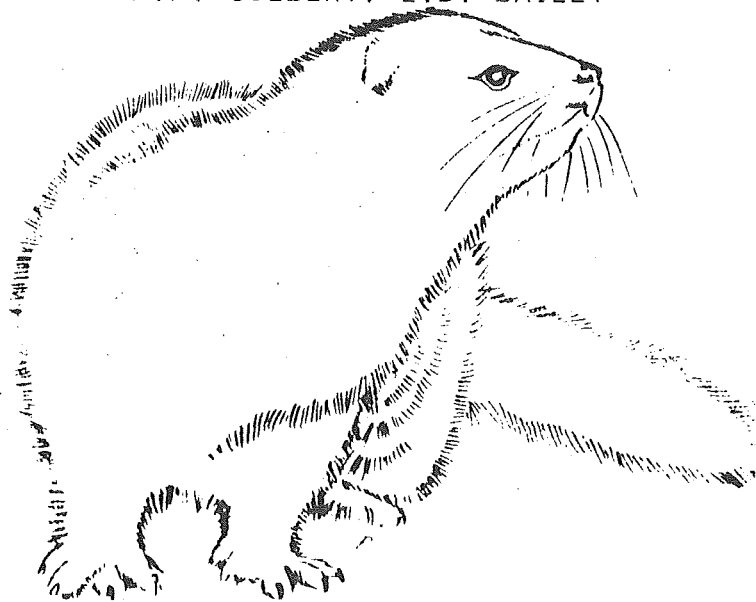


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N O T E S

SCIENTIFUR, VOL. 5, NO. 4, 1981.

With this last issue of Volume 5 the readers of SCIENTIFUR have been presented to more than one thousand scientific reports on fur animal production.

Of course, we realize that far from all reports or abstracts are of equal topical interest to the individual reader, but neither is this the intention behind SCIENTIFUR.

The intention is that everyone interested in events within fur animal research should be given a good opportunity to keep abreast of developments within all disciplines of fur animal production.

It is our hope that both now and in future SCIENTIFUR may live up to the expectations of both the publishers and the readers.

In view of the many reports published in SCIENTIFUR over the years we feel the time has come when it would help our readers and users if an index for the first five volumes were compiled. Besides, we at times find ourselves in doubt as to which reports have been published in SCIENTIFUR, which ones are in preparation, and which ones we have ordered. This problem has gained momentum in that we try to supplement copy consistent literature search via about 10 different data banks.

Both the compilation of the Index and the solution to our problems will be initiated at the beginning of 1982, and we optimistically expect to bring the index in Vol. 6, No.1.

In the field of research literature search is the starting point for all projects and the basis of all solution. We trust, therefore, that to many people SCIENTIFUR will prove the easiest, cheapest and most effective link in the chain for all involved in research, trials and production.

At the beginning our greatest problem was access to a sufficient number of reports and abstracts. Now, our problems are reversed in that we must try to place more copy per page as from next year in order to keep abreast. This policy has had to be adopted to avoid exceeding the weight limit of 250 grams per issue, in that failure to do so would almost double postal expenditure, and even though subscription rates will be raised to Dkr. 250.- per volume from January 1982, such postage charges cannot be covered in the budget.

Apart from numbers of reports in relation to the present capacity of SCIENTIFUR - which is naturally a most pleasant problem - we are faced with the difficult that many of the reports are written in Russian and other languages. This makes interpretation of the substance of matter rather difficult, in that abstracts and tables and figures do not also suffice. Translation of such reports is very costly and should be made on an international basis. But how ? When ? and Where? If any of SCIENTIFUR's readers, like we, are interested in optimum utilization of available knowledge, we should be grateful to receive proposals for a solution to the problem - be they part-solutions or full coverage ones. Today we have more than 200 reports in stock written in Russian or other "difficult" languages.

In the section Communication the readers will find news regarding The 4th International Scientific Congress on Fur Animal Production. Our friend Bruce W. Smith from The National Board of Fur Farmers' Organizations has stressed the interest of U.S.A. and Canada in arranging this congress as a joint venture. This matter was not discussed at the Nordic meeting in Helsinki last October. I have a feeling that certain parties have misgivings about the fairly high costs of sending participants from Scandinavia to the United States. These misgivings should not overshadow the importance of researchers being given an opportunity of meeting colleagues as well as of seeing new places. On the contrary, I find that

through a geographical spreading of the congresses the breeder organizations are given a splendid opportunity to contribute to research stimulation through the medium of congresses. Instead of nurturing financial scruples it would probably be more fruitful to consider whether one or more study tours could be arranged in connection with the Congress to enable researchers to gain first-hand knowledge of conditions in the topical host country/countries.

As previously indicated, we have felt that cooperation with the United Kingdom has been fairly poor. I was, therefore, particularly pleased to receive a letter from Mick Hallam just after the latest issue of SCIENTIFUR has been printed. Mich Hallam's letter and my reply are given in the section Communication, partly to stress that we must not forget the commercial producer when giving vent to pleasure of being flooded out with scientific material, partly to take the opportunity of bidding Mich Hallam welcome to work and cooperation, hopefully fruitful at all levels within fur animal production.

