood tryptose agar in Mason tubes at 37°C overnight. The growth was washed off with 0.5 per cent Phenol saline and the desity adjusted to correspond to Brown's opacity tube No. 4.

** Obtained from Wellcome Research Laboratories, England.

The prepared suspension was stored at 4°C and used for a maximum period of three days.

THE TEST

The sera were inactivated in a water bath at 56°C for 30 minutes. Serial twofold dilutions were made in physiological saline in 1.0 ml amounts and 1.0 ml. of the antigen added to each dilutoin. The tubes were incubated overnight at 37°C and then read. The titre was taken as the highest dilution giving a three plus agglutination.

CULTIVATION AND MEDIUM

Satisfactory toxin production could not be obtained using Veal infusion[4] or heart brain infusion broth[15]. A series of tests were therefore conducted to study the influence of certain variables on toxin production.

The basic medium was prepared as follows:

Minced lean beef was boiled in tap water (1 Kg of beef, to one litre of water) for one hour. The broth was decanted and 0.3 per cent NaCl, 2 per cent bacteriological peptone and 0.5 per cent yeast extract (Difco) added. The pH was adjusted to 7.5 with N. NaOH and the medium filtered through paper pulp. Other ingredients were then added for the various experiments as required.

Dow Corning antifoam "B" was added at a rate of 0.1 ml per 500 ml medium. Sterilization was obtained by autoclaving for 30 minutes at 15 lb pressure.

All these experiments were carried out in 1 liter Erlenmeyer flasks containing 500 ml of the respective experimental medium.

Each flask was inoculated with 5 ml of an overnight Tryptone soya broth (Oxoid) culture. The soya broth was inoculated with serum broth cultures which had previously been tested for haemolysin. (vide infra).

Twenty per cent carbondioxide in air from a gas cylinder* was continuously bubbled through the medium, using glass spargers. The tests were conducted after 72 hours incubation at 37°C.

EXPERIMENTAL ANIMALS

Two year old Merino wethers were used for the experiments in sheep. They were housed in a camp at Onderstepoort and were dosed with phenothiazine two weeks prior to the commencement of the experiments.

The dairycows used in the field trial were predominantlygrade Friesland. They were all from commercial herds supplying fresh milk to the Municipality of Germiston.

RESULTS

A. CULTURE MEDIUM

The following factors were found to influence toxin production:

(1) *Selection of Single colonies.*

Single colonies of the Wood 46 strain were tested for lysogenicity prior to use for vaccine and toxin production. Single colony cultures were made in 10 per cent serum broth. After incubation for 48 hours at 37°C

in an atmosphere of 20 per cent carbon dioxide in air, the culture liquid of each tube was tested for the presence of haemolysin by the method described. Only tubes showing a titre of 1/128 or higher were used to inoculate the tryptone soya broth, used to seed the Erlenmeyer flasks[16].

When single colony selection was not applied the ultimate toxin titres were at least one dilution lower.

(2) *Hydrogen ion concentration.*

The influence of pH and the advantageous effect of buffers can be deducted from table 1.

TABLE I

THE INFLUENCE OF BUFFERS AND pH ON TOXIN PRODUCTION AVERAGE VALUES.

Buffer	Molarity	pH initial	pH final	alpha-haemo-lysin
Sodium Potassium Phosphate.....	0.140	6.0	4.9	0.0
Sodium Potassium Phosphate.....	0.140	6.5	5.0	4.0
Sodium Potassium Phosphate.....	0.140	7.0	5.0	24.0
Sodium Potassium Phosphate.....	0.140	7.5	5.3	128.0
Sodium Potassium Phosphate.....	0.10	8.0	5.4	128.0
Sodium Potassium Phosphate.....	0.075	7.5	5.7	32.0
Sodium Potassium Phosphate.....	0.10	7.5	6.1	72.0
Sodium Potassium Phosphate.....	0.20	7.5	6.3	138.7
tris-(hydroxy-methyl)-amino-methane	11.227 G/1			
Maleic acid	10.750 G/1	7.6	7.05	188.0
NaOH.....	4.305 G/1			

The best results were obtained when triss buffer[17] was incorporated in the medium. A 0.2 M. phosphate buffer, pH 7.5 was also satisfactory and was used in the medium employed for vaccine production. More alkaline conditions, intermittent adjustment of the pH and buffers with a higher buffer capacity retarded growth and toxin production.

(3) *The addition of* 0.225 *per cent Glucose*[18] *and* 0.3 *per cent Magnesium sulphite*[19] markedly improved toxin production.

(4) *In some instances the addition of* 2 *per cent sterile equine serum* promoted toxin production, but this effect was not consistent.

The final medium was composed as follows:—

	per cent
Bacteriological peptone (Difco).....	2.0
Yeast extract (Difco).....	0.5
Sodium chloride.....	0.3
$MgSO_4.7H_2O$.....	0.3
Glucose.....	0.225
$Na_2HPO_4.2H_2O$ } Buffer.....	0.2 M, pH 7.5
KH_2PO_4 }	
Equine serum.....	2
Broth.....	to 100

Vaccine was produced using the above medium by the methods outlined. After the quality tests had been carried out, 1.0 per cent Formalin was added to the whole culture which was then incubated until toxoiding was complete. This took from 4 to 10 days with different batches. Thereafter 1.0 per cent Potassium alum[5] was added as an adjuvant. The vaccine was stored at 4°C in rubber capped bottles.

B. Antibody Response in Sheep:

(1) A small scale experiment using various vaccines was performed in sheep.

Table II

Response in Sheep to various Antigens.

Average Values

Antigen Type	Values	Quantity in ml.		Agglutination titre	Alpha antitoxin I.U./ml.
		First Injection	Second Injection		
Toxoid alone 1.0% Formalin..	4 Lh. /ml.	5	10	12.0	12.0
Heat killed cells (60° 60').....	0.4% p.c.v.	5	10	32.0	4.0
Formalized cells (.2% Formalin)	0.4% p.c.v.	5	10	16.0	0.3
Adjuvant cell toxoid (whole culture....	4 h.t.d. /ml. & 0.4% p.c.v.	5	10	27.0	8.7

From the results shown in table 2, it can be deducted that heat killed cells stimulate a higher agglutination titre than formalized cells, confirming the results of Ramon et al (1953)[20].

(2) In a more extensive experiment two doses of 5 ml vaccine were administered subcutaenously to each of twenty four two year old Merino wethers with an interval of four weeks. A third injection was given 27 weeks after the second injection.

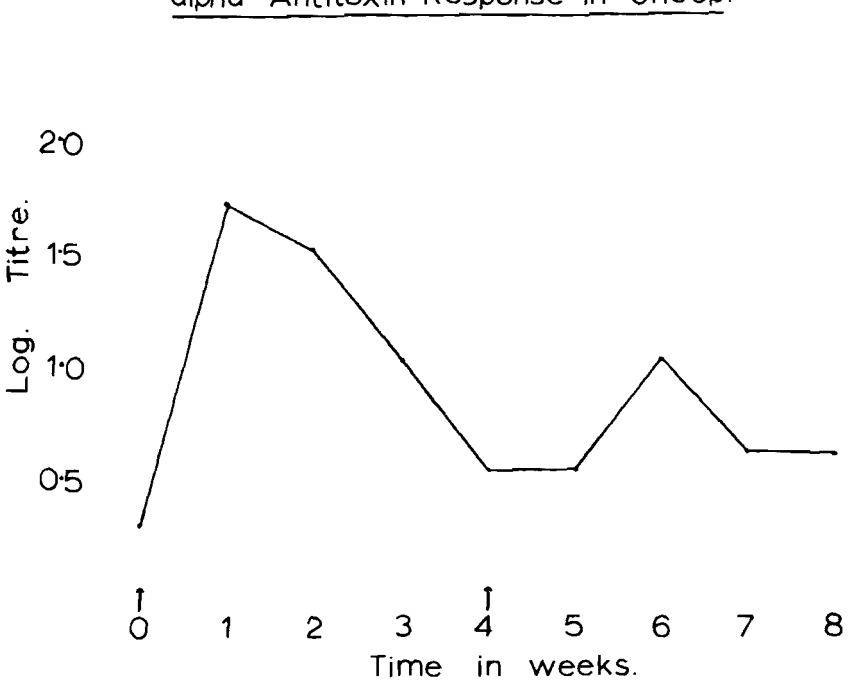
Antitoxin and agglutinin titrations against three strains were carried out at weekly intervals by the methods described.

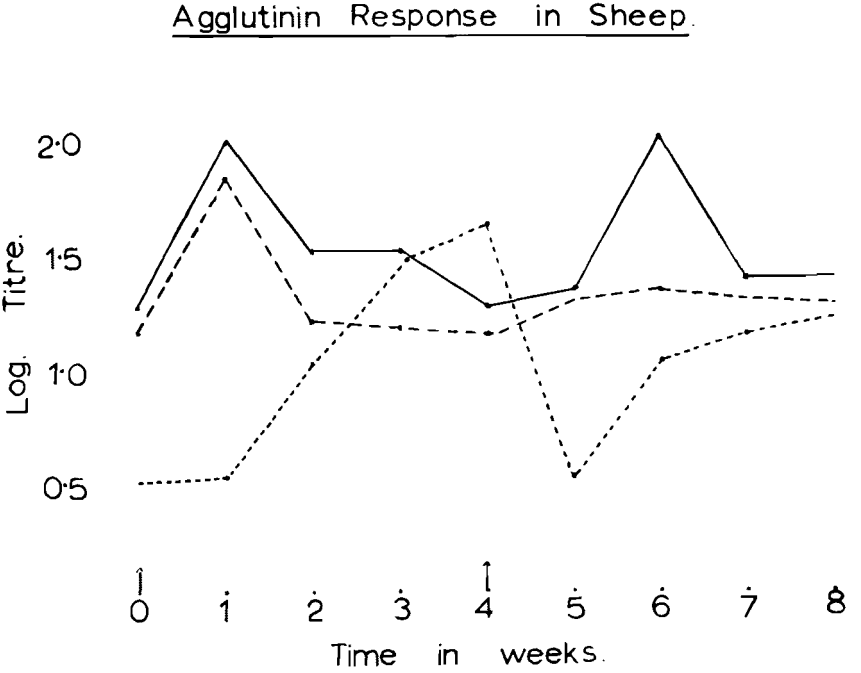
The results are presented in table 3 and graphs 1 and 2.

TABLE III

AVERAGE AGGLUTINATION AND ANTITOXIN TITRES IN TWENTYFOUR SHEEP AFTER ADMINISTRATION OF ADJUVANT CELL TOXOID

Time in Weeks	Alpha-Antitoxin		Agglutination					
			Wood 46.		B.U.		24282	
	I.U./ml.	Log titre	titre	Log titre	titre	Log titre	titre	Log titre
0	1.583	0.1996	20.10	1.3033	11.31	1.0535		—
1	60.300	1.7803	123.7	2.0934	52.74	1.7222	4.761	0.6777
2	31.35	1.4963	13.45	1.1288	6.795	0.8322	7.771	0.8905
3	17.43	1.2413	31.77	1.5020	29.29	1.4668	15.10	1.1789
4	3.510	0.5453	18.44	1·2656	10.08	1.0033	24.84	1.3952
5	3.365	0.5270	23.97	1.3797	17.45	1.2417	2.912	0.4641
6	5.822	0.7651	82.04	1.9140	20.39	1.3095	11.31	1.0535
7	3.886	0.5894	4.163	0.6194		—	10.67	1.0280
8	4.000	0.60205	29.34	1.4675		—	13.45	1.1288
30	1.000	0.0000	54.71	1.7381		—		—
34	6.819	0.8337	104.6	2 0193		—		—





Antitoxin titres rose rapidly to a maximum of 60.3 I.U./ml within a week after the first injection.[5] Sheep with a natural antitoxin titre reacted more markedly. The titre dropped rapidly. Response to the second injection was slower and much less intense. After the third injection the decline in titre was slower. These findings are in accordance with the observations of Blobel & Berman (1962)[6].

The agglutination titres followed approximately the same pattern. The graph for strain B.U. closely followed that of the Wood 46 strain, but to a slightly lower titre. They appear to be antigenically related. Agglutinating antibodies to strain 24282 were much slower in developing and the titre was much lower. This strain apparently does not share any major antigen with the former two.

These results are comparable with those obtained with a commercial adjuvant-cell-toxoid vaccine which was tested simultaneously[21].

Clinical observations

The vaccine was administered to 700 head of dairy cows in commercial herds severely plagued with Staphylococcal mastitis. Each animal received two doses of 5 ml each intramuscularly with an interval of four weeks. A general decrease in the incidence of mastitis was observed and those cases which did occur were less severe.

Admitting that other factors, e.g. improved management and hygiene all attributed, the results were still quite promising. Similar observations have also been made bv other authors.[4,5,6,7,22,23].

Discussion

Although it has many practical advantages, the production of Staphylococcal alpha toxin in fluid medium has not been found very satisfactory. Where high toxin values are required, production on semi-solid agar seems to be preferable[24,25].

These investigations have shown that a satisfactory level of antitoxin can be obtained in sheep, using only two injections of 5 ml each of an adjuvant-cell-toxoid. This aspect of Staphylococcal immunity remains important and further work to determine the optimal practical schedule for the administration of a vaccine to obtain maximal antitoxic titres, is required.

The diversity of Staphylococcal somatic antigens has again been demonstrated. The complicated antigenic structure of Staphylococci[14,26,27,28,29,30] and the fact that limited cross protection only has been obtained, stress the importance of the cellular portion of vaccines. The success obtained with somatic antigen vaccines in man, cattle, rabbits and mice is most encouraging.[30,31,2,32,33].

The newly demonstrated Smith surface antigen which is capable of preventing phagocytosis, may become a major factor in staphylococcal immunity.[31,35].

Acknowledgements

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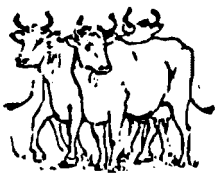

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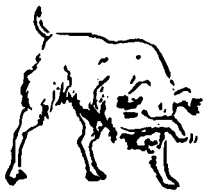

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THE DIAGNOSIS AND TREATMENT OF BILIARY FEVER (BABESIOSIS) IN THOROUGHBREDS

G. P. Retief — Private Practitioner, P.O. Box 123, Mooi River, Natal.

Summary

The diagnosis and treatment of Babesioses in Thoroughbreds based on the case histories of 30 cases treated over 2 years are discussed. The efficiency of 7 different preparations is compared.

Introduction

Although this paper is primarily concerned with the treatment of biliary fever, some observations on the diagnosis of the disease are included.

Diagnosis

1. A *body temperature* of 103–106°F is a fairly constant indication. However, in two cases it remained constant throughout at 100.5°F. In such cases the examination of a bloodsmear is essential for diagnosis.

2. *Mucous membranes* almost constantly show icterus and anaemia. Petechiae are frequently seen especially on the conjunctiva and can be regarded as pathognomonic.

The vaginal and conjunctival mucous membrane often show marked differences in intensity of anaemic or icteric changes; the vaginal mucous membrane seems to be the most constant and reliable for diagnostic purposes.

3. *Tachycardia* is present in about 50 per cent of cases, and is, in the author's opinion, not a very reliable diagnostic symptom.

However, the pulse rate is most important in assessing the prognosis. A rate of 60 per minute and over in the case of adult horses can be regarded as dangerous. From 80–100 per minute can be regarded as grave.

4. *Bloodsmears* stained with *Stevenyl's Blue* and *Leishman stain* shows up *Babesia caballi* fairly well. *Nuttalia equi* is often missed however. Giemsa shows up *N. equi* to the best advantage.

An effort should be made to identify the piroplasm concerned, as certain drugs seem to be more effective against a particular piroplasm (vide infra).

Treatment

Treatment should naturally be aimed at eliminating the piroplasms as soon as possible. Response to drugs varies, depending upon the species and the area.

Very often it becomes necessary to try more than one drug if no response is obtained from the use of the initial one. In two cases the author had to use six different piroplasmicides over a period of 10–14 days before at last finding a drug giving any response. (Both these cases died however, and showed degeneration of the livers and nephrosis: the only two mortalities up to date).

Specific Treatment

The following drugs are listed in order of personal preference, with notes on administration and side-effects.

1. *Euflavine 5 per cent Solution*
   Dosage: 2ml. per 100 lb. bodyweight.
   Administration: Slowly i/v. In the case of intractable horses the use of a twitch and local anaesthesia at the site of injection are advisable. Should there be any doubt whether some of the drug has escaped perivascularly, a fairly large amount (approx. 50 ml.) of saline should be injected subcutaneously over the site in an attempt to dilute it.
   Response: Very rapid: Within 8–12 hours.
   Specificity: *B. caballi* amd *N. equi.*
   Side Effects: In two cases side re-actions were similar viz. tachycardia for approximately 5 minutes, hypernoea, patchy perspiration, extension of neck with grinding of the teeth.
   Antidote: Intravenous antihistamine therapy gives quick relief of symptoms.
2. "*Berenil*" (*DI*-(4 *Amidinophenyl*) — *Triazene* — (*N*-1:3) *Diaceturate*—$3H_2O$).
   Dosage: 2 mg. per lb. bodyweight.
   Administration: Due to excessive swelling, pain and side re-actions (vide infra) the following method of administration is suggested Dissolve 1.05 gm. "Berenil" in 25 ml. sterile water. Administer by very deep hypodermoclysis in divided doses at different sites at the rate of not more than 10 ml. per site, with an interval of at least 3 minutes between injections.
   Response: Fairly slow 12–15 hours.
   Specificity: *B. caballi.*
   Side Effects: Noted in three cases and corresponded closely to those seen with Euflavine, except that there appeared to be increased peristalsis with concomitant pain and defaecation. Peculiar side to side movements of the lower jaw with the head and neck fully extended were seen in all three cases. This was thought to be due to pain in the neck muscles where they were injected.
   Antidote: Fairly rapid abatement of symptoms was achieved with atropine $\frac{1}{2}$–1 gr. subcutaneously.
3. *Trypan Blue*
   Dosage: 1 gm. per 500 lbs. bodyweight.
   Administration: Dissolve 1 gm. trypan blue in 100 ml. sterile water and administer i/v, not faster than 100 ml. per 20 minutes. Should adverse

symptoms (vide infra) occur stop administration until symptoms have abated.

Side Effects: Observed in one case: tachycardia, hyperpnoea, general distress and patchy perspiration; symptoms abated slowly after antihistamine therapy.

4. *Phenamedine*: 40 *per cent* (*M & B*)

Dosage: 1.5 ml. per 100 lb. bodyweight.
Administration: Dilute 50–50 in sterile water and give subcutaneously in divided doses.
Specificity: *B. caballi.*
Side Effects: Severe swelling at site of injection. If undiluted an abcess forms.

5. *Quinine Dihydrochloride.*

Dosage: 1 gm. per 100 lb. bodyweight.
Administration: Dissolve in 1 litre 10 per cent dextrose saline and give by slow i/v drip.
Side Effects: One case developed toxic laminitis which cleared up slowly by applying ice-packs round the hooves.

6. "*Babesan*" (616′ *Diquinalylurea — Dimethosulphate*) 5 *per cent W/V*) *I.C.I.*

"*Pirevan*" (*uinuroniumQ Sulphate B. Vet. C.*) (*Evans*).
Dosage: 1 ml. per 100 lbs. bodyweight *with a maximum dose* of 6 ml.
Administration: Great care should be exercised in administering these potent drugs. The author never exceeds the rate of 1 ml. subcutaneously per hour i.e. if 6 ml. is administered it is injected over 6 hours.
Specificity: *B. caballi.*
Side Effects: Only two cases were given Babesan and no serious reactions were noted. However, both animals showed increased peristalsis, defaecation and mild colic, after each 1 ml. injection.
Antidote: ½ gr. antropine S.C.

7. *Oxy-Tetracycline*

Dosage: 5 mg./lb. slowly i/v.
Administration: A soluble powder was used and dissolved in 1 litre 10 per cent glucose saline.
Specificity: *N. equi*
Effectivity: The three cases treated with "Terramycin" responded as follows:

(*a*) Filly "Optical": slow response after two drugs had been used previously. The filly had a relapse 10 days later, which failed to respond to "Terramycin", but responded slowly to trypan blue

(*b*) Gelding "Captain Blood": responded to Terramycin rapidly after Euflavine and "Berenil" had no effect.

(*c*) Colt "Predominant": responded slowly but relapsed the same day. Rapid response with trypan blue.

8. *Diampron.* (*M & B*)
It is hoped that supplies of this drug will soon be made available to the author. Apparently very good results were obtained in Britain with this preparation.

Supportive Treatment

This should be aimed at getting the animal back to normal as soon as possible, and preventing liver and kidney damage as far as possible.

1. 10 *per cent Glucose Saline i/v* is essential to keep up the animal's strength and resistance; especially when it is not feeding. It also relieves the liver of one of its functions (glycogenolysis) and therefore staves off liver damage.

Glucose saline was used in all cases (2 litres per day where possible) until the temperatures returned to normal and the animals feeding well.

2. *Gluco-corticoids* are given on the first day as a routine. In the cases where it was not used, the animals took much longer to return to normal after the temperature dropped.

3. *Vitamin* B_{12} and *Vitamin B Comêlex* are usually administered on the second day, mainly to stimulate the appetite.

4. *In cases of prolonged illness* and where liver damage is suspected, crystalline-methionine was given[1].
Dosage: 12.5 mg/lb.
Administration: Dissolve the calculated and measured dose in 1 litre of glucose saline and administer slowly 1/v[1].

5. *Impaction and mild colic* were seen and treated symptomatically. Often good results were achieved with approximately ½ lb. Epsom salts in the drinking water.

After Treatment

After a bad bout of "Biliary" the kidneys should be "flushed[22] with a diuretic such as "Vetidrex" (Ciba) at the rate of 3 ml. i/v for three days, or a similar preparation administered.

Throughout the illness the animal should be fed a fair amount of "green food" if available, as well as bran.

To prevent relapses owners were cautioned not to let the animal out of its stall under any circumstances for at least three weeks. Thereafter it may slowly be taken out for walks. In a few cases animals were allowed to go out earlier because they started "fretting" and pawed their boxes etc.

The following table gives an indication of the efficiency of the various drugs used on the 30 cases treated by the author.

Name of Drug	No. of times Used	No. of times Effective	% Efficiency
1. Euflavine (Gonacrin)	29	16	55%
2. Trypan Blue	8	6	75%
3. Berenil	12	4	33%
4. Phenamedine	2	1*	50%
5. Oxy-Tetracycline	4	2 (1 relapse)	50%
6. Babesan	2	0	0%
7. Quinine di-HCL	1	1	100%

*One case on which Phenamedine was tried died the same night, and the autopsy revealed degeneration of the kidneys and liver, as well as sarcoma of the mesenteric lymph glands.

Discussion

It would seem from this table that trypan blue is the most effective drug against "Biliary" in the Mooi River district. However, it must be pointed out that 6 of the 8 times it was used, it was after two other drugs had been found to be ineffective. There is a strong possibility that there is synergism between various piroplasmicides, in whcih case the percentages given will not be a true reflection of the efficiency of the drugs.

Acknowledgements

My thanks are extended to Dr. A. Littlejohn for his valuable assitance and advice to a colleague in the first month of his practice.