As the cooperation has already resulted in receipt of a copy of Proceedings from the F.B.A. Sixteenth Training Course and Conference in April 1981, we hasten to review this valuable document in the section Communication.

Hoping for allround cooperation in future we wish to thank contributors and subscribers for the year that is fast approaching its end.

May those who have the pleasure of editing SCIENTIFUR wish all and sundry a Very Merry Christmas and a Happy, Prosperious Successful New Year.

With all good wishes,

Yours sincerely


Gunnar Jørgensen
editor



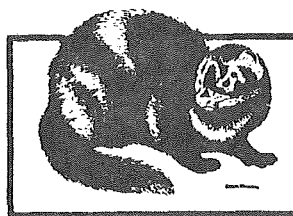
MULTIDISCIPLINARY.

COLLECTION OF BLOOD, SEDATION AND ANAESTHESIA IN MINK

A Haematological
and Clinical-Chemical Study

by

Ø. R. Jepsen, J. S. Dirch Poulsen
and G. Jørgensen



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30 figs., 12 tables, 8 photos, 56 references.
In English with summaries in English, German,
and Danish.

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Fig. 1. Cutting a nail for collection of a small volume of blood.



Fig. 2. Suction of blood into a capillary tube from the cut nail.



Fig. 4. Position of v. jugularis.

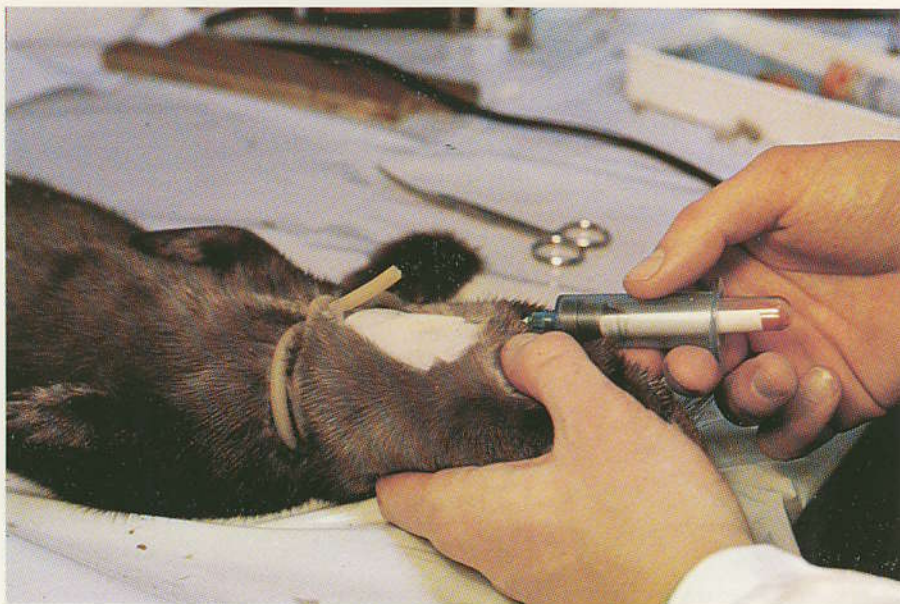


Fig. 5. Blood collection from v. jugularis.



Fig. 6. Localization of the heart.



Fig. 7. Blood collection from the heart.



Fig. 8. Blood collection from the heart.



Fig. 9. Intraperitoneal injection.

Summary

Collection of Blood, Sedation and Anaesthesia in mink. A haematological and clinical-chemical Study

Chapter 1: Methods of Collecting Blood From Mink

Owing to the labile temperament and small size of mink, collection of blood samples may give rise to difficulties both of physiological and physical nature.

Previous examinations of mink and other species of animals have shown that changes in the temperament of animals may influence the values of a number of clinical-chemical parameters. Hence difficulties may arise concerning the comparability and reproducibility of the results unless standard methods and standard conditions are adopted in the blood collection procedure.

Chapter 1 deals with the methods known from literature (Tables I—II) for collection of large and small volumes of blood (Figs. 1—2, 4—8). Furthermore is shown how important it is to the reproducibility of the results that active hemostasis is performed after collection of blood from the toe nail (Fig. 3).

A number of requirements of collection of blood samples and detailed methods of collection of venous blood from V. jugularis and blood from the heart of anaesthetised animals are indicated and illustrated in Figs. 4—8.

Chapter 2: Clinical Examination of the Effect of Various Sedatives and Anaesthetics in Mink

A number of authors have shown that collection of large volumes of blood from mink requires the use of sedatives/anaesthetics. However, this will affect the physiological condition of the animals and hence their hematological and clinical-chemical state. In order to elaborate standard procedures for routine collection of blood from mink it has been found necessary to give a description of the clinical and clinical-physiological changes which may occur in mink on the application of sedatives/anaesthetics.