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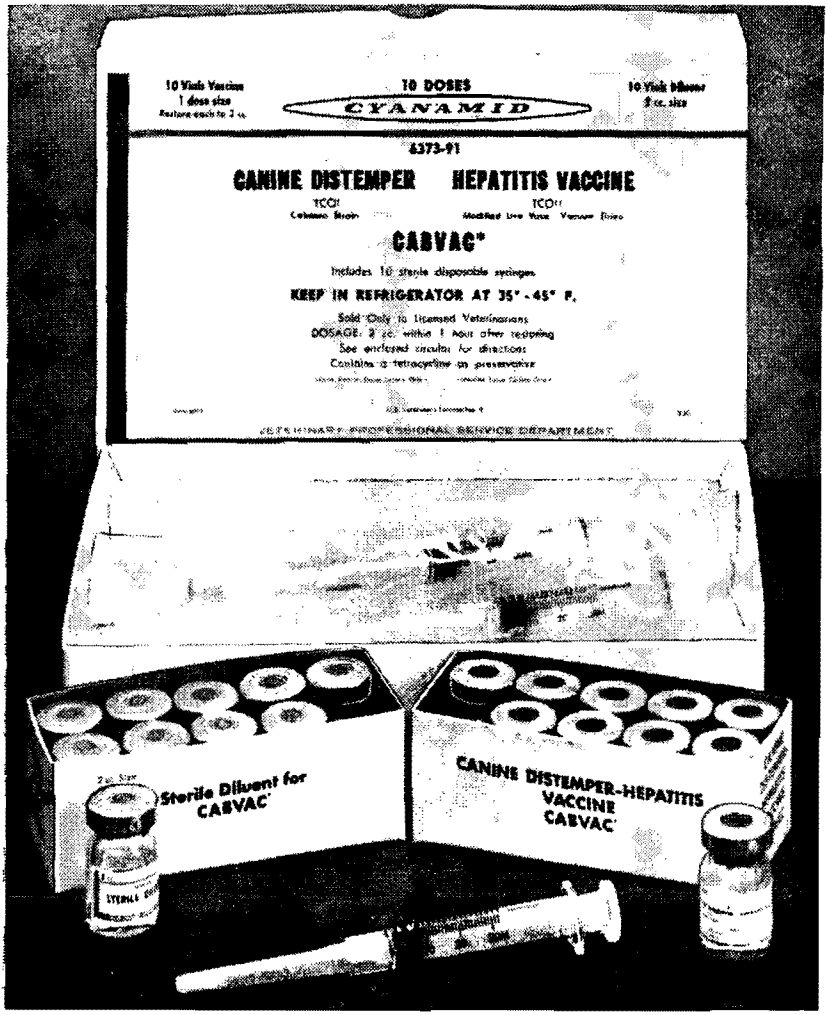

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TICKS INFESTING DOGS IN THE SALISBURY AREA OF SOUTHERN RHODESIA

J. M. GOLDSMID

Zoology Department,

University College of Rhodesia and Nyasaland, Salisbury.

SUMMARY

A brief survey of the ticks infesting dogs in the Salisbury area of Southern Rhodesia indicates that the commonest species are *Haemaphysalis leachi leachi* Audouin and *Rhipidephalis sanguineus sanguineus* Latreille. A further nine species of tick were also recorded, but in much smaller numbers.

Theiler[3] compiled a list of ticks and their hosts in Southern Africa but, to date, with the exception of a paper by Jack[1], no detailed papers have been published on the ticks infesting domestic stock in Southern Rhodesia, although Lawrence[2] published a paper on disease transmission by ticks. The present paper is an analysis of the ticks infesting dogs in the Salisbury area of Southern Rhodesia. The ticks were collected by local veterinarians from dogs brought in for treatment; the survey in thus not critical and merely serves to indicate which tick species infest dogs in this area and to give a rough guide as to the incidence of the various species. Details were also noted of the male to female ratio of all specimens sent in.

TABLE I.—TICK SPECIES FOUND ON DOGS IN THE SALISBURY AREA.

Tick	Number			
	Males	Females	Nymphs	Total
Haemaphysalis leachi leachi Audouin	86	387	1	474 (50.9%)
Rhipicephalis sanguineus sanguineus Latreille	161	129	—	290 (31.1%)
Rh. simus Koch	47	41	—	88 (9.5%)
Rh. appendiculatus Neumann	6	25	—	31 (3.4%)
Rh. pravus Dönitz	1	15	—	16 (1.7%)
Rh. compositus Neumann	1	8	—	9 (1.0%)
Rh. evertsi evertsi Neumann	—	1	—	1 (0.05%)
Boophilus decoloratus (Koch)	—	3	7	10 (1.1%)
Ixodes cavipalpus Nuttal & Warburton	2	6	—	8 (0.9%)
Otobius megnini (Dugès)	—	—	3	3 (0.3%)
Hyaloma truncatum Pomerantzev	1	—	—	1 (0.05)%
TOTAL	305	615	11	931

Discussion

It appears from the above survey that the most common ticks occurring on dogs in the Salisbury area are *Haemaphysalis leachi leachi* and *Rhipicephalis sanguineus sanguineus*. Of the other species, only *Rh. simus* and *Rh. appendiculatus* are found to occur in any numbers. The low incidence of *Rh. simus* might be due, as suggested by Dr. Gertrud Theiler (personal communication), to the fact that the specimens were mostly collected from urban dogs.

Jack[1] mentions that *H. leachi* is probably the commonest tick infesting dogs in Southern Rhodesia and also states that *Rh. sanguineus* and *Rh. simus* are common on these animals. However, he also records *Ixodes pilosus* Koch (the Russet Rick) as occurring on dogs. No speciments of this species were found during the present investigation, although eight specimens of *I. cavipalpus* were identified. It is thus suspected that Jack's *I. pilosus* was probably *I. cavipalpus*.

ACKNOWLEDGEMENT

I should like to thank Dr. Gertrud Theiler for reading the script and for her valuable suggestions.

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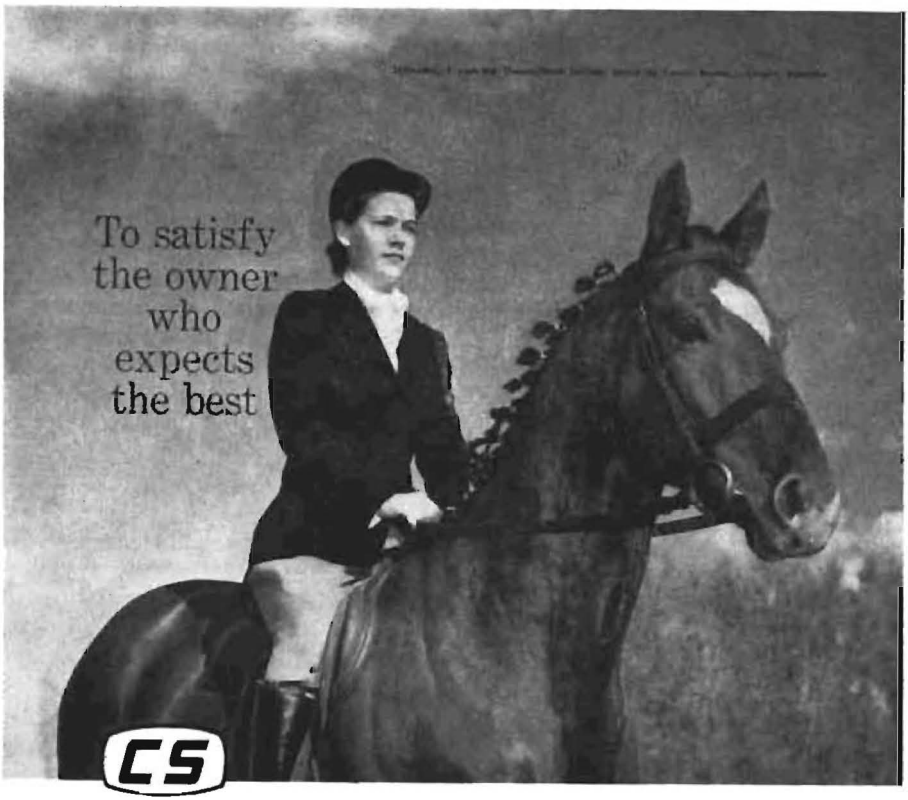

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SOME BRIEF NOTES ON SCHISTOSOMES OCCURRING IN ANIMALS

R. J. PITCHFORD—Bilharzia Field Unit South African Council for Scientific and Industrial Research.
Nelspruit, Eastern Transvaal.

A paper read at the Annual Meeting of the North-Eastern Transvaal Branch of S.A.V.M.A. June 1963—

I must thank you for asking me to speak to you on a problem which has been increasing in importance in this country ever since Harley first discovered human bilharzia in South Africa in 1864. At that time there was some suspicion that schistosomes might have natural hosts other than man but it was not until 1876 that Sonsino described *Schistosoma bovis* from cattle in the Nile delta. Harley however, was the first to depict the eggs of an animal schistosome when he described his first human case from Uitenhage. His drawings make it clear that his patient was suffering from a double infection of what would today be called *S. haemotodium* and *S. mattheei*. There is no need here to go into the contraversial subject of whether *S. mattheei* and *S. bovis* are two separate species except to say that there are morphological differences in the eggs of these two schistosomes by which they can be separated and secondly *S. mattheei* is capable of infecting man quite commonly whereas *S. bovis* has never been shown conclusively to be a human parasite in spite of the fact that it has been looked for systematically on numerous occasions in man in areas where it is extremely common in the domestic stock [4,5].

DISTRIBUTION

Schistosoma bovis is found in the Middle East, certain islands in the Mediterranean and down the Eastern side of Africa to about the equator and its snail intermediate hosts are members of the *Truncatus* group of the genus *Bulinus*. *S. mattheei* is found in the Southern half of Africa. On the West coast the animal parasite is *S. curassoni* described by Brumpt in 1931, but there is some doubt about the validity of this parasite. The snail hosts of *S. mattheei* are members of the *Africanus* and probably *Forskali* groups of the genus *Bulinus*. There are some curious anomalies in the distribution of these two parasites *S. bovis* and *S. mattheei*; for instance although human bilharzia is very common on the islands of Mauritius and Malagasy and in Egypt there is said to be no animal schistosomiasis in any of these three places. A similar situation exists in reverse on the islands of Corsica and Sardinia where there is no human bilharzia but a great deal of *S. bovis* in the stock. Several theories have been advanced for this curious state of affairs but no hard facts have yet appeared. The existance of the animal schistosomes without the human

parasite is perhaps explainable in some places on a temperature basis where the temperature is too low for the development of the human parasite in the snails; the non existance of *S. bovis* in Egypt has been explained on an immunity basis but no proof has been given.

Sheistosoma mattheei.

At this stage I think we might confine our attention to the Southern African parasite S. *mattheei* which was described by Veglia and le Roux from Onderstepoort in 1929[15]. The story of the finding of this parasite is probably well known but might be worth repeating. A certain Mr. Matthee was suffering from heavy sheep losses on his farm near Humansdorp in 1926. He noticed certain white objects in the mesenteric veins of the sheep that died and questioned the Government Veterinary Department about them. le Roux went down to investigate and found a very severe schistosome infection in the sheep[12]. At the time he advised Matthee to fence in the stream where the sheep were watering, and to give them water on the higher ground where there was a collection of ponds. This Matthee did and when I saw him some three or four years ago he was insistant that he had never had any trouble with the sheep since. A similar instance was reported by Strydom (1963)[13] in sheep from the Pongola area. Again the farmer was suffering from heavy sheep losses and severe schistosome infection was discovered at post mortem. Again the control lay in the provision of a pure water supply with dramatic results. These and a minor occurrance at Komatipoort are the only instances of schistosomes causing losses amongst sheep in South Africa that I know of but there must be others unless the good sheep raising areas of this country are too cold for the parasites to complete their development in the snail hosts and it is only when sheep are raised in warmer areas that the trouble starts.

S. mattheei is normally a gut parasite and has been found in a wide variety of naturally infected definitive hosts which include cattle, sheep, goats, impala, wildebeest, zebra, four rodent species, baboons, vervet monkey and man. In man the parasite seems to be evenly distributed between the bladder and the gut: in cattle about four per cent of infected beasts have lesions in the bladder and all of these seem to be in very heavily infected animals[7, 8]. The heaviness of the infection in animals seems to depend largely on the habits and the available water supply of the definitive hosts. Baboons which have been reported with very heavy infections spend a great deal of time playing and searching for food in water. Cattle often wade into water when drinking and almost always defaecate while they drink. They too can have very heavy infections. Game on the other hand spend very little time in water and their faeces is such that it dries rapidly thus killing any schistosome eggs that may be present in it. Sheep which are heavily infected appear to be dependant on a poor limited natural source of water. This was certainly so with the sheep at Humansdorp and with the sheep at Pongola where in each instance there was one dirty little creek where the animals drank. The same may be said of the *S. bovis* infections in Corsica and Sardinia. The only other animals I know which have been reported with severe schistosome infections are Lechwe and Situtunga infected with *S. margre-*

bowei and *S. leiêeri*[13]. Both these antelopes spend an enormous amount of time in the water. With upset of normal conditions schistosome infections in game could easily be converted to heavy loads especially where the water supply is limited.

With regard to *S. mattheei* infections in man cases have been reported from the Rhodesias, the Transvaal, Swaziland, Natal and the Eastern Cape; in fact the parasite has been reported from man from almost the whole of its endemic area. The large majority of these cases were contaminated with infections of *haematobium* and/or *mansoni* and no uncontaminated *mattheei* in man has yet been transmitted through laboratory animals. All *S. mattheei* which has been transmitted from man into laboratory animals has resulted in the production of a so called hybrid between *haematobium* and *mattheei* which, with continued transmission through rodents in the laboratory has reverted to *S. mattheei*[9]. This raises the question whether *S. mattheei* is capable of reaching the stage of egg production in man unless *haematobium* or *mansoni* are present as well. In other words a pure *mattheei* infection in man would possibly not reach further than the liver and die out there. The importance of *mattheei* infecting man with the production of a hybrid between it and *haematobium* seems to lie in the fact that the hybrid is capable of infecting not only several species of laboratory animals but cattle and sheep as well and presumably man as the original host was man. There are many areas in this country and other countries where conditions are such that large numbers of cattle are dependant for their water on the same limited supply as the human beings and in these areas *S. mattheei* reaches a high incidence in man of up to 40 per cent. Also a large number of the children in these areas have the so called hybrid eggs in their urine. So far only a few hybrid worms have been found in naturally infected cattle but these are sufficient to raise the question that in time a parasite might result which will be capable of infecting man and stock with equal ease and possibly replace the normal parasites *mattheei* and *haematobium* and produce a situation, with the added control difficulties, similar to that in the Far East where man and his animals are infected with the same parasite, *S. japonicum*.

Control.

It might be well to toutch on the control of *S. mattheei* in stock. As with all other schistosomes the disease is easily prevented by not going into potentially dangerous water. With cattle and sheep this is a comparatively easy matter to arrange as there must be very few places where it is not possible to supply drinking facilities from troughs for stock and at the same time prevent stock gaining access to natural streams and other waters by fencing. The argument against fencing is that the grazing along these streams is necessary during the winter months: it is a very sound and reasonable argument but it has been found that transmission of *S. mattheei* to cattle is largely seasonal and occurs mainly during the summer, also the amount of transmission at any time of the year is directly dependdant on the number of definitive hosts in immediate contact with the water. In addition the incubation period of the schistosome in snails during the winter is a matter of some three to four months under natural conditions

at Nelspruit. In colder areas it will be consideralby longer. During summer this incubation period in snails drops to about five weeks. We also know that in Nelspruit and most of the Lowveld, transmission of *S. mattheei* starts somewhere about the end of September or the beginning of October and ceases somewhere about the middle or end of January. These statements are based on findings over a four year period, from laboratory rodents immersed into field waters at weekly intervals and subsequently recovering the schistosomes from them[10]. There was an almost monotonous repetion of the transmission period every year in subsequently recovering the schistosomes from them[10]. (in press). There was an almost monotonous repetion of the transmission period every year in places like Komatipoort, Malelane, Kaapmuiden and White River, and I feel that there is little argument against fencing if the stock are allowed to enter inside the fence and get winter grazing from March to the beginning of September, when transmission to stock even with no control is minimal, and with the exclusion of the definitive host during the summer would almost certaintly be negligible: in fact this has been shown to be the case with *S. mansoni* in a stretch of water where the only control exercised was preventing human faeces washing into it from a compound, of 250 people and where in a matter of five months the transmission had dropped 90 per cent from the figures of each of the two previous summers. Unpublished data).

The alternative is the never ending and very expensive application of molluscicide which in this country is of doubtful value.

HUMAN SCHISTOSOMES IN NATURALLY INFECTED ANIMAL HOSTS.

(1) *Schistosoma mansoni.*

S. mansoni in South Africa has been found in about four species of rodent only[11], probably because it has not been looked for sufficiently in other animals but it seems highly unlikely that other animals which might act as definitive hosts would be important reservoir hosts of this parasite in South Africa. It has not been found in cattle, sheep or goats in this country but has been reported very recently in cattle from South America. Wild pigs have also been incriminated in South America, where the importance of these animals as reservoir hosts still has to be determined. As far as the rodents are concerned in this country it was felt, after two years study that they were of very little importance as reservoir hosts and should not be taken into consideration in any control scheme that might be envisaged. One of the main reasons for this statement was that the rodents were incapable of maintaining the infection amongst themselves without the outside assistance and contamination of waters by man. Also all naturally infected rodents had very light worm loads and a very small percentage were infected at all: 56 out of 3,672 examined[11]. In other countries, Kenya and Uganda, baboons and vervet monkeys have both been found naturally infected with *S. mansoni*[6]. The baboons had heavy worm loads and because of their longevity, up to about forty years, they might conceivably be of importance as reservoir hosts, depending on their habits in relation to man, but this has still to be shown. The only other animals found naturally infected with this parasite have been shrews in Egypt[3].

(2) *Schistosoma haematobium.*

S. haematobium presents rather a different picture and the only mammals found infected with this parasite other than man have been two pigs in Nigeria[2], both of which incidentally presented with lesions in the bladder, four sea lions from the Cairo zoo which had infections of *S. mansoni* as well[1], a doubtful infection in a vervet monkey in Kenya[6] and a doubtful infection of a rodent (*Otomys*) from Komatipoort[7]. In this last infection the eggs of the schistosome were identical to *S. haemotobium* and there was only one terminal spined schistosome female found in the *Otomys*: but when these eggs were passaged through laboratory animals, eggs were produced which were identical to *S. mattheei* and the only conclusion that could be reached was that some form of hybridisation had occurred in the *Otomys.*

Other Schistosomes in Africa.

With regard to the other schistosomes which occur in Africa very little is known about them. *S. margrebowei* is very difficult to distinguish from *S. japonicum*; the intermediate host remains unknown and the definitive hosts are antelopes; the same applies to *S. leiperi*. *S. rodhaini* has intermediate hosts of the genus *Biomphalaria* but the main definitive host is possibly unknown. It is an interesting parasite in that the cercariae are discharged at night in contrast to the others which are discharged during the day. It also has a very short incubation period in the snail host and reaches the stage of egg production in a shorter time that any other schistosome: a matter of some 4 weeks compared to *S. haematobium* for example which takes about 12 to 13 weeks and *S. mattheei* which takes 6 to 8 weeks.

Conclusion

It is quite obvious that a tremendous amount of work remains to be done on animal schistosomes more expecially with regard to the terminal spined parasites.

All told in Africa there are about half a dozen of these schistosomes occurring in man and animals. Although a few beginnings have been made in some places none of them has been studied systematically in either its natural definitive host or in laboratory animals. There are several reasons for this the chief being I think, that *S. mansoni* and the South American snail lend themselves so easily to laboratory work that the terminal spined worms have virtually been excluded from study. The human terminal spined schistosomes admittedly have presented certain difficulties in the past which are being overcome; *S. mattheei* in the laboratory presents a little difficulty with the snail host but is a schistosome which could be studied in its natural definitive hosts, sheep, goats or cattle from several different aspects with comparative ease and would I feel handsomely repay further work.

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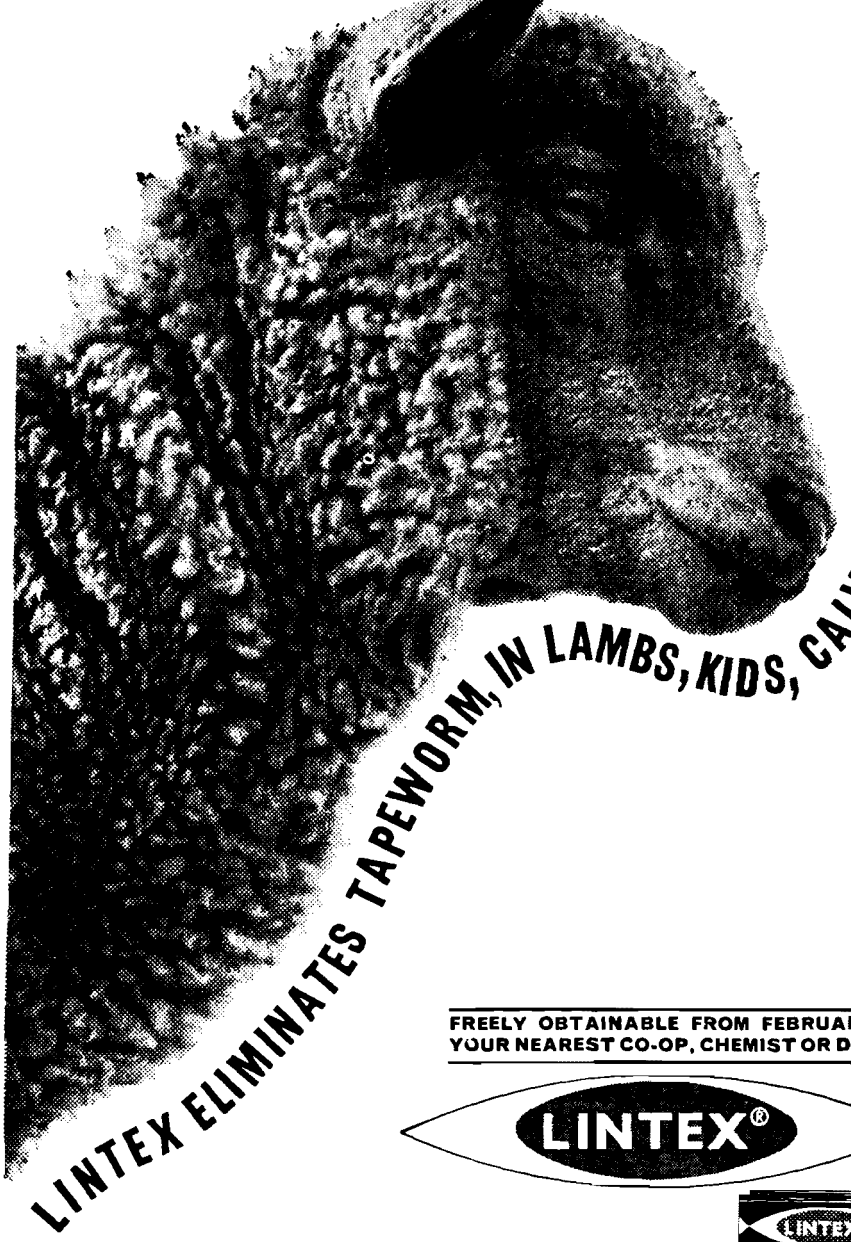

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CLINICAL OBSERVATIONS CHLORPOTHIXENE* AS AN ANAESTHESIA POTENTIATOR IN DOGS.

C. F. B. HOFMEYR.——Department of Surgery. Faculty of Veterinary Science, Onderstepoort.

SUMMARY

Chlorprothixene was tested as a tranquillizer, using intravenous pentobarbital sodium anaesthesia as a yard stick.

No undesirable effects were noted.

Tranquillization appeared to be relatively light and of short duration at dosage rates of 0.5, 0.75 and 1.0 mg/Kg body weight intravenously.

There appear to be no clinical differences at the dosage levels tested.

Anaesthetic potentiation was similar in all 3 groups varying between 10.8 per cent and 17.05 per cent.

INTRODUCTION

*Chlorprothixene (2-chloro-9(3-dimethylaminopropylidene)-thioxanthene, trans isomer) is a tranquillizer of the thioxanthene group. The literature refers chiefly to its use in psychiatry. Observations have been made on laboratory animals but only a few references to its use in the veterinary clinic have been found.

Erasmus[2] reported use of the drug in 159 dogs and four cattle. His dose in dogs was "1 mg/lb" intravenously. He concluded that it was an excellent tranquillizer safe to use. His findings were not supported by any data, however.

Bollwahn[1] used chlorprothixene in pigs. A marked sedative effect was obtained; after intramuscular injection of 3 mg/Kg body weight, effects appeared in 15 minutes and lasted 9 hours. Intravenous injection of 0.2 mg/Kg. caused tachycardia and lowering of blood pressure to the margin of collapse. Paradox reactions were obtained in 2–6 per cent of pigs. After premedication with 0.5 mg/Kg body weight 42–48 per cent of methitural sodium could be spared.