For comparative evaluation of the effect of sedatives and anaesthetics in relation to other species of animals, the universally known principles of the effect of drugs on the central nervous system as well as the pharmacological characteristics of the preparations are discussed. This chapter also contains definitions of the most commonly used terms within anaesthesia and pharmacology. The principles of the effect of drugs on the central nervous system are discussed with a view to an evaluation of the influence of sedatives/anaesthetics on the organism, and the reactions of the latter.

A clinical description given of the observed pharmacological effect of phenothiazine derivatives, butyrophenone derivatives, xylazin, barbituric acid derivatives, cyclohexanone derivatives, steroid anaesthetics, chloral hydrate, and ether in 193 mink is summarized in Table V. The applicability to the drugs tested on the basis of 437 sedations/anaesthetics is evaluated and discussed.

Chapter 3: Changes in Haemoglobin Concentration, Haematocrit (PCV), and Acid-Base Status in Mink During Work, Sedation, and Anaesthesia

In easily excitable animals non-reproducible data may be recorded under various conditions. To counteract these obstacles, the authors have studied the effect of sedatives and anaesthetics, as well as stress and strain on some haematological parameters and the acid-base status of the animal, through sedation and anaesthetization or combinations of these.

The examination included 25 groups of 6 mink. The animals were apparently healthy and free of plasmacytosis. Blood samples were drawn from a toe nail 15 minutes after the animals had been caught in a trap. After this, 19 groups were treated with different sedatives/anaesthetics. Blood samples were collected after 30 min. and 90 min. irrespective of the different duration of effect of the various drugs. In a few groups blood samples were also collected after 24 hours; 4 groups were not treated, and 12 animals (group 5) were subjected to a combined stress/work load.

The results are shown in Table VI a—VIII b and Figs. 10 a—11 b. The results are discussed in relation to the effect of the individual administrations on the physiological and clinical conditions of the animals.

It is concluded that determination of the haemoglobin level and packed cell volume in sedated/anaesthetized mink requires careful consideration with relation to the drug used. For determination of the acid-base balance of the animals, medicamental sedation/anaesthesia is necessary in order to obtain representative values. With respect to the untreated groups, it was observed that groups 2—4 from private farms had initially higher haematological values and more acidotic values than the animals from the experimental farm, where the animals were used to be caught in traps.

Chapter 4: Determination of a Number of Haematological and Clinical-Chemical Parameters in Anaesthesia of Mink With Various Drugs/Drug Combinations

Analysis of a large number of blood parameters often requires more blood than can be drawn from a toe nail, for which reason it is necessary to draw blood from the v. jugularis or the heart. But this requires sedation/anaesthesia of the animals.

The purpose of the examinations described in this chapter was to study the effect of various types of anaesthetic on haematological and clinical-chemical parameters in mink at the time after application when the effect of the drug would be highest. Furthermore, the reproducibility of the results of methods used should be tested. At the same time, reference values for a number of clinical-chemical parameters could be indicated. The examination was carried out on 66 male mink, which were clinically healthy and free of plasmacytosis. From each animal 10 ml of blood was collected 5—15 minutes after the onset of complete anaesthesia. The procedure was repeated 3 times at 5 weeks intervals.

The results were processed statistically and compared (Figs. 12—22). Tables IX—X and Figs. 23—30 show the mean values and standard deviation for haemoglobin, PCV, RBC, WBC, total protein, ALAT, ASAT, CK, glucose, lactate, and creatinine, without correction for test days.

Table XI shows mean values of differential count of white blood corpuscles for each test day.

The examination shows the variation between test days within the same group and between groups, and the results are discussed. The variance between the test days is decisive of the variation with which the individual drug may affect the individual parameters. At the same time, however, it is necessary that the measured parameters are at a physiologically normal level, or that the effect of the drug on the individual parameters is constant with relatively little standard deviation.

Statistical analysis showed that the steroid anaesthetic Althesin® was the best drug for collection of representative and reproducible blood samples for clinical-chemical and haematological analysis in mink (Table XII).

The results of the examinations give cause for recommendation of the following procedures for collection of blood samples from mink for determination of haematological and clinical-chemical parameters:

1. Haemoglobin and Packed Cell Volume

The animals are caught in a trap, where they are left for at least 15 minutes. Then they are squeezed into a corner of the trap, and the blood sample is drawn from a cut toe nail. To prevent loss of blood, it is recommended to cauterize the wound with an electric cauterizer. In cases where blood is collected from sedated or anaesthetized animals, the effect of the drug in question on the blood circulation, and hence on haemoglobin and PVC values, should be kept in mind and be considered when the results are evaluated. In such cases it is recommended to use a drug with a constant effect on the above parameters, e.g. Combelen® (see page 61).

2. Acid-Base Balance

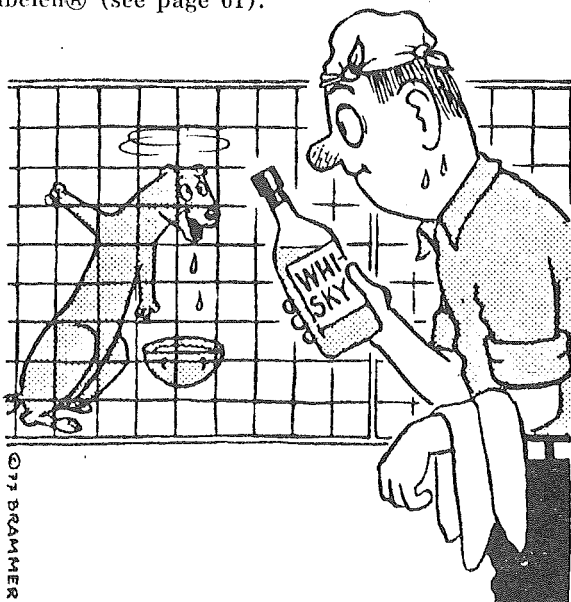
The blood is drawn from a toe nail (arterialised capillary blood) of sedated/ anaesthetized animals. Most anaesthetics and sedatives affect respiration to such a degree that pCO_2 increases dramatically, whereas base excess is normalized after about 30 minutes regardless of the drug used.

Combelen® has a minimal effect on respiration, and it is recommended to inject this drug intraperitoneally about 30 minutes prior to the collection of blood (Fig. 9). Excitement and rough handling of the animals before the injection should be avoided.

3. Some Clinical-Chemical Parameters (e.g. ASAT, ALAT, CK, Glucose, Lactate, Creatinine)

For determination of the above parameters a larger volume of blood is required (5—10 ml), for which reason the blood must be collected from either v. jugularis or the heart of animal under surgical anaesthesia. It is important prior to the treatment to have made certain that the drug used either does not affect the physiological level of the parameters concerned, or that the effect is constant and reproducible. The present examination seems to show that surgical anaesthesia of mink with the steroid Althesin® and collection of blood from v. jugularis using the technique described in Chapter 1 can be used and is the best method known at the present time.

Althesin® is injected intraperitoneally into the trapped animal, and the blood collecting procedure is initiated after about 20 minutes, when the anaesthesia is deepest. The effect of Althesin® on the parameters determined in the present investigation must be described as being minimal, and the method is recommendable for population screening of clinical-chemical parameters in mink. Haematological studies can also be performed according to this method, provided that the decreasing effect of Althesin® on the blood pressure is taken into consideration in the evaluation of the results.



Øyvind; "I feel that this is the best sedativa you have tested until today."

★ USING JET INJECTION TO VACCINATE MINK AND FERRETS AGAINST
CANINE DISTEMPER, MINK VIRUS ENTERITIS, AND BOTULISM,
TYPE C.

D.T. Shen, J.R. Gorham, L.M. Ryland, A. Strating, Animal Disease Research Unit, Science and Education Administration, US Dept. of Agriculture, 337 Veterinary Science Building, Pullman, Washington 99164, USA.

The efficacy of jet injection for vaccinating mink and ferrets against canine distemper, mink virus enteritis (MVE), and botulism Type C was measured. Three types of commercial vaccines were used: 1) distemper, 2) botulism Type C and MVE bivalent vaccine, and 3) distemper, MVE, and botulism Type C trivalent vaccine. All animals vaccinated by jet injection were protected when challenged later with virulent distemper virus and botulism type C toxin. After vaccination, 68% of the ferrets and 76% of the mink demonstrated threefold or greater increases in serum neutralization of MVE titers.

Veterinary Medicine/Small Animal Clinician, 856-859, June 1981.
2 figs, 15 references.

Authors summary.

★ EVALUATION OF CONNECTIONS BETWEEN PELT QUALITY AND COAT
STRUCTURE AND COLOUR IN ARCTIC FOX.

(Ocena zależności między jakością skóry a strukturą i
barwą okrywy włosowej lisów polarnych).

Ryszard Cholewa, Józef Gluszak, Z. Zakładu Genetyki i Podstaw Hodowli Zwierząt Instytutu Hodowli i Technologii Produkcji Zwierzecej, Poland.

In winter 1972, the hair samples were taken on the back of 40 blue Arctic vixens one-year old. The authors measured the height

and length of hair of four anatomical types and length of colour zones on hair. They determined the lightness of underhair colour using the colorimeter Momcolor, then the composition of coat distinguishing overcoat and underhair. The calculations concerned the height to length ratio which was regarded as an crimpiness index, then height and length of underhair to overcoat ratio and length of colour zone to length of hair ratio determining the colour contrast.

Some years later, when the vixens were killed, their pelts were classified into individual quality groups following the sorter's evaluation and then mean values of the traits determined in the laboratory were calculated for these groups.