Lanz[4] working with 57 cattle, found the i.v. dose to be 0.25 mg/Kg body weight but it could be doubled with safety. Stergel and Wandrey[5] used prothizene, often in combination with methadone, on 300 dogs. The former drug was found to be safe. Injection was either i.v. or i.m. No exact dose per Kg body weight was given; dosage range being 3–6 mgm/Kg.

* Taractan (Roche).

In a group of 39 dogs, according to Sumner-Smith[6], the doses varied between 1.0–3.0 "mgm/lb" body weight, it being rarely necessary to exceed 2.0 "mgm/lb". Anaesthetic potentiation of 30–50 per cent was noted and effects were absent. The higher doses were not found to produce deeper tranquillity but only prolonged recovery.

As has been pointed out by Hofmeyr[3] the clinical assessment and determination of dosage of a tranquillizer are complicated by all the weaknesses of subjective judgement. Clear, unmistakable clinical signs are usually lacking, unless extremes of over-dosage are applied.

Materials and Methods

The present report covers 91 observations on dogs of mixed breed and size, almost all under a year, but a few up to 3 years of age and all clinically normal. It was decided arbitrarily to test out the dosage of the drug intravenously at 0.5, 0.75, 1.0 mgm per Kilogram body weight. This route was chosen, because it eliminated the objections concerning varied rates of absorption, depending on site and depth of injection as well as bodily condition, as obtained in subcutaneous and intramuscular injections.

The groups were not preselected and each succeeding dog received a dosage rate in rotation after pulse rate was determined. It appeared that the clinical effect reached its maximum within 5 or 6 minutes. The pulse rate was then taken, the anaesthetic (pentobarbital sodium)** was injected intravenously, half the computed dose for a normal anaesthesia being injected rapidly and then, after 60 seconds, an additional amount, if necessary, to achieve surgical anaesthesia.

Results and Discussion

The results are presented in Figs. 1 to 3.

Dose: 0.5 mg/Kg—31 cases.
Additional anaesthesia was required during operation in 10 cases.

Dose: 0.75 mg/Kg—30 cases.
Additional anaesthesia was required during operation in 9 cases.

Dose: 1.0 mg/Kg—30 cases.
Additional anaesthesia was required during operation in 16 cases.

These operations comprised oöphorectomies, castrations and croppings, and from the induction of anaesthesia to the completion of operation usually occupied 45 minutes or less, but sometimes up to one hour.

Assuming the normal dose as 25 mg/Kg, the mean percentage of pentobarbital sodium given less than expected (i.e. "saved"), was as follows:—

(1) For 0.5 mg/Kg: 17.05%.
(2) For 0.75 mg/Kg: 10.8%.
(3) For 1.0 mg/Kg: 14.12%.

**Sagatal (Maybaker).

The pulse rates before injection of tranquillizer and after clinical effect, remained constant or increased or decreased with no constant significant change.

A few cases showed excitement after injection of chlorprothixene. No particular importance should be attached to this as it occurs in highly strung dogs during other injections and the incidence was low. No side effects were noted.

As stated before, judging the degree of tranqulization according to clinical creteria, is subject to gross misinterpretation. The dose of pentobarbital sodium was used as a measuring stick to attempt to assess the degree of tranquillization more scientifically. Surgical anaesthesia, although subject to clinical interpretation, can be judged relatively accurately.

The dose of anaesthetic tends to vary with the anaesthetist, irrespective of the anaesthetic used. Again this variation is usually minimal when the same anaesthetists administered the anaesthesia as in the series. The author has found in thousands of cases that the intravenous dose of pentobarbital sodium to achieve surgical anaesthesia is 25 mg/Kg. There is some variation according to weight as light dogs may take a somewhat higher dose and heavier dogs a little less (as mg/Kg body weight). This factor makes it essential that the various groups tested should be as similar as possible in weight distribution, but it is believed it is not important enough to lead to gross differences in the final findings, unless the groups are greatly dissimilar.

Strictly speaking, the average dose of pentobarbital sodium decided upon is unimportant statistically, as its main function is to provide a fixed standard through which the various experimental groups can be tested against each other. The reason why a "normal" dose has been selected is that the clinician gets a general indication of the degree of anaesthetic that can be "saved" which, again, may be of great use when a surgical procedure has to be carried out on a poor risk patient and a minimum of aneasthetic is indicated.

In as much as the number of cases requiring more than the "normal" dose of anaesthetic is too small to allow conclusions, the comparison of the groups is confined to determining their average respective weights which are as follows:—

Group 1. (0.5 mg/Kg): average bodyweight 14.1 Kg.
Group 2. (0.75 mg/Kg): average bodyweight 13.3 Kg.
Group 3. (1.0 mg/Kg): average bodyweight 10.7 Kg.

The groups according to their weights are, therefore, comparable.

Conclusions

Chlorprothixene is a tranquillizer of relatively short maximal duration, as indicated by the number of cases requiring additional anaesthetic during operation. This varied between 30 per cent — 50 per cent in the 3 groups. No indications of toxicity or side effects were noted. The anaesthetic potentiation was on an average of limited degree at the rates of dosage tested. When chlorprothixene is administered intravenously at

0.5, 0.75 and 1.0 mg/Kg, no significant clinical differences could be noted in its effect. It is impossible to state whether higher dosage within limits would cause a substantial alteration of the picture. The same applies to a lower dosage. The findings suggest, however, that the 3 dosages mentioned are at a therapeutic plateau. Using the criterium that the wisest therapy is that which attains the desired result at conservative dosage, 0.5 mg/Kg intravenously is suggested as the usual therapeutic dose in dogs.

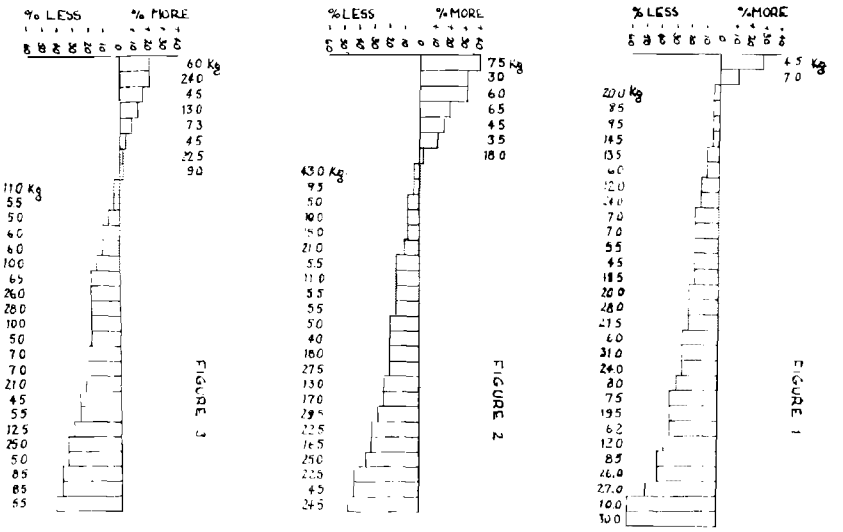

Fig. 1:

Dose of pentobarbital sodium intravenously given after chlorprothixene (0.5 mg/Kg as compared with "normal" dose of pentobarbital sodium of 25 mg/Kg.

Fig. 2:

Dose of pentobarbital sodium intravenously given after chlorprothixene (0.75 mg/Kg) as compared with "normal" dose of pentobarbital sodium of 25mg/Kg.

Fig. 3:

Dose of pentobarbital sodium intravenously given after chlorprothixene (1.0 mg/Kg) as compared wih "normal" dose of pentobarbital sodium of 25 mg/Kg.

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RABIES IN SLAUGHTER CATTLE AT THE JOHANNESBURG MUNICIPAL ABATTOIR

M. M. GREATHEAD, W. J. EHRET.
Municipal Abattoir
Johannesburg.

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SUMMARY

The following aspects are discussed:—

The rabies incidence in South Africa.

The areas from which slaughter cattle are derived.

The importance of veterinary ante-mortem inspection of slaughterstock.

Rabies symptomatology in cattle and the differential diagnosis of the disease.

The description of four suspected rabies cases, two of which were confirmed by biological tests.

Precautions in handling animals, protection of personnel, control of contacts, disposal of carcases and disinfection of premises.

The importance and control of rabies outbreaks in a large abattoir.

INTRODUCTION

In the last decade the incidence of rabies in the Republic of South Africa has increased greatly, and there have been two epizootics in areas previously thought to be free from the disease — namely Northern Transvaal and Natal. Between 1953 and 1961, 299 cases of rabies in cattle have been recorded[1]. The possibility of infected slaughterstock arriving at abattoirs has therefore increased alarmingly, and abattoir veterinary staff are constantly on the alert.

AREAS FROM WHICH SLAUGHTER CATTLE ARE DERIVED:

Cattle are sent to Johannesburg from all parts of the Transvaal, Orange Free State, and areas of the Northern Cape Province, Natal and Swaziland. Rabies has been reported from all provinces of the Republic. During six months of the year large weekly consignments of cattle arrive from South-West Africa, where an extensive outbreak of rabies was reported in 1950.[2]

Regulations require that, where reasonably practicable, a meat inspector should examine all animals before slaughter.[3]

Ante-mortem inspection of slaughterstock is carried out by veterinarians to assess the suitability for slaughter of animals, particularly diseased or casualty cases. Individuals of all species of slaughterstock regularly arrive at the abattoir suffering from injuries, prostrate in trucks or showing abnormal symptoms. Slaughtermen and livestock agents are instructed not to slaughter any animal behaving abnormally or suffering from a disease condition or injury without the authority of a veterinarian.

Ante-mortem inspection is especially important in the identification of diseases such as rabies, which may show significant symptoms, but few characteristic post-mortem changes.

RABIES SYMPTOMATOLOGY

Classical symptoms of rabies are divided into three stages:—

(1) Prodromal Stage.
(2) Excitable Stage.
(3) Paralytic Stage.

In addition, atypical cases may be encountered.

In South-West Africa the following symptoms were recorded in cattle.[2]

> "The mad form is most frequently seen. A paralytic form also occurs as one sometimes sees cases which are comatose with no previous history of excitement or of bellowing.
>
> In the mad form the prodromal stage is marked by restlessness, but the rapid emaciation is a striking feature. The rumen appears to be empty and the animal may stand near the water, but does not often attempt to drink. The symptoms of hydrophobia, which are so well marked in man do not appear in cattle.
>
> Uneasiness increases and salivation becomes more marked as the animal passes into the second stage, in which bellowing is the chief symptom. Where a number of cattle are affected at the same time the bellowing is so disturbing that the owners cannot stand it for longer than a few hours, and the animals are usually destroyed in this stage.
>
> In one outbreak, 14 cattle in various stages of the disease were seen in one kraal, and there continuous straining was the main symptom. While straining, the head and neck was stretched forward and the animal bellowed. There was no diarrhoea or constipation, but a lot of gas was passed. Together with the salivation, the symptoms in these cases were very suggestive of some form of irritant poisoning.
>
> Affected animals may attempt to butt one another, but apparently with no intention of doing any serious harm. Cows with small calves may attack human beings.

After 24 hours, a swaying gait develops. The paralysis starts in the hindquarters and becomes worse until the animals can no longer get up.

In the last stage, the disease resembles lamsiekte very closely. There is paralysis, salivation and later coma, and the bellowing becomes so weak that an occasional groan is heard. Death soon follows.

From Natal the following symptoms were recorded in a cow[4]:—

"The animal was on heat, bellowed continuously, lost condition rapidly, developed an unsteady gait and wolked in circles. This was followed by inability to swallow and profuse salivation and she was destroyed."

Differential Diagnosis

As a rule no history can be given by livestock agents in respect of suspect animals and it must be assumde that they were despatched to the abattoir in a healthy state.

Conditions to be considered are:—

(1) *Ketosis*—(Railroad Disease, Transport Tetany). This is a sequel to transportation stresses such as fear, overcrowding, withholding of feed and water, overheating. Cases showing various symptoms are regularly encountered. Animals arrive in a prostrate conditions or collapse later in the abattoir lairage. Marked nervous symptoms such as inco-ordination, ataxia, hypersensitivity, muscular spasms and coma are seen. Numerous cases occur in cattle, but sheep are most frequently affected.

(2) *Animals in a moribund or semi-moribund state* caused by overcrowding, extensive bruising or heat stroke.

(3) *Concussion*—Animals receive injuries to the head and brain in transit.

(4) *Aggressiveness*—Excitable animals may be aggressive when offloaded — particularly certain breeds, e.g. Africander.

(5) *Heartwater.*

(6) *Botulism.*

(7) *Lead poisoning.*

(8) *Affections of the spinal cord and vertebral column*; Injuries, inflammation, fractures, abscesses, etc.

(9) *Cerebral Redwater.*

Case Reports

Since October 1962, four cases of suspected rabies have been encountered among cattle railed from South-West Africa. These animals cannot be isolated for prolonged observation because foot and mouth disease quarantine arrangements require slaughter within two days of arrival, so that suspects which did not die within the period had to be destroyed. Brain material was submitted to Onderstepoort in every case, and a negative histological result was obtained each time. Two cases, however, were biologically positive.

Case No. 1.—This cow came from Okahandja in a consignment of 100 cattle.

Difficulty was experienced in off-loading. She walked unsteadily with swaying of the hindquarters and collapsed in the mouthing crush. After being removed from the crush she regained her feet, and staggered about, periodically falling and rising again. The most marked symptoms were a combination of severe abdominal straining, coughing, bellowing and salivation. Saliva was discharged wherever the animal moved. The eyes had a fixed stare, though the animal's attitude was one of inquisitiveness.

The cow was isolated and later destroyed by cutting the throat. In the lairage pen the head was severed from the body, the cranium opened and the brain removed for laboratory examination. This was histologically negative, but biologically positive for rabies after 14 days.

Case No. 2.—This cow arrived in a consignment of 268 cattle from the Otjiwarongo district.

The animal collapsed in the killing box race, whence it was manually removed. It lay on its side, with extended legs, tensed throat and neck muscles, showing marked abdominal straining and profuse salivation. Death occurred in twenty minutes. The head was severed and removed intact to Onderstepoort Laboratory. Histological and biological examinations were negative for rabies.

Case No. 3.—An ox derived from a consignment of 104 cattle from Okahandja was apparently normal when off-loaded, but after mouting, began kicking violently and later showed weakness of the hindquarters. When penned the animal lay down and did not rise again, although it managed to pull itself about on the floor. The predominant symptoms were intermittent groaning and bellowing, abdominal straining, salivation and involuntary kicking toward the abdomen. The temperature was 105°F. The head was removed intact to Onderstepoort Laboratory after the animal had died twelve hours later. Histological examination was negative, but rabies virus was demonstrated by the biological test after 21 days.

Case No. 4.—This cow also came from Okahandja in a consignment of 48 cattle.

She had difficulty in getting out of the truck and fell in the mouthing crush. When released she managed to walk to a pen where she lay down and was unable to rise. The cow was very aggressive attempting to rise and charge any one who approached. She remained alert and consumed a little teff hay during the night. The following day her condition was unchanged, necessitating destruction, which was by means of intrathoracic and intravenous injection of thipentone sodium. Again the intact head was taken to Onderstepoort. Thie histological and biological examinations were negative for rabies.

In both positive cases the striking symptoms were abdominal straining, inco-ordination of the limbs, bellowing and salivation; similar to those described in South-West Africa.

Precautions

The following are instructions published for the guidance of Magistrates, District Surgeons and Veterinarians[5]:—

"(*d*) *Precautions to be taken.* The need for effective precautions in handling suspected animals or material in all possible stages should require no emphasis. It is the duty of the person handling infected material adequately to protect himself, his assistants and other persons who may be called upon to handle material in transit or at the destination, especially as the latter usually are ignorant of the danger they are exposed to and of means of guarding themselves against infection. It is highly desirable that rubber gloves should be worn when a post-mortem examination is made. The operator can further protect himself by holding a pane of glass between his face and the part to be dissected, in order to avoid infected material and splints from reaching his face or eyes. All instruments should be sterilized after use by boiling, or disinfected in a solution of formalin, lysol or other carbolic preparations."

"(*e*) *Disposal of Carcases*—All the remains of suspected animals should be suitably destroyed by burning or deep burial, and the locality and objects which have come in contact therewith adequately disinfected."

Protection of personnel

Workers whose hands were free from cuts and scratches were employed to dispose of the carcases. Each was issued with protective clothing comprising gumboots, overalls, rubber gloves and perspex face masks. Bantu employees were resident in a Municipal Compound.

Control of affected animals and contatcts

Affected animals were isolated in locked pens until destruction or death. Human traffic near the pens was limited to a minimum.

In cases 1 and 3 all contact animals were examined carefully. In the former these were hosed before slaughter to remove possible salivary contamination from the hides of the truck mates of the diseased animal. In cases 2 and 4 the majority of contacts had already been slaughtered when rabies was provisionally diagnosed. The remaining animals were carefully examined.

Disposal of the Carcases

A team of three or four Bantu labourers under the supervision of a veterinarian was employed to transport each dead animal (in a large, all metal, solid-sided offal trolley) from the pen in which it had died or had been destroyed to the by-product plant.

Except in case No. 1, the carcases were removed intact without severing the head or opening the cranium. Each carcase was handled as little as possible. In addition a jute bag filled with cotton waste was tied over the animal's head to prevent uncontrolled escape of saliva or ruminal fluid during the removal process. Carcase removal was performed speedily with minimum disruption of normal abattoir operation.

In the by-product plant the carcase was hoisted out of the trolley by block and tackle, and placed in a large vertical, wide-mouthed digester, specially installed for handling intact bovine and equine cadavers. When the body had been lowered into the machine, the head was severed from the body in such a manner that escaping blood and ruminal ingesta, fell into the digester. The gambrel by which the carcase was hoisted was disengaged from the hoisting tackle in the digester and sterilized with the carcase.

This was accomplished by processing at a steam pressure of 40 lbs./sq. in. for 6 hours, repeated in a dry rendering digester at a similar pressure for a further 6 hours.

The severed head was placed in a suitable drum for wrapping in thick brown waterproof paper and immediate transport to Onderstepoort Laboratoires where the brain was removed for diagnostic testing.

Disinfection

Personnel. After loading the carcase, workers washed their gloves and gumboots in 'Jeyes Fluid' disinfecting solution while still wearing them. These and the face masks were then removed and the workers scrubbed their hands before resuming their normal duties.

Digester and Equipment. The trolley, hoisting tackle, digester mouth, drum, and instruments (knife and saw) were well flamed with a flame thrower and hosed down with water. Gloves and face masks were washed in the disinfecting solution.

Lairage. In the first instance sawdust was used to absorb the blood and ruminal fluid which escaped when the animal's throat was cut. This was burnt after sprinkling with diesoline and igniting by flame thrower. Disinfecting solution was later poured over the area which was then hosed down with water.

In subsequent cases a little hay present was burnt and the whole area of the pen flamed with a flame thrower. This was easier to control and created less smoke than the diesoline method. After the flaming, disinfectant was again spread over the area which was finally hosed down before fresh stock was introduced.

Discussion

1. Rabies is a disease of great public health importance and management in an abattoir presents the staff with numerous problems.

It is essential to detect infected animals prior to slaughter, but with such variable symptomatology clinical diagnosis is difficult. Casualty

animals, without suspicious symptoms, considered suitable for emergency slaughter, may be in a stage of the disease. Virus may also be excreted in the saliva seven days before symptoms become evident.[5] As stated the four cases described came from South-West Africa and could not be isolated for prolonged observation, which could have assisted diagnosis.

On occasion, however, South African cattle from unrestricted areas exhibiting suspicious symptoms, have been detained under observation for ten days, in which period death did not supervene.

2. Of the 58 reported cases of human rabies in South Africa from 1916 to 1947,[5] only one was caused by a bovine animal. In the same period 117 cases were recorded in cattle. Between 1953 and 1961, 19 human cases were reported[6], but no bovines were implicated. One may therefore assume that normally the risk of humans contracting rabies from cattle is small.

Nevertheless, every precaution must be taken to safeguard abattoir workers, and to limit the number of contacts in suspicious cases. In this establishment a labour force of about 1,000 persons is employed in all phases of abattoir operation. By no means all these people would be exposed to possible infection, but most are completely ignorant of the hazards of handling a rabid animal. Workers most at risk are veterinarians, slaughtermen, offal handlers and by-product plant workers. These men, intimately concerned in handling live animals, carcases or viscera, are prone to hand injuries and cuts which could be an entry portal for rabies virus.

The Medical Officer of Health is at present administering a course of duck embryo rabies vaccine to a selected group of these workers.

3. As described, steps are taken to prevent contamination of the lairages and by-product plant. In case 1 it was felt that unnecessary contamination of the lairage had taken place, to the system of carcase disposal was modified for subsequent cases, the intact head being despatched for diagnostic testing.

4. A method of destruction, avoiding bloodshed and damage to the brain is desirable and to effect this an overdose of thiopentone sodium anaesthetic was used. Intrathoracic injection was not lethal in itself, but by subduing an aggressive animal, easy and effective intravenous injection was subsequently enabled. Further investigation of this method possibly combined with other lethal drugs, is necessary.

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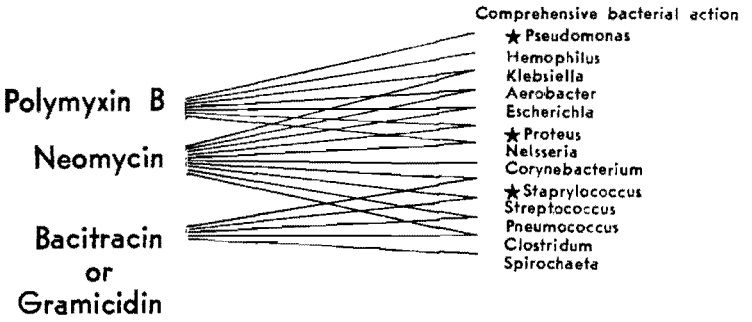

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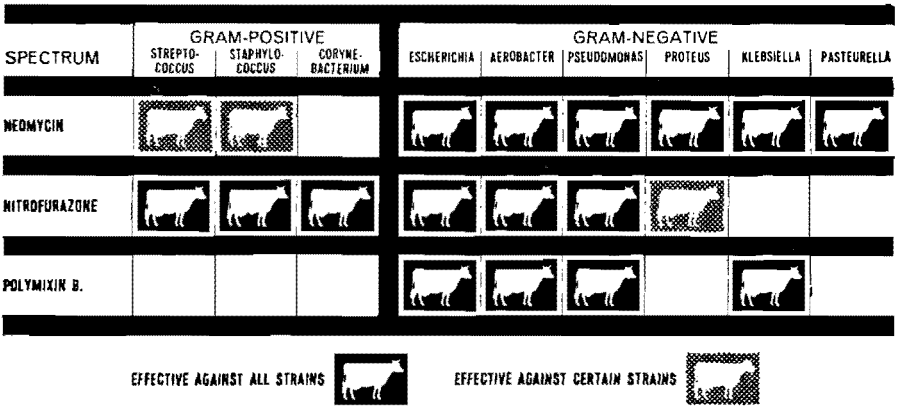

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AN OUTBREAK OF INTUSSUSCEPTION IN A HERD OF CHINCHILLAS

C. H. B. MARLOW—Private Practitioner, 21 Cypress Street, Cradock Cape.

Received for publication August, 1963.

SUMMARY

The history symptomatology, treatment and possible aetiology of an outbreak of intussusception in a herd of chinchillas is described. Possible preventive measures are referred to.

HISTORY

A herd of approximately 180 chinchillas housed in a large airy building in the Pearston district, C.P., experienced incidence of "prolapse of the rectum" coinciding with cold wet weather in March 1963. The herd was moved to new accommodation in April 1963 as follows:—

Section A were moved to temporary housing in Somerset East.

Section B were moved to the Bedford district.

Both sections were now on wire mesh flooring as opposed to 40° angle slope cement slab previously.

Section A (at Somerset East) were housed in well-built ceilinged rooms with malthoid-covered concrete floors. Ventilation was inadequate and a high level of humidity resulted, evidenced by non-evaporation of urine from the floors. In addition overcrowding was present and cold wet weather was experienced. On arrival at Somerset East a newly weaned animal was found dead with "prolapsed rectum". Further unexplained deaths occurred in newly weaned and unweaned young, one of which showed "prolapsed rectum".

Section B (in Bedford District) were housed in an old well-insulated, warm, wooden-floored dwelling with satisfactory ventilation. No deaths occurred in this section after removal from Pearston.