The authors found statistically significant differentiation in the length of colour zones among light, mean and dark pelts. They observed an influence, though of low statistical significance, of greater height of hair on lower quality of coat. There was no connection between the occurrence of stripes and dimensions of hair length and coat composition. Rather little connection existed between the classes and categories and the traits measured in laboratory as it was found only in the cases of height of awned down and in percentage of overhair.

Roczniki Akademii Rolniczej w Poznaniu, CXX (1980) 19-25.

3 tables, 2 references.

In Polish with subtitles in English. Summaries in English and Russian.

Authors summary.



**RELATIONSHIP BETWEEN THE LABORATORY AND ORGANOLEPTIC
EVALUATIONS OF SOME TRAITS OF THE BLUE FOX COAT.**

(Związek między oceną laboratoryjną a organoleptyczną
niektórych cech okrywy lisa polarnego niebieskiego).

Ryzard Cholewa, Jerzy Gedymin, Z. Instytutu Hodowli i Technologii
Produkcji Zwierzęcej, Poland.

The authors studied the correlations between the organoleptic evaluations of hair length and coat colour and the values obtained by measurements of length and height of hair of 4 anatomic types, length of top pigmented zone and of underhair colour determined by a colorimeter. The mutual relationship and the differences in the mean height of individual types of hair were also taken into consideration. The fur samples were taken from the back of 396 females in winter coats.

The results of investigations showed low but statistically significant correlations. The determination coefficient for colour was 10.31% and that for length of hair was 5.14. The negative correlation was found for hair length.

Roczniki Akademii Rolniczej w Poznaniu, XCIV (1977), 27-35.

3 tables, 9 references.

In Polish with English subtitles. Summaries in English and Russia.

Authors summary.

★ **ATTEMPT AT INCREASING THE EXACTNESS OF MEASUREMENTS OF
HAIR DIAMETER AND MEDULLATION IN RABBIT WOOL HAIR.**

(Próba zwiększenia dokładności pomiaru grubości i rdzenistości włosów puchowych w sierści Króliczej).

R. Cholewa, J. Gedymin, Z. Instytutu Hodowli i Technologii
Produkcji Zwierzecej, Poland.

Great variation in the structure of rabbit hair causes some difficulties in the evaluation of thickness and medullation of wool hair.

Basing on a comparison of actual values of hair and medulla diameters with those calculated from one or two measurements, the authors formed the formulae for corrections, which permit the calculation of mean hair diameter, to 4% exactness (III) and of mean medulla diameter, to 9.1% exactness (IV) in the case of 2 measurements at 6 mm distances from tip and base of the hair.

In the case of one measurement in the middle of the hair the exactness was 5.8% for hair thickness (I) and 11.9% for medulla diameter (II). The symbol K is used for mean diameter measured to micrometers.

The formulae for corrections in hair diameter are: I: $K \times 9.93$; III: $K - 1.3 \mu\text{m}$; V: $- 0.8 \mu\text{m}$; VII: $K - 1.4 \mu\text{m}$; while in medulla diameter they are: II: $K \times 0.8$, IV: $1.02 K - 2.1 \mu\text{m}$; VI: $K \times 0.84$; VIII: $K \times 0.815$.

Roczniki Akademii Rolniczej w Poznaniu, LXXIV (1974), 13-19.

3 tables, 1 fig., 7 references.

In Polish with subtitles in English. Summaries in English and Russian.

Authors summary.



CAUSES OF LOSSES IN RAISING POLAR FOX.

(Przyczyny strat w odchowcie lisów polarnych).

Ryzard Cholewa, Z Instytutu Hodowli i Technologii Produkcji Zwierzecej, Poland.

In order to investigate the influence of environmental factors as composition of the rations, weather, age of the dam and date of parturition on the amount of losses during raising fox puppies, the author analysed 709 litters from 3 years (1970-1972) born by 394 polar vixens.

The comparison of data illustrating the influence of the mentioned factors indicated that their effects were combined as concerns raising puppies up to weaning. It was found that losses were smaller in the litters born earlier (in April).

Roczniki Akademii Rolniczej w Poznaniu, CI (1978). 31-37.

5 tables, 5 references.

In Polish with subtitles in English. Summaries in English and Russian.

Author summary.



**A COMPARATIVE STUDY OF THE DEVELOPMENT OF HEARING
AND VISION IN VARIOUS SPECIES COMMONLY USED IN EXPERIMENTS.**

I. Foss, G. Flottorp, Dept. of Anatomy, Vet. College of Norway,
Postbox 8146, Oslo-dep., Oslo 1, Norway.

Inception of hearing and opening of eyelids were examined in cat, rabbit, dog and mink. The hearing tests were performed with pure tones and bands of noise observing various types of behavioural responses. Hearing was found to occur at an average age of 5 days in cat, 7 days in rabbit, 14 days in dog and 29 days in mink. The frequencies first responded to and the successive development of hearing for other frequencies are reported and related to data from the literature for five other species. Opening the eyelids started at an average age of 7 days in cat, 10 days in rabbit, 14 days in dog and 33 days in mink. The possible connection between blood supply to the various coils of the cochlea (in man) and the ontogenetic development of hearing and the deterioration of hearing with aging and acoustic trauma is discussed.