Section A were then moved from Somerset East to the Bedford district and housed in the same building as *section B*. Another five deaths attributed to "prolapsed rectum" occurred in *Section A*, one in an adult female, the rest being in young chinchillas.

On 27th June an unweaned female between 2 and 3 months of age in *Section B*, housed in an adjacent room to *Section* A was seen to be ill. On examination the owner noticed "a prolapsed rectum". This was the first and only occurrence in this section. Professional advice was then sought; the animal (No. 1) being presented for examination an hour later.

A total of approximately 25 chinchillas had died since March 1963, the majority suffering from "prolapsed rectum".

The normal half-erect squatting posture was changed to one approximately horizontal to the ground. Stretching with tendency to maintain this position for several seconds was seen. On examination evidence of diarrhoea was present (soiled hindquarters) and reddish watery anal discharge. "Prolapse of the rectum" was frequently noticed within half an hour of commencement of stretching. The "prolapse" was initially reddish-purple in colour, corkscrew-like and rapidly increased to approximately 7 cm. in length. Cyanosis and congestion rapidly became more pronounced and within a few hours a fibrinous exudate covered the mucous membrane. Self-mutilation of the "prolapse" occurred, which could be prevented by placing the chinchilla in a small linen bag with a purse-string knot tied around the neck.

The following chinchillas were presented for treatment.

No. 1.—29th June from *Section B*, unweaned female between 2 and 3 months old. Diagnosed as "prolapsed rectum". Prolapse 5 c.m. in length, twisted in a corkscrew-like fashion, reddish-purple in colour.

On 2nd July four were presented.

No. 2.—2nd July from *Section* A, unweaned male between 3 and 4 months old. "Prolapse" of a few hours duration. 7 c.m. in length; very cyanotic and congested.

No. 3.—2nd July from *Section A*, weaned male between 3 and 4 months old. "Prolapse" of longer duration. 7 c.m. in length, covered with fibrinous exudate and matted fur.

No. 4.—2nd July from *Section A*, unweaned female between 2 and 3 months of age. "Prolapse" 1.5 c.m. in length, reddish-purple in colour.

No. 5.—2nd July from *Section A*, weaned female between 4 and 5 months of age — similar to No. 4. Both no's. 4 and 5 were noticed to be ill before "prolapse" had occurred. Abnormal posture and evidence of diarrhoea were present. When presented an hour later "prolapse" had occurred.

No. 6.—10th July from *Section A*, unweaned male between 2 and 3 months of age. Noticed by owner to have abnormal posture and evidence of diarrhoea. When presented, reddish-watery discharge was examined microscopically. Numerous erythrocytes were present. Careful palpation of abdomen revealed a turgid cylindrical mass which was thought to be a distended urinary bladder. This animal was a twin to an earlier case which had been destroyed.

No. 7.—26th July from *Section A*, unweaned male 2 months of age. Reddish watery discharge was present from the anus. Palpation revealed cylindrical mass in the mid-right portion of the abdominal cavity. No stretching or abnormality in posture was noticed.

On 6th July a male twin of *No.* 2 was seen with a severe cyanotic lacerated "prolapse." This animal was destroyed by the owner.

No post-mortem examinations had been conducted on any of the chinchillas which had died since March.

Treatment

Surgical intervention was deemed necessarv to reduce "prolapsed rectum". Three Assistants were necessary.

Inhalation anaesthesia was induced as follows: A home-made mask was made by punching numerous holes through the base of a small tin 3 c.m. in diameter and 8 c.m. long. A small wad of cotton wool was placed in the tin and approximately 10 drops of anaesthetic ether added. The mask was placed over the face. Induction was difficult due to struggling. The mask was held in position until suitable surgical anaesthesia was obtained. The animal was then placed in dorsal position. The mask was removed by the first assistant, cardiac impulse palpated and forelegs retrained with the fingers of the free hand. A second assistant restrained the hindlegs. Complete recovery from anaesthesia was very rapid, occurring without any prior warning apart from a slight twitching of the whiskers. For this reason effective restraint of the legs was necessary. Difficulty in maintaining anaesthesia was due to the very small respiratory tidal volume. When imminent recovery was noticed the anaesthetist placed the mask over the face, blew lightly through the holes in the base of the mask and at the same time increased lung ventilation by gentle intermittent digital pressure on the thorax until suitable anaesthetic plane was regained. During the course of the operation it was found necessary to replenish the ether on three or four occasions. (10 drops were used at a time).

Pre-operative Procedure

The "prolapse" was first cleansed with cotton wool soaked in Centrimide solution (Cetavlon I.C.I.) and then covered with sterile gauze to prevent contamination with fur.

The site was suitably prepared for operation by clipping the fur over the mid-ventral abdominal area extending from the pubis to xiphi-sternum, and the use of Centrimide solution. The fur covering the rest of the abdomen and thorax was moistened and stroked flat with wads of cotton wool soaked in centrimide solution.

Due to small size and rapid recovery from anaesthetic use of suitable drape was not practicable. A sterile drape was however placed under the chinchilla. In adult chinchillas a sterile drape is however used.

Operative Procedure

A midline incision approximately 5 c.m. in length extending anteriorly from the pubis was made through the skin. The abdominal musculature and peritoneum (which in two instances were so thin that the viscera could be seen) were carefully incised, tissue forceps attached and the viscera exposed. The tissue forceps were held by the third assistant. The incision was sufficiently increased using a pair of scissors. Care was taken not to incise the caecum when entering the abdominal cavity.

In every instance a distended urinary bladder was immediately seen, being approximately 1.5 c.m. in diameter.

No. 1.—Caecum and colon were distended with gas. Descending colon was identified and using two fingers was easily lifted to incision. Gentle traction was applied and "prolapse" was gradually reduced. However, rupture of the mesentery occurred. Chloramphenol 5 per cent dusting powder (Alficetin — Glaxo-Allenbury's) was liberally distributed in the abdominal cavity. The abdominal musculature and peritoneum were closed with a continuous suture using 000 catgut on an atraumatic needle. The skin was closed with three mattress sutures using 000 dermalon.

No. 2 *and* 3—similar to *No.* 1.

No. 4.—On lifting the descending colon to the incision it was noticed that the so-called "prolapse" was in fact an intussusception of the descending colon with a prolapse of the intussesceptum from the rectum. It was immediately evident that the previous three cases had also been intussusception which were not recognised due to severe cyanosis, congestion and extreme thinness of the intestinal wall. Reduction of the intussusception was accomplished by gentle digital pressure through the rectal and colonic walls at the posterior end of the intussusceptum. This was accomplished relatively easily. It is stressed that traction of the anterior intussuscepting colon must be avoided; rupture of the mesentery would result — as in *No's* 1, 2 *and* 3.

No. 5.—Similar to No. 4.

No. 6.—On incision intussusception of the descending colon was immediately evident (no prolapse had occurred), being very much more severe than those encountered previously. The colon was intussuscepted for approximately 10 c.m. of its length and was markedly congested and cyanotic. This proved to be the cylindrical mass palpated when the animal was examined. Reduction was accomplished with difficulty in the same way as *No's* 4 *and* 5. When reduced the intussusceptum and intussuscepiens measured approximately 25 c.m.

No. 7.—Surgery confirmed the suspicion of intussusception of the anterior portion of the colon. Length was approximately 5 c.m. and was situated between the duodenal attachment and pelvic flexure of the colon. Reduction was similarly accomplished but difficulty was experienced due to the short mesentery in this area.

In all cases the mesentery involving the major portion of the colon was noticed to be extraordinarily long (up to 10 c.m.).

No's. 1, 2 *and* 3 died within 48 hours of surgery.

No's. 4, 5, 6 *and* 7 made uneventful recoveries.

In instances where the intussusception has prolapsed to a severe degree it is suggested that reduction of the prolapse be attempted under anaesthesia before surgery is performed.

Possible Aetiology

It is suspected that enteritis due to bacterial, protozoal and/or fungal origin is a direct cause of this condition. Predisposing causes probably include unbalanced diet, excessive water intake, contamination of water bottles and tubes with fungi, unsatisfactory environment (e.g. overcrowding, draughts, insufficient ventilation and dampness) and the fact that chinchillas are coprophagus. The very long mesentery undoubtedly facilitates intussusception.

Possible Prevention

Prevention should include attention to diet and general management, frequent sterilization of water bottles and tubes should be carried out.

The question as to whether chinchillas should be provided with water arises. Post-mortem examinations on chinchillas which have died from injuries while fighting, have revealed that the colon is longer than the small intestine (approximately 6 foot long as opposed to approximately 5 foot in length). Their very dense fur, and reports that their natural habitat was of semidesert nature leads one to believe that under natural conditions water intake was minimal. An interesting experiment is taking place on a farm in the Pearston district. A number of chinchillas have had no water supplied in bottles for the past 6 months. Their diet consists solely of green food daily, concentrates in pellet form and a few peanuts. According to the owner they are in excellent health and have a very dense fur. Their droppings are exceptionally dry.

The owner was advised to add 5 per cent Nitro-furazone soluble powder ("Nefco" S.K.F. Laboratories) to the drinking water on 2nd July at a concentration of 0.5 oz per 3 gallons of water for one week. The medicated water was replenished daily. Young animals up to 6 months of age (and their parents if the young were not weaned) were maintained on the above-mentioned concentration until 2nd August. The adults' drinking water was medicated at a concentration of 0.5 oz per 6 gallons of water from 10th July until 2nd August when the medication was discontinued. No further occurrence of intussusception has been encountered to date. (21st August).

Conclusion

Readily available literature on diseases of Chinchillas is very scanty. Their number in the Republic already exceeds 10,000 and information regarding their general management and diseases will be very necessary within the near future.

ACKNOWLEDGEMENTS

Mr. C. P. Harte, final year student, and Dr. J. A. Louw M.B.Ch.B. are thanked for efficient anaesthesia.

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A PRELIMINARY NOTE ON THE TOXICITY OF *ASPERGILLUS FLAVUS* LINK AS GROWN IN PURE CULTURE

M. TERBLANCHE,
J. VAN RENSBURG*,
T. F. ADELAAR,
T. W. NAUDÉ,
J. D. SMIT.

Veterinary Research Institute, Onderstepoort.

SUMMARY

Although no cases of *Aspergillus flavus* poisoning have been diagnosed in South Africa to date, two "strains" of the fungus have been isolated. One from goundnut meal and the other from ensilage. These "strains" proved toxic when cultured but the symptoms produced by each, differed.

INTRODUCTION

Toxicity among ruminants in South Africa is frequently ascribed to mycotoxicosis. This is usually associated with silage which has been exposed to air or hay which has become damp. Such diagnoses can seldom be confirmed as no analytical methods are available. Where possible, toxicity trials on the suspected feed are carried out and attempts are made to identify the fungus present. These methods have given very inconclusive results.

Isolation and artificial culture of fungi from suspected and non suspected feedstuffs and toxicity testing of such cultures have now been resorted to. Some results obtained to date are reported in this paper.

1. *Aspergillus flavus*. Link.

Levenshtein[1] reported that this fungus caused death in rabbits some 30 to 40 days after administration. Sippel[2] found it hepatotoxic to pigs and cattle. In 1960, Stevens[3] reported 45 outbreaks of poisoning among turkeys, the main lesions being haemorrhage and necrosis of the liver and congestion of the kidneys. Blount[4] encountered the condition in association with the feeding of Brazilian groundnut meal (*Arachis hypogea*). Sargeant[5] proved that *A. flavus* grown on Czapek's medium caused symptoms identical to those found in natural cases. The toxin was found to be carcinogenic to rats by Lancaster[6]. Loosmore[7] found infected meal toxic to calves. Asplin[8] investigated large scale mortality among ducklings due to the toxin and suggested their use in screening tests owing to their susceptibility. The main lesions were extensive liver damage and degeneration of the kidneys and pancreas.

*J. van Rensburg was attached to the Plant Protection Research Institute at this time.

In the present work *A. flavus* was isolated from silage from a farm in the Pretoria area where there was no suspicion that poisoning had occurred. The description of this fungus is as follows:—

The colonies spread rapidly on Czapek-agar medium. Sterile hyphae and a mat-like growth are limited to the older and drier parts of the culture between the dense conidiophores. Conidial areas vary in colour from citran green, lime green to krongberg's green (Ridgeway[9], Plate XXXI column 25.) The depth of the medium is initially yellow but various shades of brown develop as the culture ages. The conidiophores vary in size, some bearing only occasional chains of conidia while others produce large numbers. The conidiophores usually develop from hyphae in the substrate and are 400–500 μ in length and 5–15 μ in diameter. The walls of the conidiophores are spinous and taper to a vesicle on which the conidia are borne. The conidiophore vescicles measure from 10 to 30 or 40 μ in diameter. Single sterigmata are usually borne on the smaller conidiophore vescicles which measure from 10 to 15 μ by 3 to 5 μ. Primary sterigmata on the larger vescicles measure from 7 to 10 μ by 3 to 4 μ and secondary sterigmata 7 to 10 μ by 2.5 to 3 μ. The conidia vary from pyriform to round in shape and their size from 3x4 μ to 4 x 5 μ. They are almost colourless to yellowish green. The sclerotia are initially white but later become brown, hard and parenchymatous and perithecia are absent.

The fungus was cultured on a maize medium prepared as follows. Yellow maize was ground and sieved and 125 g. of the coarse material placed in a 2 lb. fruit jar containing 250 c.c. distilled water. This was then sterilized. After inoculation, the cultures were kept for 30 days at 25°C., dried and ground. Three rabbits weighing from 3.9 Kg. to 4.5 Kg. were each dosed 15 g. dried culture per animal per day. One rabbit developed icterus on the 12th day and died on the 16th, showing focal lymphatic infiltration in the kidneys, perivascular lymphatic infiltration in the brain and mild miliary cirrhosis of the liver. The other two rabbits showed no symptoms and were killed on the 15th day. The autopsies were negative.

A six toothed merino wether weighing 44 Kg. was dosed at the rate of 11 g. per Kg. on two successive days. The day after the second dose it showed inco-ordination of movement and marked congestion of the visible mucous membranes. Progressive paralysis followed and the animal died on the eighth day. On the day symptoms appeared, blood samples were submitted for examination. The haemoglobin concentration, haematocrit and red cell sedimentation rates were normal as were the bromsulphthalein retention test, serum glutaric oxaloacetic transaminase and zinc sulphate turbidity tests. The blood urea nitrogen and creatinine were elevated (49.7 and 3 mg. per cent respectively). The post mortem examination showed general cyanosis and venous congestion, hyperaemia of the meninges, slight tumour splenis and ulceration of the lips, pharynx and larynx.

A second sheep, a two-toothed merino ewe weighing 27 Kg. was given a single dose of 300 g. of the dried culture. On the following day it showed symptoms similar to those described above but recovered gradually to become normal on the eighth day. Blood analyses as described gave no abnormal results. The sheep was slaughtered on the 18th day and

showed only slight congestion of the brain and slight congestion and leucocyte infiltration into Glisson's capsule on histological examination.

A. flavus was also isolated from a commercial groundnut meal which had not given rise to any suspicion of toxicity. This strain was similar to that described above except that more sclerotia developed.

Dried culture of this fungus was dosed to three rabbits at a rate of 3.0 g. per Kg. body weight daily for 10 days. All three showed loss of appetite from the second to the fourth days onwards. The more detailed findings were as follows:—

Rabbit 1.

Ascites, hydrothorax and icterus. Died on 11th day. *Liver* — yellow in colour, slight peripheral cirrhosis, stasis of blood vessels. *Kidneys* — congestion. *Spleen* — marked congestion and eosinophilic infiltration, *Adrenals* — focal necrosis with polymorphal cell reaction.

Rabbit 2.

Showed icterus. Died on 11th day. *Liver* — yellow and friable. Thrombosis of veins, marked eosinophilic reaction. *Brain* — focal areas of round cell infiltration around capillaries.

Rabbit 3.

Showed ascites, hydrothorax and slight icterus. Killed on 10th day. *Liver* — miliary cirrhosis, focal necrosis and congestion. *Spleen* — slight eosinophilic infiltration.

A merino wether weighing 36 Kg. was also dosed with 400 g. of the dried culture on four consecutive days. It showed no symptoms but died suddenly on the fifth day. Unfortunately this animal showed a purulent (Preisz-Nocard) nephritis on post mortem examination but fatty degeneration of the liver was found.

Discussion

It is of interest that two "strains" of *Aspergillus flavus* which proved toxic when grown in artificial media were isolated from ensilage and groundnut meal respectively, neither of which feedstuffs had given rise to poisoning. This again confirmed that their toxicity depends on conditions of growth. Furthermore, although almost identical morphologically and cultured under the same conditions, one of these "strains" produced nervous symptoms in sheep while the other caused icterus, hydrothorax and ascites in rabbits and no nervous symptoms in a sheep.

ACKNOWLEDGEMENTS

The Chiefs of the Veterinary Research Institute and the Plant Protection Research Institute are thanked for permission to publish this article.

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DIE AGSTE INTERNASIONALE DIERE-BLOEDGROEP-KONFERENSIE IN LJUBLJANA JOEGOSLAWIË

21.8 — 24.8.62

D. R. OSTERHOFF. Fakulteit van Veeartsenykunde, Onderstepoort.

Bloedgroepkonferensies vind met tussenposes van twee jaar plaas, en die laaste het onder leiding van Professor Dr. M. Pavsic van die Veeartsenyinstituut van Slowenië, Ljubljana gestaan.

Omtrent 120 veeartse, genetici, veetelers en medici uit alle Europese lande, die V.S.A., Japan, het aan hierdie konferensie deelgenee. (Van Suid-Afrika was die skrywer die enigste verteenwoordiger). In die verloop van drie dae is in 'n vol program 'n goeie oorsig gegee oor die teenwoordige kennis ten opsigte van die oorerwing van bloedeienskappe. Die veld wat aandag geniet onder die wetenskaplikes, is intussentyd verder uitgebrei en behandel, nie alleen die bloed nie, maar ook die oorerwing van eienskappe wat verbonde is aan ander dierlike weefsels.

Die noodsaaklikheid van internasionale samewerking hoofsaaklik ook in verband met die vergelyking en standardisasie van toetssera, wat in verskillende lande geproduseer word, het daartoe gelei dat 'n Europese Vereniging van Bloedgroep-navorsing by Diere gestig is. Dr. M. Braend van Noorweë is as eerste president van die nuwe vereniging gekies.

As een van die mees verblydende resultate van die samewerking moet genoem word, dat die toetssera wat in die verskillende laboratoriums gebruik word, baie goed ooreenstem en resultate vol reproduseerbaar is. Op die manier het die afstammingsbewys, wat op die bloedgroepbepalings gebaseer is, 'n baie hoë graad van objektiwiteit bereik.

Die verskillende lesings wat gelewer is, het die geweldige vorderings wat op hierdie gebied gedurende die laaste vyf jare gemaak is, weerspieël. Net die belangrikste aspekte kan hier aangehaal word, om die huidige posisie aan te dui.

In 'n referaat van Alexander S. Wiener, New York is 'n uitstekende oorsig oor die huidige posisie van die bloedgroepnavorsing by die mens gegee. Die prinsipe wat by mense bloedgroepe uitgewerk is, is van fundamentele betekenis vir die genetiese teorieë van die bloedgroepe by die dier. Hiervolgens is bloedfaktore eienskappe op die oppervlakte van die rooibloedselle, wat ook as agglutinogene of fenogroepe beteken word, omrede hulle net in serologiese toetse deur agglutinasie, hemoliese ens. bepaal kan word. Maar, dikwels word die eienskappe, wat deur die antisera bepaal kan word, in verskillende lae op mekaar aangetref. Die resultaat daarvan is, dat elke agglutinogeen nie deur een enkele bloedfaktor, maar wel deur 'n hele reeks van sulke faktore gekenmerk word. Op dieselfde manier kan teenliggaampies, wat gewoonlik baie spesifiek reageer, kruisreaksies toon met antigene wat gelyksoortige strukture het. Dus is die aantal bloedfaktore, wat ooreenkomstig is met een antigeen, teoreties onbeperk. Dieselfde is geldig vir die teenliggaampies wat kan reageer met 'n hele reeks van substansies wat meer of minder dieselfde

chemiese samestelling het. 'n Bekende voorbeeld van sulke kruisreaksies is die van antisera wat geproduseer is deur inspuitings van mensebloed in konyne en wat ook met die bloed van ape reageer. Navorsing op hierdie kruisreaksies het die basis gevorm vir die vrugbare gebruikmaking van bloedgroep-navorsing by evolusiestudies. Die verhouding tussen die bloedgroepsisteme by die mens en by die primate is baie deeglik bestudeer.

Die teorie wat van Wiener gesteun word ten opsigte van die verhouding tussen geen, agglutinogeen en bloedfaktor waarby die groot getal van bekende fenogroepe gebaseer is op 'n ry van multiple gene op die kromosoom, gee ook die verklaring vir soortgelyke toestande soos dit aangetref word by die bloedgroepe van diere. Hierdie teorie gee ook 'n verklaring vir die geweldige uitbreiding, met wie die kennis oor die dierlike bloedgroep-sisteme toeneem. Met hierdie kennis neem ook die aantal van bekende toetssera toe; by die bees word amper 100 toetssera gebruik, waarvan natuurlik nie almal in elke laboratorium gebruik word.

C. Stormont, Davis, Kalifornië het sy eie definisies weereens verduidelik: 'n bloedgroepsisteem by die dier is die eenheid, wat die bloedgroepfaktore saamvat, wat deur die allele van 'n enkele geen gekontroleer word. Die fenotipiese wyse van uiting van hierdie allele word fenogroep genoem. Die aantal van bekende fenogroepe in 'n sisteem gee die kleinste getal van allele wat hierdie sisteem kontroleer. In sy lesing het Stormont die 11 bekende bloedgroep-sisteme by die bees verduidelik. Hierdie sisteme bevat verskillende aantal bloedfaktore, van een tot 50. Die getal fenogroepe varieër van 2 tot omtrent 300. Die mees ingewikkelde bloedgroep-sisteem is die B-sisteem met oor 300 verskillende fenogroepe en omtrent 15,000 verskillende fenotipes. As 'n mens al die bekende 11 in aanmerking neem styg die getal moontlike fenotipiese bloedgroepkombinasies op oor 2 triljoene, dus baie meer as daar beeste op hierdie aarde is. In verskillende bovidae- en cervidae-families word bloedgroepsisteme gevind wat ooreenstem met die by die bees. Byvoorbeeld kan teenliggaampies wat met die faktor A van die bees regaeer, ook geproduseer word deur inspuitings van antilope-, bok-, skaap-, bison- en mufflonbloed in konyne geproduseer word. Hierdie studies is van groot betekenis vir taksonomiese studies.

Miller, Davis, Kalifornië, wat op bloed van verskillende duiwespecies gewerk het, was in staat om te toon dat die normaal voorkomende teenliggaampies in die serum belangrike aanduidings kan gee oor die verwantskappe tussen species.

Verder neem bevolkingsgenetiese ondersoeke 'n belangrike plek in bloedgroepstudies. Eerstens word die frekwensie van verskillende bloedgroep-gene in verskillende rasse bepaal, daarna word gesoek na moontlike korrelasies tussen bloedgroepe en produksie-eienskappe. Baie van die Europese rasse is intussen reeds goed bestudeer ten opsigte van hulle bloedgroep-genetiese samestelling. Böhm e.a., Ljubljana, Joegoslawië het 'n verdere bydrag gelewer, hierdie keer oor die Sloweniese beesrasse. Ten spyte van die feit dat die materiaal relatief klein was kon 'n genetiese verwandskap met die Simmertaler en die Bruin Switser beeste bepaal word.

Drie referate is gelewer oor navorsingsresultate ten opsigte van korrelasies tussen bepaalde produksie- en liggaams-eienskappe aan die

een kant en bloedgroep-eienskappe aan die ander kant. Die resultate dui ongelukkig nie almal in dieselfde rigting. Die groot moeilikheid met al hierdie studies lê in die geringe aantal van nakomelinge, die aanhoping van verskillende gene deur moderne teelmetodes, veral deur kunsmatige inseminasie, en in die feit dat die belangrikste produksie-eienksappe deur 'n groot aantal gene bepaal word. Hierdie moeilikhede word nou so groot, dat die oplossing van korrelasievraagstukke nou baie skepties beskou word. Resultate wat verkry is mag geldig wees vir die bevolkings, waar hulle verkry is, maar hulle moet baie versigtig beoordeel word as hulle op andere bevolkings oorgedra kan word. 'n Mens weet nie of 'n werklike genetiese koopling of pleiotropie 'n rol speel nie en of die toevallige aanhoping van bepaalde gene in 'n bepaalde bevolking net 'n skynbare korrelasie toon.

So het Smith en Pfau, Sussex, Engeland 'n korrelasie kon bepaal tussen vetpersentasie van die melk en die S_1-bloed-faktor van die SU-sisteem. Hulle berig verder oor 'n nadelige effek van die bloedfaktor J op die skofhoogte van pasgebore kalwers. Daar moet genoem word, dat die materiaal klein was.

Oosterlee, Wageningen, Holland het daarop gewys dat al die genetiese faktore wat die melkproduksie beïnvloed homosigoot moet voorkom as gevolg van die seleksie in die beesbevolkings gedurende die laaste dekades. Die variabiliteit wat nog oorgebly het moet dus van relatief geringe invloed wees op die eienskap onder bespreking. Die ontdekking van korrelasies tussen hierdie faktore met geringe invloed en bloedgroep-eienskappe is dus net moontlik op grond van 'n baie deeglike Analiese van die Materiaal en op grond van resultate van 'n groot aantal diere. Die Hollandse resultate lewer min bewyse vir die bestaan van sulke korrelasies.

Oor die moeilikhede wat kan ontstaan by die praktiese uitvoering van afstammingsbewyse by beeste, het Bouw, Wageningen, Holland 'n hoogs interessante bydrae gelewer. Uit die grootmateriaal wat in Holland ondersoek word, kon hy drie gevalle aanhaal, wat op "crossing-over" gedui het. 'n Hele reeks bloedgroep-bepalings is uitgevoer van nakomelinge, ouers, broers en susters van drie Hollandse bulle wat die eerste bewyse vir die "crossing-over" van bloedgroep-genes gelewer het. In al die drie gevalle was die fenogroepe by die oorgang van die ouer na die nakomeling effens verander: Elke keer is die aantal faktore deur een vergroot, wat uit die fenogroep ontneem is, wat deur die alternatiewe geen bepaal word. Bouw het beklemtoon, dat in twyfelagtige ouerskapbepalings dit noodsaaklik is, om ook diere te toets wat baie na aan die betrokke diere verwand is.

'n Oorsig oor die toepassing van bloedgroep-navorsing in die tweelingdiagnose is deur Rendel, Uppsala, Swede gegee. Twee-eisellige tweelinge van verskillende geslag beinvloed mekaar in die voorgeboortelike lewe deur die plasentêre anastomosis van hulle weefsels. Die geslagtelike ontwikkeling van die vroulike tweeling word gerem deur die hormone van die manlike tweeling. Op die manier ontstaan onvrugbare "intersexe" — vroulike diere wat onvrugbaar is. In die bloedbeeld word die foetale anastomosis waargeneem deur 'n eritrosiete-mosaïk. Elke lid van die tweelingpaar besit 'n sekere tolerans teenoor die rooi-selle van sy maat wat nou in sy eie bloedsisteem sirkuleer. Dit is nou bewys

dat beenmurgselle wat verantwoordelik is vir die opbou van rooi-selle van die een maat na die ander oorgaan en daarna voortgaan met die rooi-selvorming in die liggaam van die maat. 'n Differensiasie van die twee tipes van rooi-selle is moontlik deur bepaalde bloedgroep-toetse. Rendel het by sy ondersoeke gevind dat in 90 persent van alle gevalle by tweegeslagtelike tweelinge hierdie anastomosis toon. In teenstelling met die bloedgroepbeeld word die transferrientiepe nie deur anastomosis beïnvloed. Monosigoot kan 'n tweelingpaar net wees as die bloedtipe *en* die serumtransferrine *en* die hemoglobientipes absoluut identies is. 'n Monosigotie kan net uitgesluit word, maar nooit bewys word nie. Net by 5.7 persent van 442 gelykgeslagtelike tweelingpare in Swede kon 'n monosigotie nie uitgesluit word nie.

Matousek, Libechow, Tsjeggo-Slowakye het 'n referaat gelewer oor antigeniese eienskappe van bulsperma. In groot reekse van immuniserings is heteroimmuunsera geproduseer. In hierdie immuunsera is die titer van spermaagglutinine bepaal. Daarna is die absorpsiekrag van sperma gemeet, wat uit verskillende dele van die geslagsapparaat kom. Met hulp van immuun-elektroforese is presipitiene tussen die antisera en vloeistowwe uit die testikels en die bykomstige geslagskliere bewys,.

Osterhoff en Van der Walt, Onderstepoort, Suid-Afrika het die invloed van bloedgroepantigene en teenliggaampies op die voorkoms van bloedoortappingsreaksies by die bees bespreek op grond van 165 oortappings het die skrywers tot die volgende gevolgtrekkings gekom: Bloedgroepe en normaal voorkomende isohemolisiene toon net 'n relatief onbelangrike langs baie ander oorsake van bloedoortappingsreaksies. Oor die algemeen word afgeraai om bloedoortappings op dragtige en lakterende koeie uit te voer; die gevaar van abortus of exitus is te groot. Hematologiese en immunologiese toetse is nie in staat om skokreaksies wat eventueel mag optree, vooruit te bepaal. Geen bewyse kon gebring word dat bepaalde bloedgroepantigene verantwoordelik was vir bloedoortappingsreaksies. Deur konsensieuse observasies van pols- en asemfrekwensie gedurende die oortapping is dit moontlik om skokreaksies waar te neem en sodoende moeilikhede te vermy.

Oor verbeterings in die tegnieke vir die bloedgroep-bepalings is berig deur Bouw, Wageningen, Holland, was nuwe apparate vir die uitvoering van hemoliesetoetse verduidelik het en deur Schmid, München, Duitsland, wat oor 'n vergelyking van verskillende konserveringsvloeistowwe vir bloedmonsters, wat in bloedgroep-toetse gebruik sal word, gerapporteer het.

Ondersoeke oor die frekwensie van 9 eritrosiet-antigene by perde van 6 verskillende rasse was die tema van 'n referaat van Podliachouk, Parys, Frankryk en Kaozmarek en Zwolinski, Posen, Pole. Van alle perde wat ondersoek is, het 28 per sent normaal voorkomende bloedgroepteenliggaampies. Die frekwensie van die bloedgroepgene varieer in 'n hoë mate tussen die verskillende perderasse.

Die huidige posisie ten opsigte van die bloedgroepnavorsing by varke is uiteengesit deur Andresen en Baker, Ames, V.S.A. Op hierdie tydstip word in die verskillende laboratoriums omtrent 30 sera vir die bestudering van bloedgroepeienskappe by varke gebruik. Elf genetiese bloedgroepsisteme is bekend. Deur immunisering van 'n sog met bloed van die beer

was dit moontlik om kunsmatig by die klein varkies van 'n werpsel Morbus haemolyticus te produseer. Twee varkies het 42–48 ure na die suip van die eerste moersmelk gevrek.

Oor die tegnieke van bloedgroep-bepalings by varke het Buschmann, Munchen, Duitsland gerapporteer. Oor die algemeen word vier verskillende toetsmetodes toegepas: Hemoliesetoetse, direkte agglutinasie, dextran-toetse en die indirekte agglutinasietoets.

'n Baie eienaardige siekte by klein varkies, purpura haemorrhagica op trombosietopeniese basis, is deur Lie, Oslo, Noorweë beskryf. Studies op hierdie siekte het bygedra dat spesifieke Trombosiete-agglutiniene ontdek is. Die opbou van hierdie agglutiniene kan bereik word deur immuniserings met trombosiete van 'n ander dier. Die diaplasentêre immunisering van die moederdier deur die fetus is moontlik. Teenliggaampies word in die kolostrum uitgeskei en gee die siektesimptome wat beskryf is.

Deur Briles, Dekalb, V.S.A. is 'n baie omvattende oorsig oor die bloedgroep-navorsing by pluimvee gegee. By kruisings tussen verskillende rasse van duiwe en eende is vir die eerste keer "hybrid substances" — bastersubstansies opgemerk. Dit is substansies wat in altwee oorspronklike rasse ontbreek. Tot dusver was daar sewe verskillende sisteme by hoenders bekend, maar Briles kon nou oor vyf verdere nuwe sisteme rapporteer. Deur die gebruik van phytohaemagglutiniene kon 'n verdere antigeen op die rooi-selle van hoenders bepaal word (Hi), wat 'n bepaalde verband met die osetrogeenspieël in die dier het. 'n Verdere bastersubstansie kon gevind word in kruisingsdiere, wat geproduseer is uit 'n kruising van hoenders en fisante. Swaar hemolitiese siektes kan by hoenders voorkom as die hen agglutiniene besit teen 'n bepaalde faktor wat die kuiken van die haan geërf het. 'n Mens kan maklik swaar anaphylaktiese reaksies by hoenders verkry, byvoorbeeld deur die inspuiting van antisera wat teenliggaampies bevat wat teen die bloedgroepe van die bepaalde hoender gerig is. 'n Ooreenstemming van bloedfaktore in die B-sisteem is noodsaaklik vir die "tolerance" — verdraagsaamheid by veloorplantings by hoenders. — Resultate is voorgelê oor korrelasies tussen produksie-eienskappe en bloedgroepe by hoenders. Daar bestaan nou geen twyfel meer oor hierdie korrelasies wat nou oor en oor by hoenders bewys is. Die vitaliteit van volwasse diere word bepaald deur sekere B-allele beïnvloed. Verskille in die eierproduksie tussen enkele diere met verskillende B-bloedgroepe is herhaaldelik vasgestel in verskillende lyne van teeldiere.

Matsumoto, Sapporo, Japan het oor gelyksoortige resultate berig. Hy was in staat om te bewys, dat hoenders wat heterosigoties is ten opsigte van hul B-locus betere produsente is as die homosigote diere. Sowel die natuurlike seleksie asook die kunsmatige seleksie deur die mens is gerig wat homosigoot is ten opsigte van hul B-sisteem.

Gasparska, Warschau, Pole het in 1958 met die bloedgroepnavorsing by hoenders begin en was in staat sedertdien deur iso-immuunsera 9 bloegroep-sisteme met 24 bloedfaktore op te stel. Hierdie toetsera is nie dieselfde as wat deur Briles beskryf is nie. Vir die bepaling van antigene in die bloedgroep-sisteem A is normaalserum van beeste gebruik wat geen normaal voorkomende teen-liggaampies teen beesoritrosiete het nie.

By die bestraling van hoendereiers in die blastoderm-stadium met X-strale kon vasgestel word dat kuikens wat uit hierdie eiers kom, geen nuwe bloedgroepfaktore besit nie; dus het geen mutasies voorgekom nie.

Borel, Zürich, Switserland was nie in staat om by die toetse van 49 verskillende ekstrakte van leguminosae spesifieke reaksies met hoenderbloed te vind nie. 'n Groot reeks van leguminosae het wel rooi-selle van hoenders geagglutineer, wat die Hi-antigeen gehad het. Twee ander ekstrakte het 'n baie sterk anti-T aktiwiteit getoon.

Losipovic, Gliha en Steh, Ljubljana, Joegoslawië het 13 antisera geproduseer wat hulle gebruik vir die bloedgroep-bepaling by hoenders. Volgens hul ondersoeke is die teenliggaampies teen rooi-selle nie alleen in die serum, maar ook baie sterk in die eiergeel teenwoordig. Net 50 persent van alle eiers van hoenders wat geimmuniseer is, is uitgebroei in vergelyking met 75–85 persent wat die normale syfer vir die bepaalde rasse daarstel.

McDermid, Halifax, Engeland het oor die bewys van inkomplete teenliggaampies berig; die metode was die antiglobulientoets. Dikwels word by immuniserings eers inkomplete teenliggaampies en daarna komplete teenliggaampies opgebou. Die spreker was in staat om te bewys dat die opbou van bloedfaktore op die rooi-selle van hoenders eers met die ouderdom van drie weke afgesluit word.

Ogden, Stock/Essex, Engeland het by hoenders 3 transferrientiepes ontdek, die in 'n twee-alleel-sisteem bepaal word. In die konalbumien van eiers en in die spermaplasma van hane kon ook protïenfenotiepes bepaal word.

Die Europese navorsers op die gebied van hoenderbloedgroepbepalings het nog 'n spesiale samekoms gereël waar hulle moontlikhede vir nouste internasionale samewerking, standardisering en uitruil van toetssera bespreek het. Bloedgroepnavorsing by hoenders word reeds in 12 verskillende lande in Europa uitgevoer: België, Holland, Frankryk, Spanje, Duitsland, Switserland, Swede, Pole, Engeland, Jugoslawië, Hongarye en Tsjeggo-Slowakye.

Maar nie alleen die verskillende aspekte van bloedgroepnavorsing het ter sprake gekom — ander bloedeienskappe wat 'n oorerflike agtergrond het is in verskillende referate bespreek. Die serumtransferrien- en haemoglobientipes toon biochemiese sisteme wat deeglik bestudeer word. Intensiewe ondersoeke gedurende die laaste jare het die bewys gelewer, dat verskillende dele van die serumprotïene oorerflik is. Die metode van die serumelektroforese in stysel-gel het dit moontlik gemaak om hierdie genetiese verskille te ontdek.

Krisjansson, Ottawa, Kanada het berig oor sy navorsingsresultate oor die serumeiwitte by varke. Met hulp van die genoemde stysel-gelelektroforese kon by varke verskillende transferrienbande gevind word en hulle genetiese agtergrond opgeklaar word. By hoenders is 'n prealbumienband gevind wat in direkte verband staan met die ovulasiesiklus.

Braend, Oslo, Noorweë en Stormont, Davis, V.S.A. het die serumtransferriene by perde bestudeer. Hulle kon 'n groot variasie vind en 'n genetiese sisteem met 6 allele opstel.

Gahne, Uppsla, Swede het verdere nuwe ontdekkings by die bekende sisteme bygevoeg: Hy berig oor beeste by wie die stadig lopende alpha-2-

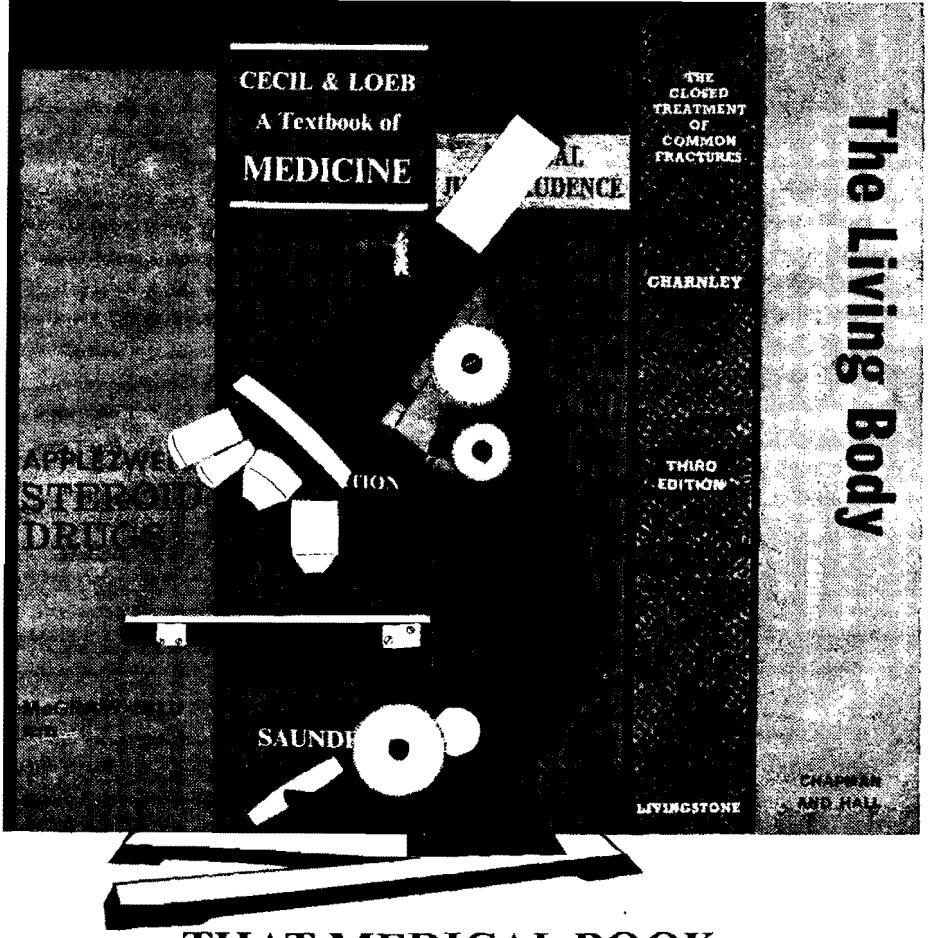
fraksie in die serum ontbreek. Verder kon hy 'n polimorphisme by postalbumiene beskryf wat oorerf word volgens die twee-alleel-stelsel. Ook die ensiem suurfosfatase by beeste, wat bewys kon word deur 'n modifikasie van die stysel-gel-tegnieke in 'n siemogram, besit 'n genetiese agtergrond.

Moustgaard en medewerkers, Kopenhagen, Denemarke het deur biochemiese analieses van bees- en varkglobulien die bewys gebring dat die aminosuur isoleucin by beeste net in die fetale hemoglobien voorkom, terwyl by varke hierdie aminosuur sowel in die fetale haemoglobien asook in die haemoglobien van volwasse diere voorkom.

Die groot gebied van oorerflike biochemiese sisteme by ons plaasdiere stel 'n groot navorsingsveld daar, en 'n mens kan waarskynlik nog baie interessante resultate hier verwag.

de Ligny, Ijmuiden, Holland het die reeks interessante lesings afgesluit met 'n spesiaalreferaat oor bevolkingsbiologiese studies op visse in die Noordsee, hoofsaaklik op skol en haring. Behalwe die antigeen C, wat reeds deur Sindermann, V.S.A. by die Atlantik-haring vasgestel is en wat nou ook in die Noordsee-haring gevind is (van 3,000 enkele diere in 97 persent gevind), is nog 'n verdere antigeen op die vis-eritrosiete gevind wat in verskillende bevolkings in verskillende frekwensie optree. — Die bewys van hierdie bloedgroepfaktore by visse word met heteroimmuunsera uitgevoer wat deur immuniserings van haring bloed op konyne verkry is. Die anti C wat gebruik word om die antigeen C te bepaal is gevind deur immuniserings van bokke met haringslewer of deur die saadekstrakte van Lima bone. de Ligny het verder vastestel dat oor die algemeen die hemoliese beter resultate lewer as die agglutinasietegnieke.

Die konferensie is afgesluit met 'n interessante ekskursie na die grotte van Postojna en na die Adriatiese Meer.



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SOME ASPECTS OF THE VETERINARIAN ON DUTY AT THE ZOO

H. EBEDES. — P.O. Box 449, Springs, Transvaal.

INTRODUCTION

In my opinion, one of the most interesting branches of veterinary practice, is that connected with the care of wild animals, especially captive animals in zoos. Every case is a problem which taxes diagnostic ability to the fullest extent, as knowledge of the diseases and pathological conditions of wild animals is rather limited. Treatment is sometimes empirical and the veterinarian has to proceed with utmost caution because the animals entrusted to his care are usually extremely valuable and often difficult to replace.

Basically there is a similarity between the anatomy and phisiology of our domesticated animals and the wild ones, but it is essential to understand behaviour patterns and temperaments of each species. This can only be achieved by patient study and careful observation.

Today zoos are playing a role of ever increasing importance in the preservation of animals doomed to extinction. Some species of animals, already extinct in nature, are to be only found in zoos, where they are successfully kept and bred. The veterinarian and the biologist have done notable work in the study of wild life at close quarters and in so doing have greatly assisted the conservationists in the field.

In the London zoo, we get a good idea of the advances made in treating wild animals. In 1955, 58 per cent of animals recovered from illness. In 1959, five years later, over 80 per cent recovered.

Two of the major achievements in recent years resulting in the successful keeping of zoo animals have been, firstly, the institution of correct feeding principles, and secondly the development and application of efficient methods of tranquillisation.

NUTRITION

Most zoos are today feeding balanced rations, very similar to the rations fed to domesticated animals and are able to keep their animals and birds contented and in peak condition all year round. Directly as a result of the balancing and supplementing of rations, there has been a marked decrease in the mortality rate and an increased resistance to internal parasites and bacterial infections. Well fed animals are also not easily tempted to accept feeding by the public, which has occasionally been the cause of unnecessary mortality.

For feeding purposes, zoo animals are devided into five groups viz. the herbivoures, omnivoures, carnivoures, birds and fish eating animals.

The feeds, manufactured by milling companies are mixed with the necessary vitamines and minerals in the zoos and fed either as a cake or in the form of pellets. In summer the diets for the herbivoures are supplemented with green grass and fresh lucerne, but judging from the excellent condition of these animals at the end of winter, this practice could be dispensed with entirely.

The most outstanding result of this modern balanced feeding programme, can be seen by the fact that animals which previously were difficult to breed in captivity eg okapi, giraffe, hoppopotamus, elephants, gorilla and flamingoes, to mention just a few, are now being bred successfully.

Tranquillisation and Immobilisation

Most of the basic research connected with the assessment of drugs used for wild animal tranquillisation has been undertaken by zoo veterinarians and veterinarians in the field. With very few exceptions, nearly every species of animal has been successfully tranquillised and immobilised. This has been of emense benefit to veterinarians and game conservationists as it has facilitated the capture and transportation to other locations of dangerous animals such as rhino and hippo etc; allowed animals like elephants to be marked for studying migratory habits and allowed safe and painless surgical procedures to be carried out.

Of the immobilising drugs, succinylcholine chloride and gallamine triethiodide have given the most efficient and consistent results if used with caution and are safer than the formely used nicotine alkaloids, which often have undesireable side effects.

The Cap Chur Gun and modified crossbow have proved to be indispensable for the administration of these drugs.

Tranquillisers have practically very little disadvantages even when slightly overdosed. However care must be excercised when tranquillising unfit and aged animals. The phenothiazine derivatives are the most commonly used and can either be administered orally or parenterally. As much as tranquillisation has become almost routine for premedication in human and veterinary medicine, so it has also become important in zoological work. Restraint by means of force has now become a thing of the past.

Veterinary Work at Casseldale Zoo.

The Casseldale Zoo was originally established as a game park in order to utilise undermined ground unsuitable for human habitation. It is maintained by the Springs Parks Department and has expanded rapidly in the past few years. Initially only a few species of game were kept, but the zoo now has lions, tigers, leopards, camels, ostriches, an crocodile ad several species of game, apes, cage and water birds.

Briefly I would like to mention a few cases I have attended to as consultant veterinarian.

BOTULISM. One of the Royal Swans developed a gradual paresis which was followed a few hours later by complete paralysis of the legs and wings, The neck curved forward until the beak touched the ground and stiffened completely. There was no response to stimuli and breathing became very shallow. It died thirty hours later. Post Mortem examination was negative and a diagnosis of botulism was made. The next day a duck with paralised neck was found dead in the same pond and in desperation I decided to inoculate all the swans, geese and ducks immediately with the Onderstepoort Lamsiekte vaccine; $\frac{1}{4}$ cc. was injected subcutaneously and repeated six weeks later. As no further cases occurred, I concluded that the innoculation protected the birds against possible intoxication.

ARTHRITIS IN A CAMEL. The ex-circus bull camel, approximately fifteen years old, developed a warm painful swelling of the left hock. After casting, about 120cc.s. of serous, bloodfluid was aseptically aspirated and 100mg. DELTACORTRIL (Pfiser) injected into the joint; 20 c.c.s. Penicillin and 100 mg Deltacortril was injected intramuscularly. The next day the joint was only slightly distended and the camel was able to walk slowly. The above treatment was repeated. By the third day he was able to keep up with the cows and was eating normally. Every four or five months the condition recurred and each time he responded dramatically to treatment.