Acta Otolaryng, 77: 202-214, 1974.

6 tables, 6 figs., 51 references.

In English with abstract in German. Authors abstract.



**ECOLOGICAL DEPENDENCE OF CARDIAC ACTIVITY IN MUSTELIDAE
(DOMESTICATED FUR ANIMALS).**

**ЭКОЛОГИЧЕСКАЯ ОБУСЛОВЛЕННОСТЬ
СЕРДЕЧНОЙ ДЕЯТЕЛЬНОСТИ У MUSTELIDAE**

D.V. Ternovskii, I.L. Tumanov, I. Ternovskaia,

Studies in the bioelectrical cardiac activity, respiration act and body temperature of mustelids permitted species specific properties of these animals to be revealed, which contributes to comprehension of their adaptation mechanisms. The data of the

research make it possible to differentiate the species by the level of the physiological activity, which may be of essential significance when specifying their taxonomic belonging.

Vestnik Zoologii (Kiev, "Naukova Dumka") Jan/Feb. 1981, 1, 62-69.

3 tables, 3 figs., 11 references.

In Russian with English summary.

Authors summary.



**VISUAL ISOLATION AND STRESS IN FEMALE RANCH MINK
PARTICULARLY DURING THE REPRODUCTIVE SEASON.**

F.F. Gilbert, E.D. Bailey, 234 Forest Resources Building, Univ. of Maine, Orono, Maine.

Blood samples taken by cardiac puncture from female mink in visually isolated and control social regiments showed little meaningful difference in erythrocyte and leucocyte counts. However, the numbers of eosinophils and lymphocytes were lower in the visual isolated during anoestrus and higher during oestrus.

Twenty-two control females weighed near the beginning of the oestrous period showed greater body weight losses during oestrus and pregnancy or pseudopregnancy than did 22 visually isolated females. Similar observations were recorded for six females of each regimen that were transferred to the opposite social condition postbreeding.

Adrenal weights were higher and spleen weights lower during oestrus and pregnancy or pseudopregnancy in the control females. Females moved to visual isolation postbreeding showed both adrenal and spleen hypertrophy after parturition when compared with females moved to control cages.

Visual isolation is apparently more stressful to female mink during the anoestrous period but reduces stress during oestrus and pregnancy. The increased adrenal steroid output of control mink

as part of the stress syndrome during the critical reproductive period might be responsible for increased in utero losses. But increased adrenocortical output associated with the stress of long term visual isolation might result in insufficient gonadal stimulation resulting in fewer pregnancies. Splenic atrophy appears to be symptomatic of a stress condition and adrenal hypertrophy may only be indicative of stress when accompanied by this atrophy.

Canadian Journal of Zoology, Vol. 47, 1969, 209-212.

4 tables, 14 references.

Authors summary.



THE EFFECTS OF SOCIAL DEPRIVATION ON THE BEHAVIOUR AND REPRODUCTIVE POTENTIAL OF THE RANCH MINK.

Frederick Franklin Gilbert, University of Guelph, Canada.

Mink (*Mustela vison*) were tested as to certain blood characteristics, activity, behaviour, stress and reproductive potential under varying degrees of social deprivation.

Long term social deprivation decreased the percentage of females that could be successfully bred as well as the number of litters produced. The male under these conditions failed to exhibit a normal sexual response to the female at the usual breeding time. Insufficient external stimulation by social contact with other members of the species, probably resulted in a slower physiological response to increasing photoperiod in the isolated animals. This delayed the onset and subsequent timing of reproductive preparedness in these animals removing any physiological synchrony with the control animals.

Short term social deprivation, partial or complete, post breeding, produced larger litters in pastel and aleutian females and significantly larger litters in dark females.

Female mink weaned earlier than eight weeks of age required significantly fewer breeding attempts before successful insemination. Male mink weaned prior to eight weeks of age were unsuccessful

in achieving intromission and insemination.

Physical properties of mink blood, including erythrocyte numbers, leucocyte numbers and differential ratio, haemoglobin levels, haematocrit and pH were measured. Increases in segmented neutrophils and monocytes and corresponding decreases in lymphocytes and eosinophils were recorded for the breeding season in both sexes. These changes were correlated to increased adreno-cortical and gonadal secretion during this time of year.

Control female mink lost more weight and had consistently higher adrenal weights before, during and after the mating season than did socially deprived females. A definite correlation existed between weight loss and adrenal weight. The extent of social deprivation determined the extent of weight loss with the greatest deprivation causing the least body weight change. The size of the holding cage also affected these two parameters as did movement from one social regimen to another.