After eighteen months, he developed a severe cough in conjunction with the arthritis. Daily aspiration together with hot fomentations gave no relief and the pneumonia showed no response to repeated parenteral antibiotic therapy. During this period he was completely off his food and lost condition at an alarming rate. It was then decided to send him to Onderstepoort for X rays and further treatment. We tranquillised him with 400 mg Largactil (May Baker). Shortly after arrival at Onderstepoort he died. The Post Mortem revealed that death was due to toxaemia as a result of pneumonia and multiple abscessation of the lungs, liver and peritoneum. Unfortunately no bacterial examinations were carried out so the causal organisms were not identified.

FRACTURED RADIUS IN OSTRICH

Possibly as a result of fighting with the other ostriches or trying to escape from his enclosure, the newly-arrived male ostrich was presented to me with a fractured radius and ulna. After reducing the bones, the fractured wing was firmly tied to the body with twelve inch-wide strips of sheeting. Six weeks later the bandage was removed, complete union had taken place and he had full use of the wing.

FROZEN CROCODILE

An unexpected early winter frost caught us before the crocodile pool could be drained and covered with straw and so we found ourselves with a frozen crocodile. The previous year the other two crocodiles were frozen to death. To all intents and purposes the crocodile appeared dead

and the only indication of life was an almost imperceptible twitch of the eyelids when pricked with a pin. He was pulled out of the ice-cold water and I ordered him to be bathed with warm and then hot water to thaw him out. After four hours there were signs of revival. As his breathing improved, blood appeared from his nostrils indicating severe lung damage; 10 c.c.s. penicillin was injected i.m. between the horny scales using a thick six inch needle. He was treated with warm water and pinicillin for five days and covered with straw at night. After a week the last eighteen inches of his tail started turning gangrenous. This was treated with warm water and antibiotic ointment, but the last eight inches of his tail sloughed off. The Parks Department have now built a low hut which is filled with straw and our crock. makes very good use of it.

Tranquillizing a lion

A lion, suffering from gastritis, was successfully tranquillized with Acetylpromazine (Boots) and I was able to administer glucosaline, Protogest (B.W.&Co.), hydrocortisone acetate and antibiotics intravenously using the saphenous vein. Weight was estimated to be 200 lbs and the dosage rate of 1.00 mg per 10 lbs. was used; 10 c.c.s. of the 2mg/c.c. solution was injected in three doses over a period of one and a half hours using the Palmer Cap-Chur Gun. The lion responded very well to the treatment.

Rearing a baby Camel

Because three successive baby camels had previously died, an all-out attempt was made to rear the fourth one. Zelda, weighing a miserable forty pounds at birth was immediately disowned by her mother. All the joints were enlarged, soft and rickety and she was unable to stand. Every attempt to milk the mother or to allow the calf to suckle met with failure. As the mother was becoming aggressive and ummanageable and attempted to kill the calf, we isolated it and started to bottle-feed her with three ounces of Complan (Glaxo) mixed with a half to one pint of warm pasteurised cow milk, three times daily; 10 c.c.s. Calciostelin (Glaxo) was injected i.m. every third day for three weeks and 5 Grams calcium gluconate added to the milk daily. The milk and Complan was gradually increased until she was getting eight pints daily. The Complan was stopped at three weeks.

After a month Zelda was able to stand when lifted up and managed to hobble around her small enclosure. At five weeks the cow showed interest in the calf and allowed her to suckle. By two months Zelda was making good progress. The joints were strengthening and movement was much easier. She was still getting 5 Grams of calcium gluconate daily which she now accepted in tabletform and a weekly injection of Calciostelin. At four months she started to nibble at lucerne hay sprayed with molasses and at six months was sent out into the paddock to graze with her mother. In

November, 1963 she will be two years old, is nearly as big as mother and is a beautiful specimen.

KETOSIS IN SPRINGBUCK. A number of Springbuck were brought to the zoo by truck from a farm in the southern Orange Free State. Two were dead on arrival, seven died shortly after and the remaining nine showed varying degrees of the following symptoms: ataxia, muscular twitching, blindness, curved neck and coma. Apparently the buck were chased until exhausted, kept tied without food for four days while awaiting the arrival of the truck and not fed en route. I treated each one with 25 mg DELTACORTRIL (Pfiser) i.m. and 150 c.c.s. gluco saline and 50 c.c. M.F.C. (May Baker) i.v. Only five responded to treatment and recovered.

DEWORMING TIGERS. DIZAN (Corn States Laboratories) tablets is an effec- and safe remedy for the elimination of Toxascaris in tigers. A dosage rate of 10 mg per lb bodyweight for five days without starving was used. The faeces are stained a deep blue colour which facilitates finding the dead worms. After one course of treatment, one hundred and twenty worms were counted from two tigers.

ACKNOWLEDGEMENTS

I wish to thank Mr. P. Botha, Director of the Springs Parks Department for permission to publish this article.

LITERATURE CONSULTED

Hans Wackernagel. Modern Methods of Feeding Wild Animals in Zoological Gardens. Published by The Vitamin Department, F. Hoffmann — La Roche & Co. Ltd., Basle, Switzerland.

INTERNATIONAL ZOO YEARBOOK. VOLUMES I AND II. Published by the Zoological Society of London, Regents Park, London N.W.I., Great Britain.

PUBLIC RELATIONS SERVICE

Dr. P. A. Boyazoglu, B.V.Sc. (Pta) eertydse redakteur van die U.P. studente se wetenskap tydskrif, hoop om in 1964 die Ph.D. graad in voedingsleer te behaal. Dr. Boyazoglu, wat op die personeel van die Veeartsenykundige Navorsingsinstituut te Onderstepoort is studeer alreeds die afgelope twee jaar aan die Universiteit Minnesota met behulp van 'n beurs van daardie Universiteit, en spesiale verlof en met volle betaling, van die departement Landbou-tegniese dienste.

Dr. R. Bigalke of Onderstepoort is overseas and will be away foi a year. He has been selected to attend a course of study on applied Entomology at the London School of Tropical Medicine. This course extends over a period of nine months. He will also visit places of interest in England, Germany, France and other countries in Europe. Mrs. Bigalke and the children have accompanied him.

Dr. D. W. Verwoerd is terug op Onderstepoort na hy vir twee jaar lank in Duitsland studeer het. Hy is werksaam in die afddling Biochemie.

Dr. Alfred Richardson is employed in a veterinary practice in London, where he hopes to gain much experience.

Dr. S. J. van Rensburg of the Reproduction Section at Onderstepoort has left for overseas and will be away for approximately a year. He was awarded a sholarship by the Imperial Cold Storage. He will study in the United States and Britain.

We present our compliments and hearty congratulatoins to:

(i) Dr. P. J. du Toit on his appointment as Chancellor of the Rhodes University. He has taken the symbol of his profession into many spheres and to many places. Long may he live.

(ii) The President Dr. H. P. Steyn on his appointment as Vice-Chairman of the Veterinary Board.

Mr. H. E. Harbour, Technical Director of Cooper McDougal and Robertson Birkhamstead United Kingdom, paid a visit to Pretoria between 18–20 November 1963 and had talks with the Chiefs of the Veterinary Research Institute and Veterinary Field Services.

ANNUAL MEETINGS OF BRANCHES AND GROUPS

WITWATERSRAND BRANCH

Minutes of the 89th meeting of the branch held at the Wanderer's Club, Johannesburg on 11th June, 1963.

PRESENT

Members:

Drs. Diesel, Boswell Hempstead, Mason, Dickson, P. Keep, Langlands, Azzie Kempster, Warnes, Louw, Theron, Bisschop, Thompson, Breytenbach, Craig, Erasmus Purchase, Greathead, P. Meara, Snyders, De Jager, Kunnen, Pappin, McHardy.

APOLOGIES:

Drs. H. P. Steyn, M. E. Keep, E. M. Hearn, J. D. H. Poole.

VISITOR:

Dr. De Bruyn.

MINUTES OF THE 88TH MEETING:

After some discussion these were approved.

ADDRESS BY DR. A. M. DIESEL

Dr. A. M. Diesel (Pretoria) gave a talk on the Professional Ethical Code with special reference to the New Veterinary Act. The amendments have been made and the Act is now ready for signature.

Thereafter Dr. Diesel touched on the

Medical Dental and Pharmacy Act
Animal Protection Act
Common Law as it affects the veterinary surgeon
Veterinary Associations and Societies, and
The Laws of the Community with reference to the Profession.

Questions were put to Dr. Diesel on a few points which arose from his talk.

The Chairman, Dr. Hempstead, thanked Dr. Diesel on behalf of the Branch.

The Chairman gave a resume of the year's meetings (5) and mentioned that, in the absence of the Secretary, he could not present a Treasurer's Report. The finances of the Branch, however, are sound.

A vote of thanks was passed to Dr. and Mrs. Boswell for providing facilities at their home for the Annual Social Function.

ELECTION OF OFFICE BEARERS

THE CHAIRMAN: DR. HEMPSTEAD, and
VICE CHAIRMAN: DR. WARNES were re-elected.
DR. PEARL KEEP was elected HON. SECRETARY.

ANTI-CRUELTY LEAGUE:

Only seven members had replied to a circular asking what professional attendance they were prepared to offer at the League's clinic.

DR. AZZIE suggested that an issue of vouchers be made to the League whereby their patients could be referred to veterinary surgeons in particular areas.

DR. KEMPSTER suggested that the League admit animals to their clinic and that veterinary surgeons should make daily routine visits there at their own convenience.

DR WARNES suggested that the small nulceus of volunteers should make a start by providing attendance at specified hours at the clinic.

DR. BOSWELL said that in view of the small number of volunteers he could not support the scheme in its present form.

DR. MASON decried the growing number of such societies and said that veterinarians would be more willing to help if one large organisation with branches were formed.

After considerable discussion it was proposed and seconded that a small sub-committee be formed to examine the possibility of a voucher scheme.

SUB-COMMITTEE to consist of:

Drs. Azzie, Louw, Kempster (Convenor) and Dickson.

GENERAL

Dr. Pappin suggested that the Branch consider alternative venues for its meetings to cater for practitioners on the East and West Rand. The chairman and secretary to look into the matter.

Dr. Mason offered facilities at the Rietfontein Laboratories.

The meeting closed at 10.45 p.m.

VERSLAG BETREFFENDE DIE JAARVERGADERING VAN DIE O.V.S., N. KAAP EN BASOETOLAND TAK GEHOU TE BLOEMFONTEIN OP 3 AUGUSTUS 1963 OM 9 V.M.

Agtien lede van die plaaslike tak sowel as die President, Dr. H. P. Steyn, en die Sekretaris Dr. A. M. Diesel, asook Prof. K. v.d. Walt as gasspreker, het die vergadering bygewoon.

Die voormiddag is gewy aan die afhandeling van die besigheidsvergadering waarvan die besprekings as volg saamgevat kan word:

Vier nuwe lede is voorgestel en deur die Voorsitter verwelkom.

Voortvloeiend uit die notule doen 'n lid navraag aangaande die besluit wat op die vorige vergadering geneem is betreffende die strenger beheer van Middels b.v. antibiotika. Prof. v.d. Walt noem dat die kommissie wat die saak behandel het se taak voltooi is, en dat die verslag na

die Sekretaris van Landbou Tegniese Dienste verwys is. Die wet sal verander moet word, om doeltreffende beheer sover as moontlik te verkry.

Die volgende komitee is verkies vir die volgende jaar:

Dr. D. J. Louw. (Voorsitter).
Dr. W. J. Ryksen. (Onder-Voors.).
Dr. H. Coetzee. (Ere-Sekr. Penningmeester)

asook addisionele lede Drs. N. Barrie, P. de la Harpe en G. H. J. Stevens.

'n Bespreking vind plaas t.o.v. die maand en dag van die algemene jaarvergadering van die Tak. 'n Besluit word geneem dat die vergadering weer die eerste week in Junie moet plaasvind en dat die Komitee 3 maande voor die tyd die datum bepaal en vir goedkeuring aan die Moederliggaam voordra. Stembriewe sal ook aan alle lede gestuur word om te bepaal watter dag en datum die geskikste is.

Prof. v.d. Walt gee vervolgens 'n verduideliking betreffende die Fakulteitsfonds wat gestig is met die doel om veeartsenykundiges van wêreldfaam na S.A. te nooi om lesings aan die lede te lewer. Prof. Rimington besoek S.A. vanjaar.

'n Bespreking vind plaas betreffende die naam van die plaaslike tak en die mening word uitgespreek dat die tak se naam verander moet word na O.V.S.-tak. 'n Voorstel dat die konstitusie op die volgende algemene jaarvergadering so verander word, word ingedien.

Die President, Dr. Steyn, deel die vergadering mee dat baie vordering in die laaste tyd gemaak is met betrekking tot die beskerming van die Privaat Praktisyn teen ongeoorloofde mededinging byvoorbeeld firmas wat middels verkoop en streeksdiagnostiese sentra. 'n Komitee is aangestel om die verhouding tussen Privaat Praktisyns en streeks-diagnostiese sentra so goed moontlik te kry. Moeilikhede ontstaan gewoonlik met die begin van 'n streeksdiagnostiese sentrum. Die Privaat Praktisyn moet ook persoonlik die Staatsveearts nader in gevalle waar hy te na gekom is. Die Raad help soveel as moontlik in die oplossing van probleme.

Dr. Steyn meld voorts dat 'n paar belangrike nuwe beginsels in die nuwe wetgewing vervat word naamlik:

(i) Die raad het die volle beheer oor die opleiding van Veeartse;
(ii) Register gaan geopen word vir tegniese assistente en Veterinêre assistente:
(iii) Niemand mag Veeartsenykunde praktiseer wat nie 'n veearts is nie.

Die ondervoorsitter, Dr. Ryksen, bedank die President vir die inligting. Genoeg nadruk kan nie daarop gelê word dat die Privaat Praktisyn deur die streeksdiagnostiese sentra verdring word nie, deur die beter hulpmiddels waaroor die Staatsveearts beskik.

Verdere menings word gelug dat die Streeksdiagnostiese sentra nie net op 'n gespesialiseerde gebied sal funksioneer nie, maar dat die publiek bedien sal word wat 'n ongesonde toestand is.

Die namiddag is die volgende Wetenskaplike Voordragte gelewer:

(i) Metaboliese siektes in herkouers op groen weidings . . . Prof. K. v.d. Walt.

(ii) (*a*) Skin ulceration in the Canine;
(*b*) Abcess formation in the anal pouches of the dog;
(*c*) Drugfastness in Biliary Fever; . . . Dr. H. P. Steyn.
(iii) (*a*) Toxic encephalitis in the thoroughbred;
(*b*) Rheumatism in the Dog; . . . Dr. G. C. Dent.
(iv) Gevalsverslae:
(*a*) Ruptuur van uterus sonder enige inmenging;
(*b*) Hypo poisoning;
(*c*) Acetonemia in pigs;
(*d*) Melkkoors in skape;
(*e*) Oatpoisoning in animals;
(*f*) Leptospirosis in the dog.

'n Suksesvolle dag is afgesluit met 'n skemerkelkparty in die Bloemfontein Klub.

S.A.V.M.A.—VETERINARY PUBLIC HEALTH GROUP

The Group held its 6th. Annual General Meeting at Onderstepoort on Wednesday 25th. September, 1963.

Dr. W. J. Wheeler and Dr. S. W. van den Heever were unanimously re-elected as Chairman and Honorary Secretary for the next three years. Sixteen members and six visitors were present. Dr. L. P. Colly gave a most interesting talk on "Some problems associated with Export of Beef", and Dr. M. M. Greathead spoke on "Milk Control on the Witwatersrand". Both papers elicited a lively discussion and numerous questions were asked.

The Secretary reported on the following matters:—

(*a*) Membership of the World Association of Veterinary Food Hygienists.
(*b*) The World Veterinary Congress at Hanover 1963.
(*c*) The two new veterinary public health posts that had been created during the previous year, bringing the total number of full time public health Veterinarians to 18.
(*d*) The revised scale of salaries of municipal veterinarians on which local authorities could claim $\frac{1}{3}$ refund from the State.
(*e*) The W.H.O. scholarships currently available.
(*f*) The progress of the two post-graduate training courses (M.Med. Vet. and Dipl. V.P.H.) in veterinary public health.
(*g*) The sound financial position of the Group and the availability of funds for special awards etc.

Under General, the following matters were raised:—

(i) The necessity for making representations for the amendment of legislation to provide for more uniform milk and meat control measures and the employment of veterinarians in public health activities.
(ii) The desirability of having a news bulletin and journal extract service to deal specifically with the requirements of group members.
(iii) The difficulties experienced by members living away from Pretoria to take post graduate courses.

MILK CONTROL ON THE WITWATERSRAND

M. M. GREATHEAD B.V.Sc., — Johannesburg Municipal Service.

The public health control of the Witwatersrand fresh milk supplies, excluding processing and distribution, is briefly outlined.

GEOGRAPHICAL.

The Witwatersrand region comprises those Reef towns between Randfontein and Nigel. Responsibility for fresh milk control is divided between eighteen adjoining local authorities, namely:— Randfontein, Westonaria, Krugersdorp, Roodepoort, Randburg, Johannesburg, Bedfordview, Edenvale, Germiston, Elsburg, Alberton, Boksburg, Kempton Park, Benoni, Brakpan, Springs, Nigel and the Peri-Urban Areas Health Board.

HEALTH PERSONNEL.

The control in each area is exercised by the local Health Department, whose dairy personnel varies from a health inspector working under a part-time medical officer of health and making use of the laboratory facilities of the South African Institute for Medical Research, to a staff of veterinarians and dairy inspectors with well equipped laboratories under the control of a full-time medical officer of health.

Most local authorities in the region employ a full-time medical officer of health, a part-time veterinarian and one or more dairy inspectors.

Veterinary Staff:

Three full-time veterinarians are employed by Johannesburg and one by Germiston; the Peri-Urban Areas Health Board is also appointing a veterinarian. Most local authorities use private veterinarians, on a part-time basis, as full-time employment for controlling less than 50 dairy farms is considered unjustified.

In Germiston the veterinarian is responsible to the medical officer of health for all aspects of milk control. In Johannesburg the veterinarians work under the medical officer of health, but are only concerned with the inspection and health of dairy herds, including laboratory control of milk-borne animal diseases such as tuberculosis, brucellosis and mastitis, and antibiotic contamination of milk.

Part-time veterinary duties comprise any of the following:— dairy herd inspection, tuberculin and mastitis tests, and herd milk testing for tuberculosis, brucellosis and mastitis.

PRODUCTION AND CONSUMPTION OF MILK:

The average daily production by dairy herds supplying the Witwatersrand for the twelve month period, ending 30th June, 1963, was 107,348 gallons. The average daily consumption of fresh milk in the region fluctuated between 86,688 and 99,912 gallons.[1]

It is estimated that this milk is produced by 97,000 cows.

DISTRIBUTION OF DAIRY FARMS:

In the Witwatersrand region, 1,117 dairy farmers have been registered by the Milk Board after being licensed by Health Departments; registration is subject to the approval of the dairy premises by these Departments. Some 850 farmers are permitted to sell milk in Johannesburg.

The majority of milk producers are situated in the adjoining districts of the Eastern, Southern and Western Transvaal, Northern and Eastern Orange Free State. The most distant farms are up to 230 miles from the distributing depots.

In some municipalities particularly Krugersdorp, Roodepoort, Bedfordview, Germiston, Boksburg, Benoni and Brakpan there are numerous dairy farms established on plots. Edenvale receives all milk supplies from distributors situated in other municipalities.

LICENCES AND INTRODUCTION PERMITS:

A dairyman farming within a municipal boundary requires a licence for which a fee is charged. One farming outside, who wishes to sell his produce in the municipal area must obtain a milk introduction permit, for which an annual fee may be charged by the issuing local authority; Johannesburg charges a fee of R6.00.

The permit is issued subject to the dairy premises complying with the necessary building and hygiene requirements. These are laid down in the local authority's by-laws, which are administered by the milk control personnel.

The permit or licence of one local authority is not necessarily recognised by others, although milk is controlled under the Public Health Act and the Reef Uniform By-laws, applicable to all Reef Municipalities except Johannesburg. This means that a farmer selling milk in several municipal areas needs a permit or licence for each area. Revised by-laws, which may be adopted by all local authorities, are being promulgated by Johannesburg.

MILK CONTROL:

The inspection of dairy premises and herds and the laboratory control of milk supplies varies from one area to another. Differing interpretations of by-laws and of laboratory results by medical officers, veterinarians and dairy inspectors create confusion amongst the producers and lead to friction with the Milk Board which regulates the marketing of milk in the region. A centralized or at least standardized system of milk control applied by all local authorities in the region is necessary. This could be either a central health control organisation operated or subsidised by the towns in the region or a uniform system of inspection and laboratory control applied by each local authority on a reciprocal basis.

MILK TESTS:

The milk tests applied in each municipality vary.

In the larger municipalities having their own laboratories the range of tests carried out is wide, although the South African Institute for Medical Research will make any tets desired on milk samples submitted. Any of the following may be used:—

Bacteriological plate count, presumptive or faecal coliform tests; Resazurin and methylene blue reduction tests, biological tuberculosis test, Brucella ring and agglutination tests, Breed and Cream smears, sediment test, and antibiotic tests as well as chemical tests under the Foods, Drugs and Disinfectants Act.

MILK BOARD:

On July 1st, 1962, the Milk Board was established to regulate the marketing of fresh milk in the following regions — Pretoria, Witwatersrand, Bloemfontein and Cape Town.

On the Witwatersrand the Board operates two surplus milk pools in Johannesburg and Springs respectively. Milk is diverted from one municipal area to another or to the pools, depending on the supply and demand. As has been stated, the absence of reciprocal agreements between local authorities on milk permits or licences, hampers the free movement of milk from one area in the region to another, but the Health Authorities insist that adequate public health control measures must be enforced and that milk marketing is a secondary consideration.

CONCLUSION:

The number and varying size of local authorities in the region, the differing standards of milk control applied, the wide area from which the milk is derived and the marketing operations of the Milk Board make necessary the establishment of a standardized system of public health milk control, acceptable to all local authorities in the region.

ACKNOWLEDGEMENT

The Director, Abattoir and Livestock Market Department Johannesburg for permission to present this paper.

REFERENCES

1. Regional Manager, Milk Board. Personal communication.

DIE REPRODUKSIE GROEP VAN DIE S.A.V.M.V. 3de JAARVERGADERING GEHOU TE ONDERSTEPOORT OP WOENSDAG 25 SEPTEMBER 1963

1. Verwelkoming word deur die Voorsitter dr. S. W. J. van Rensburg gerig. Verder verwys hy na die Notuleboek wat verlê is en dui daarop dat daar gepoog sal word om die saak weer in ere te herstel. Verder stel hy voor dat daar nie ledegeld vir die komende jaar gewerf moet word nie aangesien voldoende fondse nog beskikbaar is om alle lopende uitgawes te dek. Hierdie voorstel word algemeen aangeneem.

2. Verkiesing van nuwe Bestuur.

Nadat die Voorsitter hom nie weer verkiesbaar stel nie word die volgende Bestuur saamgestel.

Voorsitter: Prof. S. van Heerden.
Lede: Dr. B. la Grange.
Dr. J. H. Snyman.
Ere Sekretaris: Dr. A. P. Schutte.

3. Die volgende kort referate was gelewer wat interessante besprekings uitgelok het. Die besprekings moes ongelukkig weens die tydfaktor beperk word.

(i) S. J. VAN RENSBURG

„Nuwere konsepte aangaande die Hormonale beheer van Voortplanting in Herkouende diere".

Dr. van Rensburg dui op die ouere konsepte van hormonale balans en wys verder hoe die nuwere en meer aanvaarbare konsepte die teelsiklusse beinvloed.

Aandag word gegee aan die probleme i.v.m. die entiteit van persistente corpora lutea asook die terapeutiese waarde van hormonale behandelings in sekere geslagsafwykings in die merrie en die koei.

(ii) A. P. SCHUTTE en S. VAN HEERDEN

„Kliniese waarde van Sitologiese veranderings in die vaginale slymvlies van die Teef".

Die bespreking is toegelig met behulp van kleurskyfies om die eksfoliatiewe selsitologie soos aangetref op te helder. Daar word ook aangedui dat met behulp van hierdie metode kan probleme soos hormonale wanbalans, regte tyd vir paring ens. beter beoordeel word.

(iii) J. H. SNYMAN

„Die Kuddebenadering ten opsigte van Steriliteit".

Aandag word gegee aan die aspekte van monsterversameling vir laboratorium ontleding. Dr. Snyman dui op die belangrikheid hiervan en doen 'n beroep aan die Praktisyn om aandag aan hierdie probleem te gee sodat die versekering van 'n gesonde en bereidwillige samewerking gehandhaaf kan word.

Die probleme van diagnose en behandeling van vibriose in beeskuddes word ook beklemtoon.

4. Weens onvermydelike omstandighede kon dr. la Grange nie sy voordrag aangaande „Nuwere rigtings met bevriesing van bulsaad", lewer nie.

5. Vergadering word deur die Voorsitter om 4.15 nm. verdaag.

A. P. SCHUTTE
SEKRETARIS.

XVIIth WORLD VETERINARY CONGRESS: HANOVER—1963

RESOLUTIONS

The following resolutions, accepted at the XVIIth. World Veterinary Congress, Hanover, were adopted unanimously.

1. "The XVIIth World Veterinary Congress, meeting in Plenary Session, has received the special report on the progress of establishing international standards for biological products, with special reference to the recent activities of W.H.O., F.A.O., O.I.E., and I.A.M.S.

Considerable progress has been made since the previous report to the XVIth Congress, but further developments are necessary, especially in those fields relating to public health.

It is therefore resolved, that the W.H.O. Expert Committee on Biological Standardization be commended for the excellent work so far achieved, and that it continues this important activity which is essential to world animal and public health. It further commends the outstanding support of F.A.O., O.I.E. and I.A.M.S. and all laboratories and individuals, which have made this progress possible.

It is agreed that work should be continued in the development of international standards for the sera and vaccines listed at the XVIth Congress. It is also agreed that diagnostic sera and standard strains should be prepared for those diseases common to man and animals."

2. "The XVIIth World Veterinary Congress calls attention to the important contributions to a better understanding and solution of major problems of human health obtained from studies in comparative medicine, notably in the fields of cancer, cardio-vascular and other chronic degenerative diseases, and viral agents. It commends the international collaborative efforts on these problems undertaken by FA..O., I.A.M.S., O.I.E. and W,H.O., and urges continued and expanded efforts in such work."

3. "The XVIIth World Veterinary Congress recognizes the increasing importance of human and animal leukemias and recommends that all national and international agencies concerned with human and animal health intensify research in this field."

4. "As *Cysticercus bovis* (*intermis*) infection in cattle and *Taenia saginata* infection in man constitute a serious health and economic problem, the XVIIth World Veterinary Congress requests W.H.O. and F.A.O. to devote special attention to the problem and to work for:

(1) The improvement of hygienic conditions in developing countries to break the cycle of infection from animals to man and from man to animals, and that both educational and economic assistance be provided for the control of this parasite, and

(2) (in the more developed countries).

(*a*) The standardization of methods of examination of cattle for this parasite,

(*b*) Encouragement of the adoption of regulations that will prevent meat affected with either dead or living cysts being used for human consumption without previous treatment,

(*c*) Since presently used methods are inadequate, encouragement of those with responsibility for sewage disposal to require the use of methods known to be adequate for the destruction of the eggs of *Taenia saginata*. Agricultural use of sewage should be limited to properly treated sewage, and

(*d*) Encouragement of further research in the entire cysticercosis problem."

5. "The XVIIth World Veterinary Congress recommends that veterinarians should place increased emphasis on the study of animal nutrition.

6. "The XVIIth World Veterinary Congress, recognizing the usefulness and importance of the work accomplished by the O.I.E., recommends that all countries, and international organizations increase their support of O.I.E., in order to allow it better to fulfill the great task with which it is charged."

7. "Giving consideration to numerous facts presented by speakers during the XVIIth World Veterinray Congress, the Section on Professional Interest and Veterinary Education recommends that at the next World Veterinary Congress attention should be given to the problem of post-graduate study for practising veterinarians."

8. "A special section dealing with the physiology and pathology of reproduction of domestic animals seems absolutely necessary for the future Wold Veterinary Congressess."

9. "The XVIIth World Veterinary Congress, taking note of the present invasion of the Near East Region and Turkey by a Southern African Territories type of Foot-and-Mouth Disease, and also of the Panzooties of African Horse Sickness and African Swine Fever, stresses the continued threat of the spread of these and other highly infectious diseases to regions not here-to-fore infected.

The Congress urges continual vigilance against such diseases and the application in each country of all possible precautions and sanitary measures.

Further the Congress, realizing the need for emergency action on an international basis to prevent dissemination, urges that international organizations such as the International Office of Epizootics, F.A.O. and W.H.O. should establish a fund to permit immediate action to deal with such emergencies."

10. "The World Veterinary Association recognises the importance of the Pan American Veterinary Congresses and gives its moral support and encouragement to these important events."

The next (XVIIIth.) World Veterinary Congress is to be held in Paris in 1967.

The Gamgee Prize (Gold Medal) for 1963 was awarded to Sir Thomas Dalling.

A new routine for quick decisive results against PARASITIC

GASTRO-ENTERITIS

in cattle and sheep

PROMINTIC

yridine

Trade Ma

By Intraperitoneal* Injection

- High activity against gastro-intestinal worms
- Destroys both mature and immature worms
- Safe, even in animals in poor condition
- Speedily produces dramatic clinical improvement
- Easily given with no risk of local reaction

Available in 250 ml. multidose bottles.

*PROMINTIC may still be given subcutaneously by those who prefer to use it that way.

ICI

I.C.I. SOUTH AFRICA (PHARMACEUTICALS) LIMITE

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A SHORT REPORT ON THE EXHIBITS STAGES AT THE 1963 CONGRESS

RECKITT & COLMAN (AFRICA) LTD.

The premier products exhibited by Reckitt & Colman (Africa) Ltd., were the following:—

Dettol — Surgical and Instruments.
Dettol — Antiseptic Cream "212".
Codis and Disprin.

GLAXO-ALLENBURYS

Glaxo-Allenburys displayed the following products, all of which are available to the Veterinary Profession only: Betsolan Injection, Canilep and Biotexin Cerate.

Betsolan (betamethasone) is forty times more active than cortisone and is particularly useful in the treatment of acetonaemia due to its pronounced ability to promote glucogenesis following injection. It markedly increases blood glucose levels in cattle and maintains glucogenic effect for a longer period than other corticosteroids. This response is obtained at a dosage of 1/10th to 1/5th of that of prednisolone.

Betsolan Injection is also particularly useful in small animal practice for the treatment of intense summer eczemas and neurodermatoses and in countering stress during severe illness, trauma and surgical interference.

Canilep: The first available combined vaccine for immunising against canine distemper, canine virus hepatitis and the two types of canine leptospirosis. Vaccination against these four diseases is carried out with only two injections.

Biotexin Cerate: Each tube contains 0.25 gm. novobiocin which is bactericidal against gram-positive and some gram-negative organisms. It is particularly useful for staphylococcal mastitis and it is intended for problem cases failing to respond to other antibiotics.

OPTICAL INSTRUMENTS (PTY) LTD

OPTICAL INSTRUMENTS (pty.) LTD. again created a memorable impression with their very representative exhibit of optical and scientific instruments. Interest was aroused by the new CARL ZEISS Fluorescence Microscope, allowing for a combination of phase-contrast and fluorescence microscopy with one condenser and with one instrument.

Besides, we were able to view their wellknown fully automatic Photomicroscope and Research and Students Models. Of particular interest were the new SARTORIUS balances, precision as well as the analytical type.

How to make microtome-knife sharpening easy was demonstrated by means of a new Automatic Knife Sharpener by Messrs. ELLIOTTS LIVERPOOL Limited, manufaeturers of the popular Tissue Processor. Their stand was rounded off with METROHM pH-meters, centrifuges, Ultra-Thermostats and other useful Laboratory Accessories.

B. L. PHARMACEUTICALS (PTY) LTD,

Subsidiary of Bristol Laboratories International Corp.:, New York.

Bristol Laboratories, one of the leaders in the field of antibiotic research, proudly presented for the first time in the Veterinary field, their range of semi-synthetic penicillins.

BENDRALAN: (Potassium Phenethicillin) The original oral synthetic penicillin. Tablets 125mg. 12's 50's 100's Tablets 250 mg. 12's 50's 100 s Syrup 125 mg./5ml.: 60 ml.	Infections of the skin, soft tissue or due to trauma, Genito-urinary infections, Respiratory infections Miscellaneous infections — bacteremia, Septicemia, gingivitis stomatitis etc.
PROSTAPHLIN: (Sodium Oxacillin) The oral "Staph-cidal" penicilin Capsules 250mg. 30's & 100's Vials 250 mg.	Oral therapy in cases of infections due to penicillin G-resistant staphylococcus aureus.
PENTREX: (Ampicillin) The first synthetic broad-spectrum penicillin Capsules 250 mg. 12's & 100's	Respiratory tract infections, Urinary tract infections, Gastro-intestinal infections caused by pathogens sensitive to the drug.
PROSTAPHLIN-A: (Sodium Cloxacillin) Oral penicillin for infections due to pyogenic cocci Capsules 250 mg. 12's 50's and 100's	Infections due to Streptococcus haemolyticus, Diplococcus pneumoniae and Staphylococcus areus including all infections due to staphylococcal strains resistant to penicillin G or other antibiotics

For further information on the Bristol range of antibiotics please write to:—

Professional Service Department,

P.O. Box 2515, Johannesburg.

Byrroughs Wellcome & Co. (S.A.) Lyd.

Burroughs Wellcome & Co. (S.A.) Ltd. exhibited the following products at the Veterinary Congress.

'Sporin' Group:

This group contains antibiotics which are recommended for topical application and are very rarely, if at all, used systemically. The range includes:—

'Neosprin' Brand Antibiotic Ophthalmic Solution (Sterile) to guard eyes meticulously against bacterial infection.

'Neosporin' Brand Antibiotic Ointment provides one ointment for all topical bacterial infections.

'Otosporin' Brand drops produce rapid relief in a cute and chronic otitis externa, chronic otitis media with otorrhoea and in the management of cavities after mastoidectomy.

'Cortisporin' Brand ointment is indicated in the treatment of inflamed and infected skin conditions, wounds and burns and bacterail infections of the superficial structure of the eye.

'Neosporin' Brand Antibiotic Powder for the treatment and prophylaxis of mixed bacterial surface infections where the use of a powder is of particular advantage.

'Neosporin' Brand Aerosol to combat superficial infections of the skin due to susceptible organisms in association with biopsy sites, ulcers, burns, abrasions, cuts, lacerations, infected eczemas, etc.

'Epivax' Vaccines:

'Epivax'

'Epivax' Plus

'Epivax-double-plus'

For protection against distemper (including hard-pad disease), contagious hepatitis, canicola disease and leptospiral jaundice.

'Ancaris': For Hookworm and Roundworm in dogs. Safe for all dogs, even for unwaened puppies. A single day's treatment is sufficient to clear the worm burden.

Parke — Davis (Laboratories Pty) Ltd.

Parke, Davis exhibited a wide range of their preparations with veterinary applications.

Understandably, the broad-spectum antibiotic Chloromycetin was prominently featured in its many product forms which included Chloromycetin Tincture 10 per cent (Veterinary) for the treatment of foor-rot as well as foul of the foot, orf, calf diphtheria, wounds in dogs and cats etc. Chloromycetin Succinate a new parenteral form of Chloromycetin, Chloromycetin Hydrocortisone Ophthalmic Ointment and Chloromycetin kapseals 250MG. were some of the other Chloromycin products.

Abidec drops for vitamin deficiencies in small animals, Epanutin kapseals for hysteria and convulsions, Benadryl Parenteral for bloat, Midicel, a long acting sulphonamide, and Norlutin-A a potent oral progestational agent, were also displayed at the Parke, Davis stand.

Maybaker (S.A. (Pty) Lyd.

The Maybaker (S.A.) (Pty) Ltd. stand featured a number of M&B brand professional user only veterinary specialities against the background of the M&B organisation's Research Institute at Dagenham. This impressive group of modern buildings houses the latest in research facilities, and its functions include the co-ordination of the world-wide research activities of May & Baker Ltd.

Veterinarian user products highlighted were the comprehensive M&B range of phenothiazine derivatives. 'Largactil', the standard by which all other such derivatives are compared; 'Vallergan', unique because of its very potent antihistamine property; 'Myspamol' the latest of the trio, a spasmolytic of marked value in equine colic and urolithiasis of cattle, rams, cats and dogs.

'Strypen' Injection in 90 ml. bottles and 'Vesadin' 33⅓ per cent solution, two preparations supplied direct only to the Veterinarian at highly economical rates, were featured.

The value of 'Rovamycin' a narrow spectrum intramammary antibiotic with important application in cases of bovine mastitis due to Staphylococcus aureus, was stressed. As with all the foregoing the value of 'Rovamycin' is enhanced since it cannot be used indiscriminately by the layman.

Once again Maybaker (S.A.) (Pty) Ltd. had the pleasure of sponsoring a fund raising effort for the S.A.V.M.A. Benevolent Fund and in return for various novelties the sum of R75.97 was donated.

Fisons Chemicals

The following products were exhibited for Fisons Chemicals (S.A.) (Pty) Ltd:

Imposil 200

This potent, intramuscular iron supplement by Benger is the latest advance in the treatment of iron deficiency in piglets and other animals. Imposil 200 contains 200 mg. of iron in every 2 ml. dose. One injection now protects the piglet against iron deficiency and subsequent anaemia well beyond the commencement of iron-rich creep feeding.

To-day iron deficiency in piglets is recognised as a world problem and a source of great economic loss to the farming industry. Its effects — in causing widespread death in suckling pigs, retarded growth, reducing vitality and increasing susceptibility to disease have been widely noted and studied.

Administered on the third day of life, Imposil 200 affords maximum protection against iron deficiency and cuts litter mortality resulting from it.

Imposil 200 is the world's leading iron injection for piglets and is backed by an impressive amount of field research.

CANINE DISTEMPER VACCINE 'CONNAUGHT'

This is a dried attenuated live virus vaccine of chick embryo origin for the prevention of distemper of dogs.

CANINE DISTEMPER HEPATITIS VACCINE 'CONNAUGHT'

This is a dried combined attenuated live virus vaccine for the prevention of distemper and infectious hepatitis of dogs. The canine distemper virus is of chick embryo origin and the infectious hepatitis virus of ferret tissue culture origin.

BRITISH DRUG HOUSES (S.A.) (PTY) LTD

The main feature of the B.D.H. South Africa (Pty) Ltd., stand was PARENTROVITE a very high potency vitamin B with C injection. This is available in either intravenous or intramuscular form. Given in massive doses like this it is extremely useful in combating any acute toxicity associated with biliary fever, hepatitis, distemper and is invaluable in combating post-operative shock and in cases of poisoning.

It has been used for general debility in geriatrics and in toxic conditions one normally finds with pyometra in bitches with good results.

Also featured was a new preparation of BIOTIN (Vitamin H) which is now in isotonic solution strength of 100 mcg/ml. thus now making its usefulness in millary eczema in cats painless.

The remainder of the stand displayed the full range of B.D.H. hormones and antibiotics available from Dista Products Limited.

WILD OF SOUTH AFRICA (PTY) LTD

The main features of the Exhibit by Wild of South Africa (Pty) Ltd., were:—

MICROSCOPES

Research M20 with instant Polaroid film attachments.

New type of Drawing attachment, discussion tubes of 2 observers.

Screen projection attachment.

Field and Laboratory microscope Mil with various accessories and dust proof steel hoods.

Research Stereomicroscope M5 with new Drawing attachment and various accessories.

MILBORROW AND CO. (PTY) LTD.

The main features of the Exhibit by Milborrow and Co. (Pty) Limited were:—

1. A complete range of low toxicity Fenchlorphos pet insecticide products, and
2. Iodet — a self-indicating Iodophor Germicide.

Protea Laboratory Services:

The main features of the exhibits by Protea Laboratory Services this year were Reichert Microscopes, Mettler Balances, Surgical Instruments, Brandt Volumetric Glassware and South African manufactured Laboratory Equipment.

Boston Laboratories (pty) ltd.

In addition to their well established lines "Distex" Gamma Globulin and "Alcanex" Serum Albumin, Boston Laboratories featured two new revolutionary concepts in the sterilisation of instruments and syringes.

Their Boslab Sterilising Fluid is a volatile chemical which, in the presence of water vapour in a closed container, will sterilise without heat or electricity all forms of sporing and vegetative pathogenic organisms. The many possible advantages to busy practitioners of Boslab Sterilising Fluid were demonstrated in conjunction with Bosta-Kit, a light-weight portable plastic steriliser capable of carrying a useful array of instruments and syringes.

Simplicity and economy are the keynotes of this sterilising technique wich evoked considerable interest.

Exemex, Aurex, Balmex and Euthanex were also on display.

I.C.I. South Africa (Pharmaceuticals) Lyd.

I.C.I. South Africa (Pharmaceuticals) Ltd., exhibited the following products at Congress.

"*Dispolac*" *P.* An intramammary Cream containing 100,000 units Procaine Penicillin G in a specially formulated base for complete dispersion

"*Dispolac*" *P.S.* An intramammary Cream containing 100,000 units Procaine Penicillin G., plus 100,000 units Dihydrostreptomycin Sulphate in a dispersible base, similar to "Dispolac" P.

ICI Udder Wash (Superconcentrate): This Udder Wash contains "Hibitane", bactericide and bacteriostatic agent, which will be active against all bacteria encountered in the dairy stable. A dispensing pump supplied free of charge, was also displayed. This pump, which is screwed on to the container of I.C.I. Udder Wash, delivers a measured volume of the Udder Wash. This ensures accuracy and economy in use. ICI Udder Wash is non-detergent.

"*Mintic*" and "*Promintic*" (Methyridine) Oral and Injectable Anthelmintic respectively, for sheep, goats and cattle. "Mintic" and "Promintic" are active against all nematodes, both mature and immature, in all stages of development. Also active against lungworm and immature conical fluke. The "Mintic" Drenching Kit, recently available in South Africa, was displayed. This dosing gun, which is adjustable to deliver required dosages of "Mintic" for sheep, can be easily attached to the $\frac{1}{2}$ gallon "Mintic" container.

"*Sulphamezathine*" 33$\frac{1}{3}$ per cent 2 litre pack, was exhibited. This is distrinctively coloured and available only to veterinarians.

A. S. Ruffel (Pty) Ltd.

A. S. Ruffel (Pty) Ltd., had the following preparations on view at their Congress stand.

Staphoral-Veterinary:

A vaccine for the prevention of Staphylococcal mastitis in dairy cows. Staphoral-Vet contains surface and somatic antigens, A and B toxoids and leucocidin. Is stable for 3 years in the dry form, and once made up in solution is stable for 21 days. Staphoral-Vet contains strains of South African staphylocci, which have been collected over a number of years. This is the first vaccine to be given by nasal instillation, which method has proved very satisfactory.

Cujec: Non irritating form of copper suitable for injection. Causes no irritation at injection site and is well tolerated. Can be used as a treatment and prophylaxis measure.

Acetylpromazine: An entirely new phenothiazine derivative, possessing anti-emetic, anti-convulsant, hypotensive, antispasmodic and analgesic properties. It also potentiates the effect of the barbiturates.

SKF Laboratories (Pty) Ltd.

SKF Laboratories had the following preparations on view at their stand.

1. Nefuran: The new, stable, rapidly excreted intra-mammary ointment, containing the potent anti-bacterial nitrofurans, Furazolidone and Nitrofurazone.

Indications — Nefuran is indicated in the treatment of streptococcal, staphyloccal and coliform mastitis, including cases resistant to antibiotics.

Presentation — Packs of 12 single dose tubes.

2. Furadantin Tablets: The nitrofuran specifically for urinary tract infections. Effective, safe, rapid, no resitance problems.

3. Furacin Soluble Ointment: containing Nitrofurazone for the prevention or treatment of bacterial infections of wounds, burns, exzema, etc.

S.A. Cyanamid (Pty) Ltd.

This exhibit was based on Cyanamid's new and rapidly increasing range of veterinary ethical products which are supplied to registered veterinarians only.

Highlighted amongst these products were their very successful Bassovac and Cabvac canine Distemper and Distemper/Hepatitis vaccines, which rae attractively presented, complete with sterile disposable syringes with every dose.

In addition to the Aureomycin range of capsules, oblets, soluble powder and injectable suspension, the latest Aureomycin/Violet Aerosol Spray aroused great interest. This product has an extremely wide application which includes wounds, abrasions and foot rot.

Products such as D.N.P. parenteral treatment for Hook worm in Dogs, Pigdex 100 injectable iron, STAPHYLOCOCCUS AUREUS TOXOID, TARGOT MASTITIS OINTMENT and VARIZYME STREPTOKINASE — HUMAN PLASMINOGEN STREPTODORNASE in spite of being very much known to the Veterinary Profession invited interesting comments from practising Veterinarians.

Cyanamid's newest addition was the veterinary counterpart of their well known human triamcinolone preparation ARISTOVET. This corticosteroid is available in PARENTERAL and TABLET forms. Due to the extreme potency of this product, the resultant low dosage level does not produce the usual sodium retaining or oedema side effects of other cortisone-like compounds.

WINTHROP LABORATORIES (S.A.) (PTY) LTD.

The following preparations were on view at Congress at the Winthrop Laboratories Stand:

PHISOLEX — antibacterial.

ZEPHIRAN — antiseptic.

TRANCOPAL — tranquilizer.

WINSTROL — anabolic.

CHAS. F. THACKRAY (S.A.) (PTY) LTD.

Chas. F. Thackray (S.A. (Pty) Ltd., displayed the following items of equipment at the S.A.V.M.A. Congress, Onderstepoort.

Memmert Laboratory Ovens, Incubators and Water Baths.

Beck-Kassel Microscopes.

S.E.S. Instrument Sterilisers.

Wisconsin Portable Electric and Non-Electric Autoclaves.

Atlas Nylon Syringes.

Davis & Geck Sutures.

In addition to the above, were displayed "THACKRAY" Surgical Instruments, including the Browne's Special Bone drill, for use on small animals, which created considerable interest.

MSD (PTY) LTD.

This company displayed two drugs at the recent Veterinary Medical Association's Congress. These drugs are AMPROL, a very effective coccidiostat used for the control of all important species of coccidio in both fowls and turkeys. It is unique in it's action of replacing the thiamine requirements of the coccidia without any effect on the thiamine requirements of the host at the prescribed level.

The second drug was THIBENZOLE, a very safe and highly effective anthelmintic for the control of all important gastro-intestinal nematodes.

PFIZER LABORATORIES S.A. (PTY) LTD

Pfizer Laboratories this year featured four specific products, backed up by the whole of the well-known Pfizer range. Of these four products, Terra-Cortril Spray in a neat aerosal can and Delta-Cortril I/M are items sold only to the Veterinarians. The other two were Eftolon, Pfizer's new long-acting concentrated Sulphonamide, and Demadeth, which contains an organic phosphate, and is the latest treatment for demodectic, sarcoptic and psoroptic mange.

LIBAGRIC (PTY) LTD.

In addition to the large number of standard text books on Veterinary Science and Agriculture, Libragric (Pty) Ltd., also displayed several new titles of interest to veterinarians, such as "Equine Medicine and Surgery" (American Veterinary Publications), "Coccodiosis" (Davis), "The Calf in Health and Disease" (Henning), "The Behaviour of Animals" (Hafez), and "Lameness in Horses" (O.R. Adams).

Amongst the new and enlarged editions of wellknown old titles we observed the second edition of "Veterinary Medicine" (Blood and Henderson), and of "Diseases of Cattle" (American Veterinary Publications), and the third edition of "Veterinary Protozoology" (Richardson & Kendall).

VETERINARY ANTHELMINTIC MEDICATION

by T. E. GIBSON, D.V.Sc., F.R.C.V.S.

Technical Communication No. 33 of the Commonwealth Bureau of Helminthology, first published in December 1962.

"This concise, well written little book is one of those rare publications which would be an asset to any veterinarian's bookshelf" — J.S. Afr. vet. med. Ass., 34(2), p. 296.

It contains an up to date review of the literature with a comprehensive index of drugs in use and tables on suggested therapy. It is also a ready reference book to the most reliable treatment at present available for the elimination of worms from domestic animals.

Demy 8vo. Linson cover. 172 pp. ($5.25) 35s.0d. (British Price).

THE WATAFRICA MANUFACTURING CO. (PTY) LTD.