Ranch mink activity in all the social groupings maintained a relationship to environmental conditions that depended upon the exposure of the holding area and the conditions of social deprivation. Socially deprived mink were less active than control animals. Animals with visual access to other mink were more active during the day than isolated animals. Pregnancy significantly increased mink activity. Seasonal variations existed in the relationship of mink activity to environmental conditions and sunrise and sunset times. However, a consistent positive correlation with temperature and negative correlation with humidity was observed for mink activity. More energy was expended during daylight hours, on a proportionate basis, during the winter than during either the fall or spring. Males were less active than females, except during the mating season, and displayed different behaviour when in the cage area of the holding pen than did females. Ovariectomized females displayed day-night activity patterns similar to that of the males. Also, these females had significantly higher sustained activity levels than did control females.

Visual observation of behavioural patterns of mink indicated considerable differences between juveniles and adults but many similarities between sexes within the same age group. Socially deprived mink spent much less time outside their nest box and generally were more individual in their behavioural patterns. Differences in behavioural patterns during two-hour segments of the solar day were noted. Behaviour consistent with wild Mustelids, such as utilization of latrine sites, ritualistic marking and food storage were witnessed. Ranch mink, while varying considerably within and among the various genetic strains, appear still but little removed from their wild ancestry in much of their behavioural manifestations.

The influence of the adrenal gland in the results obtained was discussed.

Dissertation Abstracts International 1972, Feb., Vol. 32,(8-B), 4938.

(To obtain a microfilm copy please order directly from the National Library of Canada at Ottawa).

★ **REVERSAL LEARNING OF OBJECT AND POSITIONAL DISCRIMINATIONS
BY MINK, FERRETS AND SKUNKS.**

Barbara A. Doty, Walter C. Combs, Dept. of Psychology,
North Central College.

Mink, ferrets and skunks were tested on successive reversals of two-choice object or positional discriminations in a modified Wisconsin General Training Apparatus. All species showed considerable improvement in performance after considerable training and some subjects exhibited one-trial reversal learning. Mink and ferrets persistently made more errors when position cues were relevant than when object cues were relevant; the reverse was true of skunks.

Q.J1. exp. Psychol. 1969, 21,58-62.

1 table, 2 figs., 15 references.

Authors abstract.



LEARNING-SET FORMATION BY MINK, FERRETS,
SKUNKS, AND CATS.

Barbara A. Doty, C. Neal Jones, Larry A. Doty, Dept. of Psychology,
North Central College, Naperville, Illinois 60540. USA.

The ability of mink, ferrets, skunks, and cats to learn to discriminate between objects was compared. Performance of mink and ferrets was similar to that reported for primates. This observation suggests that there is considerable overlap among mammals in ability to form learning sets.

Science 1967, 155 (3769) 1579-1580.

2 figs., 10 references.

Authors abstract.



AN INVESTIGATION ON THE INFLUENCE OF EXPLORATION AND
PLAYING ON LEARNING BY POLECATS (M.P. X M.F.).

(Untersuchung zum Einfluss des Erkundungs- und Spielverhaltens
auf das Lernen bei Iltisfrettchen (*Mustela putorius* x *M. furo*)).

Marlies Weiss-Bürger, Potsdamer Strasse 4, D-3550 Marburg/Lahn.

This paper investigated the dependence of learning performance on previous exploration and playing with objects. The subjects are polecats (*Mustela putorius* x *Mustela furo*). Behaviour of social animals, who are offered changing tube systems in certain periods, is described and analysed. Behavioural categories are built by orientation and elements of social play.

During daily periods of observations, the proportion of duration and frequency of behavioural categories changes. In the beginning, tube-directed patterns and social play near the tube prevail. Later on, patterns directed to surroundings dominate (cage-directed-behaviour). As time advances social play takes place in growing distance from the tube.

Sequential analysis shows that the animals change mostly between tube-oriented and cage-oriented patterns and between social play close to the tubes and tube-independent social play. After tube-oriented patterns, the animals often start social play. During play the distance from the tubes increases but the animals eventually return.

The maze-test shows that subjects with tube training are superior to subjects without tube training as regards acquisition and reversal learning. There is no difference in retention and re-learning in the different groups. The learning performance in pattern recognition tests is the same in alle tests with the different groups, however. Therefore, prior experience of tube manipulation improves learning mechanisms which requires similar sensory and motor performance.

Z. Tierpsychol. 55, 33-62, 1981.

6 tables, 12 figs., 43 references.

In German with English summary.

Author summary.



GROWTH RHYTHMS OF YOUNG MINKS (MUSTELA VISON BR.).

АНАЛИЗ РИТМИЧНОСТИ РОСТА МОЛОДНЯКА НОРОК (MUSTELA VISON BR.)

O. Ya Yazan, Ye V. Baibikov, All-Union Research Institute of Hunting Farming and Fur Breeding, Kirov, USSR.

The process of growth in the young of *Mustela vison* Br. was shown to proceed rhythmically: increase in the mean daily weight gain alternates with its fall. Knowing the peculiarities of growth it is possible to reduce the fall by feeding. The nominal value of the growth wave length was shown to be 4 days.

Zh. Obschch. Biol., 41 (1) 150-2, 1980.