The following products were exhibited by Corn States Laboratories:—

Ambex..... Specifically indicated as an aid in the supportive treatment of debilitation in animals. Prompt, pure amino acid replacement. Vials 250 cc and 500 cc.

Brevane..... Methohexital sodium, an ultrashort-acting anaesthetic giving 5 to 8 minutes of surgical relaxation. Vials 500 mg. and 2.5 gm.

Calmor..... High calcium formula balanced with magnesium and phosphorus for the emergency treatment of milk fever, ketosis and grass tetany. Plastic bottles 900cc.

Dizan Suspension.. For use in removal of large roundworms, strongylus, stomach worms and pin worms in the equine species. Each cc contains 69 mg. Dithiazanine iodide and 83 mg. of Piperazine base (as piperazine citrate). 600 cc bottles.

Histase lotion.... For managing moist dermatitis, allergy, sunburn insect bites, rashes, ecxemas and abrasion. Topical application. Plastic squeeze bottle of 75cc.

Kerastat eye powder For treatment of infectious keratitis, conjunctivitis and as topical dressing for wounds and moist ecxema. Plastic puffer bottle 20 gm.

Negastat..... For rapid stopping of capillary bleeding. Is also bactericidal, fungicidal and protozoacidal. 4 oz. plastic bottles.

Tylocine I.M..... Latest antibiotic in veterinary field. Essentially gram-positive. Effective against swine and avian PPLO, spirochetes, Leptospira, sinusitis of turkeys, Hemophilus pertussis and several internal parasites. Very effective in management of respiratory infections in small animals. 30 cc and 100 cc vials 50 mg. and 200 mg. per cc.

Corn States Veterinary Products are available exclusively to the Veterinary profes ion and are obtainable from The Watafrica Manufacturing Co. (Pty.) Ltd., P.O. Box 489, Springs.

BOOK REVIEW

ALLGEMEINE PATHOLOGIE FUR TIERARZTE, BY WALTER FREI, WITH CONTRIBUTIONS BY PROF. DR. J. DOBBERSTEIN, PROF. DR. D. MATTHIAS, PROF. DR. S. RUBARTH, PROF. DR. G. PALLASKE AND PROF. DR. H. STUNZI. Fifth Edition.

This newly revised edition of an already well-known textbook of general pathology is a wellcome and commendable contribution to the veterinary profession. It does not only serve as a fundamental and dependable guide to students, but certainly also represents a valuable source of knowledge and information to the practising veterinarian, the officer engaged in public health and the biologist.

This book will first and foremost be appreciated by the student because it presents to him the important basic pathological anatomical changes, not as individual, unrelated phenomena, but in the appropriate context of cause and effect and of body processes of defence and reaction in response to certain stimuli. This is facilitated by the presentation of a concise but nevertheless representative section on the general principles of etiology, followed by the pathological anatomical changes proper. Particularly enlightening is the discussion of the reactions of the body against micro-organisms.

In addition the student is always in need of adequate and clear definitions of terms and concepts in pathology. In this textbook the student has at his disposal clear, simple descritions of such terms. Without sacrifice of adequateness and proper relationship to the general context, accurate, concise definitions of terms in general use are given.

The last section of the book deals with the pathological physiology of the different organ systems. An attentive study of this section will illustrate to the student the vital importance of correlating the disturbed physiology of organs and systems with the detectable pathological changes.

This textbook is the result of combined efforts of authorities from three European countries. This team work has served to bring together in a concise and clear manner the results of some of the phenomenal advances made in the biological field in general and in medico-veterinary research in particular. The various contributors have, in spite of their individual efforts, succeeded in preserving a common line of thought and have thus maintained the structural unity of the book.

This work can be recommended without hesitation to students of pathology and related subjects.

J.D.S.

TUFRESSON, G. LOCAL ANAESTHESIA IN VETERINARY MEDICINE (1963) pp. 48, NUMEROUS FIGS. ASTRA INTERNATIONAL, SODESTALGE, SWEDEN. PRICE NOT STATED.

The author states in the foreword that his aim is to present a concise and clearly arranged manual on the usual types of local anaesthesia.

It can be stated without reserve that he has very successfully achieved this aim. Lavish use has been made of illustrations, many of which are in colour. The result is that the booklet has clarity even while the text is brief.

It is therefore ideally suited to the busy practitioner who wishes to brush up a few finer points.

The typographical standard is high and ensures that the book is a pleasure to handle.

C.F.B.H.

VETERINARY MEDICINE (Second Edition) pp. XIII + 1224
D. C. BLOOD AND J. A. HENDERSON

Bailliere Tindall & Cox 90s.

The appearance of a second edition within three years of the first publication of this book gives an indication of the need and demand for a comprehensive text book on large animal medicine. "Blood and Henderson" has adequately fulfilled this need and has already become a classic in veterinary literature which will henceforth be found on the shelves of veterinary students and practitioners all over the world.

Two chapters on helminth parasites and diseases caused by arthropod parasites have been included in the new edition. Additions to the text and bibliography have been made to all the chapters and some sections, particularly those on abomasal displacement, a typical interstitial pneumonia, lymphomatosis and facial exzema have been rewritten. Sections on African horsesickness, enteric colibacillosis of pigs, infectious bovine meningo-encephalitis, bovine papular stomatitis, swamp cancer and necrotic glossitis have been added.

The form of the book remains unchanged but these additions have contributed much to the improvement of an already excellent handbook written by veterinarians with practical experience and a wide knowledge of veterinary medicine.

This 1,200 page handbook is well printed and bound, is reasonably priced and can be highly recommended to those requiring an authoratative text on farm animal medicine.

K. v.d. W.

BOOK NEWS

Parts 1 and 2 of **Regional and Applied Anatomy of Domestic Animals** by J. A. Taylor have proved so popular with veterinarians and students; that we have had many requests for parts 3 and 4. We, however, regret to advise that the publishers are not yet in a position to give dates of publication of these volumes.

The 1963 edition (5th. issue) of **The Veterinary Annual** by W. Pool will be ready in January, 1964. A few copies of previous issues are still available.

Price R4.80

Besides the usual wide range of agricultural and veterinary books we can now also supply: **Wild Flowers of the Transvaal;** Cynthia Letty. R8-00. **Snakes of Southern Africa;** V. Fitzsimons. R15-00. **Strike** S. Schoeman's popular handbook of Angling. R3-90. **An Introduction to Animal Husbandry in the Tropics;** Williamson & Payne. R5-50. **Farm Animals in Health & Disease;** W. R. Wooldridge. R3.30. **Veterinary Anthelmintic Medication;** T. E. Gibson. R3-75.

LIBAGRIC (PTY.) LTD.,

P.O. BOX 15,

PRETORIA.

What broad-spectrum antibiotics do for bacterial infections:

THIBENZOLE™

(THIABENDAZOLE)

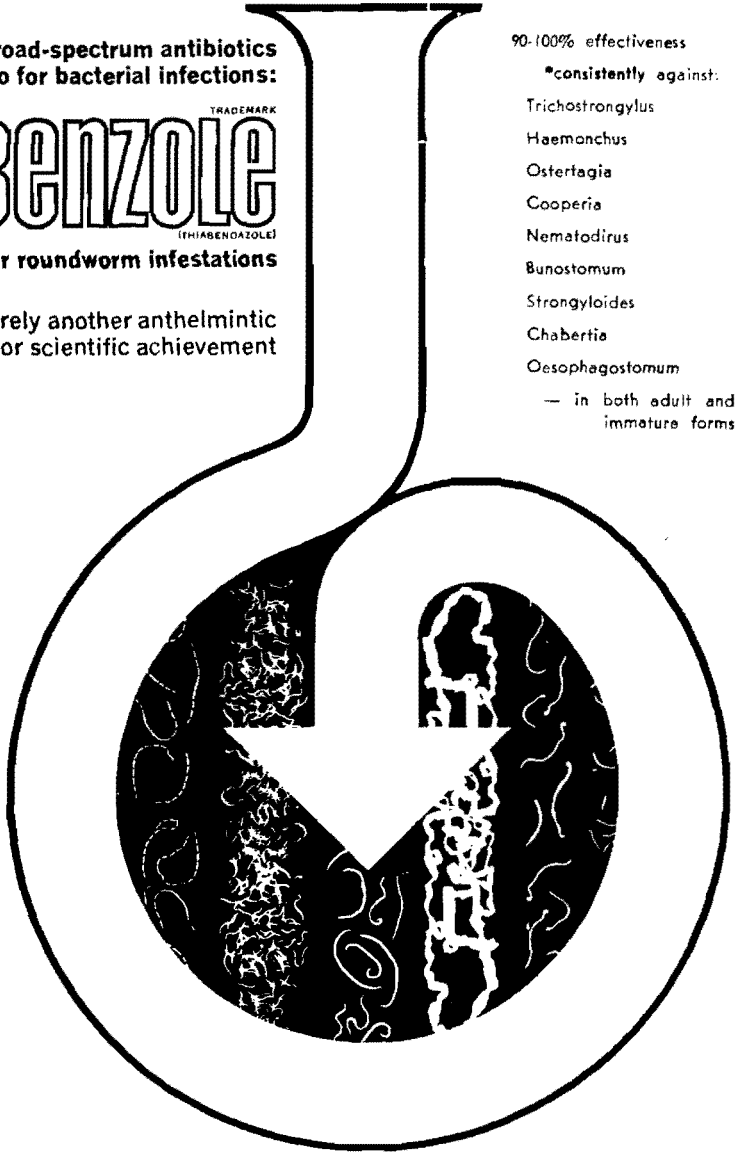
...does for roundworm infestations

not merely another anthelmintic
but a major scientific achievement

90-100% effectiveness
***consistently** against:

Trichostrongylus
Haemonchus
Ostertagia
Cooperia
Nematodirus
Bunostomum
Strongyloides
Chabertia
Oesophagostomum

— in both adult and immature forms



☐ significant advantages over phenothiazine in: weight and wool gains* ... survival rate* ... earlier marketing dates* ☐ extensive experience with **sheep, goats, cattle** and **horses,** under the most diverse climatic and epizootic conditions encountered on 5 continents ☐ proved nontoxic at 20 times the recommended dosage in sheep and 10 times in goats ☐ does not stain wool, hides, hands or clothing ☐ **palatable**; fully effective without need for prior deprivation of either feed or water.

* Reprints of published articles and other pertinent data concerning THIBENZOLE available on request.

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LETTERS TO THE EDITOR

Being an expression of views by contributors to promote the dissemination of information and to seek the opinion of others.

The Editor,

J.S. Afr. vet. med. Ass.

Dear Editor,

IMMUNITY FROM FRESHLY USED FORMOL-KILLED *Salmonella dublin* VACCINE

The increasing demand for calf-paratyphoid vaccine necessitates wider knowledge of some of its immunological properties.

The injudicious administration of the standard calfparatyphoid vaccine leads to divergent results.

Administration of the formol-killed vaccine at the most susceptible age, i.e. 3–12 weeks, will not necessarily result in the stimulation of an optimum response; neither will a passive immunity, acquired by maternal immunization, protect the calf for the full term.

The very young calf is subjected to immunological tolerance, and no immunity is obtained when vaccinated under the age of 3 weeks. Even when vaccinated at the age of 4 weeks, an immune response of only 25 per cent can be expected. The immune response improves with the age of the calf, and the maximum peak is reached when vaccination takes place between 8–10 weeks of age.

Maternal vaccination on the other hand, will give a sound passive immunity only to the very young calf. This colostrum transmitted immunity declines rapidly from the 4th week after birth to be completely absent at the age of 8 weeks, thus rendering the calf fully susceptible again.

As a result of these conflicting immune reactions which are determined by the age of the calf, the vaccines are often insufficiently appreciated. The users either decline any further use of the vaccine or demand a preparation of a special vaccine from the specific strain encountered, as a means of obtaining better results. Although various reasons could be advanced as an explanation for this higher immunological value, it has been experimentally proved that the only difference between such a specially prepared vaccine and the standard one has been freshness. Fresh vaccine should give equally good results.

Prolonged storage, sometimes under adverse conditions, of a formol-killed vaccine, causes a gradual neutralisation of the O-antigen with subsequent diminishing agglutinin stimulating qualities.

In order to obtain optimum results from Calf-paratyphoid vaccine, the following major points should be borne in mind:

1. Vaccination of the pregnant cow will give a passive immunity to the calf, provided it ingests a sufficient amount of colostrum, to see it safely through the danger period of immunological tolerance.

To ensure optimal protection, such a calf should then again be vaccinated with the calf vaccine at the age of 4–6 weeks, followed by a second administration, 14 days later.

2. Calves from non-vaccinated cows should be vaccinated at the age of 3–4 weeks, and not before, followed by a second injection 14 days later.

3. The vaccines should be used immediately. Prolonged storage even under ideal conditions, will invariably result in gradual deterioration of immune producing properties of this formol-killed vaccines.

H. J. W. Botes.
Onderstepoort.

The Editor,

Dear Sir,

Findings with Copper and Manganese Supplementation on a Thoroughbred Stud in the Kimberley District

An analysis of the grazing on Mauritzfontein revealed that all the grass samples and many of the bush samples contained less than the accepted minima of 8 p.p.m. copper and 100 p.p.m. manganese. It was therefore decided to test the effects of supplementation with these minerals.

As a preliminary test, one horse was given 0.5 g. copper sulphate per day for one month followed by 1.0 g. per day for two months and 5 g. per day for a further three months. No signs of poisoning occurred and it was concluded that a daily supplement of 0.5 g. would be safe.

The supplement given was 0.5 g. copper sulphate (approx. 125 mg. Cu) and 2 g. manganese sulphate (approx. 700 mg. Mn). These figures are both considerably above the accepted minimal daily requirements but they were adopted in view of the suspected interference with the trace elements concerned by the high calcium and iron content of the grazing and the alkalinity of the soil and drinking water.

This supplementation has now been practised for three seasons with considerable apparent benefit. The average percentage of mares in foal over the eight years prior to supplementation was 64 per cent. In the last three seasons this has risen to 86 per cent. The proportion of abnormally short or long oestrus periods has diminished as has that of anovulatory cycles. More mares have come into foal with fewer services.

It is more difficult to assess the effects of the treatment on the young stock as concurrent improvements in the rest of the diet were introduced. There is, however, a definite improvement in the amount and feel of the

bones of the limbs and in the conformation of the joints. Splints ear now very rare and when they do occur they can usually be ascribed to kicks or knocks as indicated by skin abrasions. It would also appear that the two-year olds, now in training and which were the first to receive the supplement, are taking better to their work.

Supplementation is difficult in foals from three to six months of age. The foal is born with sufficient copper stored in the liver for the first three months of life. After this period and until it is taking in a full diet, the animal has to rely mainly on the low copper content of the milk. A batch of foals of this age was treated with an injectable copper preparation* but without appreciable benefit. This lack of response may have been due to an increased copper content in the milk of the supplemented dams.

The object of this communication is to bring to the notice of the profession the beneficial effects of copper and manganese supplementation, at least under our conditions. It is hoped to carry out controlled experiments at a future date.

* "Coprin", Glazo-Allenbury.

T. Toms.
Mauritzfontein Stud.
P.O. Box 354,
Kimberley.

The Editor,

J.S. Afr. vet. med. Ass.

Dear Editor,

Rupture of the uterus during calving

The veterinarian in rural practice often encounters torn uteri in cows due to lay interference, as he is mostly called in only after everybody from the blacksmith to the stable boy have had a bash at removing a malpresented calf.

I would, however, like to record three cases of rupture of the uterus, where no traction had been applied or lay interference had taken place.

Case 1 A stud Africander cow with her third calf.

The owner had noticed that the cow was not progressing and as nothing was presented that he could pull on, he called me in immediately. The uterus had been torn on the right lateral surface involving the horn and body. The head and one foot had penetrated and were lying in the abdominal cavity. I corrected the malpresentation and delivered a live calf. The tear in the uterus was repaired by performing a laporotomy in the right flank under paravertibral block. The uterus was sutured with a double row of Lember — Zerny sutures using No. 4 catgut. The cow recovered and has calved subsequently.

CASE 2. AFRICANDER GRADE COW.

I was again called to assist as the cow obviously could not calve and nothing was protruding which the owner could pull on.

The uterus was torn on the right lateral surface in the body only up to, but not including, the cervix. The head and the left foot were again in the abdomen. The malpresentation was again corrected and the calf delivered. The owner did not want me to performa laporotomy as the cow was not valuable. I endeavored to repair the tear through the vagina. This cow had a retained afterbirth and died. No P.Pm made.

CASE 3. FRIESLAND TYPE COW.

The same picture as the previous two; lateral deviation of the head — head and one foot in the abdomen. Calf delivered. Placenta removed. The owner, a bantu, did not wish me to perform a laporotomy. I advised slaughter but took the trouble to put 5 grams Streptomycin and 6 mil. units penicillin in the uterus and through the tear. The owner did not slaughter and the cow made an uneventful recovery. I hope to be able to examine her in the near future.

G. J. H. Stevens
Kroonstad.

THE Editor,

J. S. Afr. vetl med. Ass.

Dear Editor,

A METHOD OF DISSECTION TO EXPOSE A VEIN IN CATS AND DOGS

Often those patients which most urgently require blood or fluid infusions are so dehydrated or collapsed that a vein cannot be located percutaneously. A method to expose a vein is described with a note on intraventricular administration of blood in three cases of extreme anaemia.

In a limited survey of literature on human surgery it appeared that the accepted method is to make the skin incision transversly to the course of the vein.

Due to the toughness of the skin in cats and dogs and the closeness of the veins of the legs to the skin, it is safer to make the incision parallel to the vessel.

The preferred sites for finding a suitable vein in which a needle can easily be retainde are:

1. V. cephalica two-thirds up the forearm.
2. V. jugularis at the middle of the neck.
3. V. saphena at the middle of the tibia.

The method is as follows:

1. V. Cephalica and Saphena

The vein is compressed by an assistant in the usual way. Manipulating the foot helps to fill the vein. The hand is placed around the leg with the anticipated position of the vein between the thumbs and forefinger. The skin is tensed and incised longitudinally for 1–2 cm by pushing a scapel blade along the course of the vessel with the back of the blade against the skin. The cut is deepened until the vein prolapses through the incision.

A 2.5 cm short bevel needle is jabbed into this bleb, the tension on the skin relaxed and the needle gently slid up the vein. The drip is attached and strapped to the leg with elastic adhesive plaster.

2. V. Jugularis

Thumb pressure at the supraclavicular fossa will distend the vein. The skin cut is made as already described. A suture is passed through the skin at the cranial commisure of the incision. The subcutis is split with a Halsteads forceps until the vein is located and gripped lightly in the jaws of the forceps to raise it to the level of the skin. The needle is inserted towards the head for its full length. The suture is tied into the groove around the boss of the needle and the drip attached.

After the needle is withdrawn, the plaster is left around the leg for 24 hours to seal the cut. If the jugularis leaks, one or two stitches in the skin over a section of gelatin sponge is sufficient to control the haemorrhage.

Prior to using this dissection, three emergency cases were given blood transfusions into the left ventricle through the chest wall. One adult dog and one pup of 5 weeks with babesiosis (*B. canis*) made excellent recoveries. One 3 day old pup that had bled out after a bad docking died when the blood was injected into the heart muscle and pericardium.

P. H. le Roux,
Hermitage Terrace,
Richmond,
Johannesburg.

UNIVERSITEIT VAN PRETORIA

KENNISGEWING

COOPER EN NEPHEWS-BEURS: 1964

Aansoeke om bogenoemde beurs word tans ontvang.
Besonderhede in verband met die beurs is soos volg:

1. *Grootte van beurs*: R400.

2. *Doel van beurs.*—Om jong veeartse in die geleentheid te stel om verdere ondervinding en kennis op te doen.

3. *Wie vir die beurs kwalifiseer.*—Studente wat gespesialiseerde studie te Onderstepoort of *verkieslik* oorsee aan 'n goedgekeurde inrigting begin binne 7 jaar na behaling van die eerste graad. Die tydperk van studie moet ten minste 9 maande duur.

4. 'n Kandidaat wat 'n Cooper en Nephewsbeurs ontvang het moet bereid wees om na voltooiing van sy studies ten minste 2 jaar in Afrika te woon en sy professie te beoefen.

5. Die aansoeke moet die volgende besonderhede in verband met die applikant weergee en moet my nie later nie as 15 *Januarie* 1964 bereik:

(*a*) Naam en adres.
(*b*) Datum en plek van geboorte.
(*c*) Huwelikstatus.
(*d*) Datum waarop B.V.Sc.-graad toegeken is.
(*e*) Huidige betrekking.
(*f*) Finansiële posisie.
(*g*) Volle besonderhede in verband met die voorgenome studie met vermelding van die instansie waar studie voortgesit sal word.

Martin Smuts.
Registrateur.

INTIMATION BY THE CHIEF DIVISION OF VETERINARY FIELD SERVICES

VACCINATION OF CATS AGAINST RABIES

The Chief of the Veterinary Research Institute at Onderstepoort has recommended that the vaccintaion of cats with L.E.P. Flury strain Rabies vaccine be accepted.

It is advised that half the dose as recommended for dogs should be used for the vaccination of cats.

Vaccinated cats may be imported into the Republic of South Africa quarantine-free, provided they were vaccinated at least 6 months but not longer than 12 months before introduction.

The Rabies inoculation certificate should be forwarded with the application for the Veterinary Import Permit.

M. C. LAMBRECHTS

INFORMATION FROM: THE BRITISH SMALL ANIMAL VETERINARY ASSOCIATION

116 Abbey Road, Westbury-on-Trym, BRISTOL, U.K.

The Vice-Chairman of the Conference Committee advises as follows:—

The Conference Committee have been made aware that many Overseas Members receive notification of the date of the Annual Conference at a time that is too late for them to make arrangements to attend.

I am therefore writing to inform you that the next Conference will take place in London on 13th, 14th, and 15th March, 1964 when it is hoped you will be present. Further information will be sent to you through the normal channels.

BACK NUMBERS OF J.S. AFR. VET. MED. ASS.

The Association has for sale back numbers containing articles on many veterinary subjects.

The Association will pay 50c. per copy for back numbers in good condition.

The following numbers are particularly required:—

1943—March, September, December.
1944 — March.
1946 — September, December.
1947 — March.
1948 — March, June, September, December.
1949 — March, June.
1950 — March, June.
1951 — March, June.
1954 — June.
1955 — December.
1956 — June, September.
1957 — March, June, September.
1958 — March.
1959 — June, December.
1960 — March.
1961 — March, June.
1962 — March.

WORLD VETERINARY ASSOCIATION

The *Proceedings* of the 3*rd. Symposium* (Nice, 1962) of the *World Association of Veterinary Food Hygienists* has just been published. It consists of lectures by acknowledged authorities on meat and slaughterhouse hygiene, the transport of slaughterstock and meat, the hygienic control of fish and water foods, and methods to control the heat treatment of milk, milk products, eggs and egg products.

The proceedings, consisting of 304 pages, may be obtained from the Secretariat, W.A.V.F.H., Sterrenbos 1, Utrecht, Netherlands.
Price $7-50.

VETERINARY HEALTH CERTIFICATES

Printed and offered for sale by the Association in both languages and obtainable from the Secretary, P.O. Box 2460, Pretoria.

Books of 50 Veterinary Health Certificates bearing the crest of the South African Veterinary Medical Association and printed in Afrikaans and English are available at the following prices.

Members desiring these books of certificates should remit the necessary amount to the Secretary, P.O. Box 2460, Pretoria.

Certificates for Small Animals	50c
Certificates for Cow or Heifer	75c
Certificates for Bull	75c
Certificates for Horse	75c
Certificate for Ram	R1.00

LIST OF VETERINARIANS

Tne S.A.V.M.A. compiles and offers for sale the following list of Veterinarians residing within and beyond the Republic.

1. FULL LIST of Members of the S.A.V.M.A. indicating their places of residence. R2.10 *per list.*
2. PROVINCIAL LIST of Members of the S.A.V.M.A. indicating their places of residence. R1.50 *per Provincial list.*
3. CITY LIST of Members of the S.A.V.M.A. indicating the Veterinarians residing in the cities of Johannesburg, Pretoria, Cape Town, Port Elizabeth, East London, Durban, Pietermaritzburg, Bloemfontein, Windhoek.

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