3 figs., 4 references.

In Russian with summary in English.

Authors summary.

**GENETICS****★ HERITABILITY FOR LITTER SIZE IN MINK WITH SPECIAL REFERENCE
TO METHODS OF ESTIMATION AND INFLUENCE OF MATERNAL EFFECT.**

Einar J. Einarsson, Dept. of Poultry and Fur Animal Science,
Agricultural University of Norway, 1432 Ås-NLH, Norway.

The aim of the present study was to analyse different methods of estimation of heritability for litter size in mink. The methods used were based on: daughter nested within dam and sire, daughter nested within sire, regression of daughter on dam and regression of daughter on granddam.

Data from the experimental farm (NLH) involved about 950 litters over 3 years with information on litter size at birth and about 650 litters over 2 years concerning litter size at weaning. The data from the two commercial mink farms (farms 1 and 2) contained information on litter size at weaning, and included about 2,800 litters from each farm, representing four different colour types.

For litter size at birth the heritability was about 0.2 and the best results were obtained by using the method of regression of daughter on dam. The numbers of daughters per dam and per sire were 1.4 and 3.0, respectively.

The heritability for litter size at weaning was about 0.2, but varied between farms, estimation methods, age of the female and colour types. The method using daughter nested within dam and sire may give reliable estimates, but will depend on family size. In this investigation the number of daughters per dam and sire were 1.5 and 3.7, respectively. With limited family size the method of regression of daughter on dam seem to be preferable. This method resulted in the lowest standard errors for the heritability.

The present investigation revealed no evidence of negative correlation between direct and maternal effects for litter size, neither genetic nor environmental.

Acta Agric. Scand. 31, 1981.

8 tables, 4 figs., 19 references.

Author summary.

★ ESTABLISHMENT AND CHROMOSOME ANALYSIS OF A NEW CELL LINE
OF AMERICAN MINK (*MUSTELA VISON*).

ПОЛУЧЕНИЕ И ХРОМОСОМНЫЙ АНАЛИЗ НОВОЙ КЛЕТОЧНОЙ
КУЛЬТУРЫ АМЕРИКАНСКОЙ НОРКИ (*MUSTELA VISON*)

L.G. Reznik, G.F. Reshetnikova, S.I. Radjabli, Inst. of Cytology
and Genetics, Academy of Sciences of the USSR, Siberian Div.,
Novosibirsk.

A new culture of embryonal fibroblasts of American mink (*Mustela
vison*, $2n = 30$) (MV) has been established.

The culture is characterized by rapid growth, rather high plating
efficiency (for the 100th passage the plating efficiency amounted
to 50%), distinct identification under G-staining not only of
normal but altered chromosomes as well.

Clones of independent origin were obtained and investigated.

The caryotypic analysis showed that MV retained deploid set of
chromosomes up to the 70th passage. At the 100th passage the
culture underwent a number of changes: the 29-chromosome class
of cells became a modal class as a result of the monosomy for
the X-chromosome. Some alterations are observed in one of the
homologues of chromosomes 8 and 9.

These chromosome changes may be associated with both the cultiva-
tion conditions and the longevity of these cells in vitro.

Genetika, 16/6, 10201025, 1980.

1 table, 5 figs., 14 references.

In Russian with summary in English. Authors summary.



Merry Christmas.

★ GENETICS AND PHENOGENETICS OF HORMONAL CHARACTERISTICS
OF ANIMALS.

VI. FUNCTIONAL ACTIVITY OF SOME CHEMORECEPTORS CONNECTED
WITH THE PITUITARY ADRENAL SYSTEM IN SILVER FOXES
SELECTED FOR BEHAVIOUR.

ГЕНЕТИКА И ФЕНОГЕНЕТИКА ГОРМОНАЛЬНЫХ
ХАРАКТЕРИСТИК ЖИВОТНЫХ
СООБЩЕНИЕ VII. КОРРЕЛЯТИВНАЯ ВЗАИМОСВЯЗЬ МЕЖДУ СЕРОТОНИНОМ
МОЗГА И ГИПОТАЛАМО-ГИПОФИЗАРНО-НАДПОЧЕЧНИКОВОЙ СИСТЕМОЙ
В УСЛОВИЯХ ЭМОЦИОНАЛЬНОГО СТРЕССА У ДОМСТИЦИРУЕМЫХ
И НЕДОМСТИЦИРУЕМЫХ СЕРЕБРИСТО-ЧЕРНЫХ ЛИСИЦ

E.V. Naumenko, L.N. Trut, S.I. Pavlova, D.K. Belyaev, Inst. of
Cytology and Genetics, Academy of Sciences of the USSR,
Siberian Division, Novosibirsk.

Seasonal differences in the reaction of the pituitary-adrenal system in domesticated and non-domesticated silver foxes of both sexes to substances activating alpha-, beta-adrenoreceptors, and serotonin receptors were studied.

It was shown that the reactivity of the pituitary-adrenal system in silver foxes of either type of behaviour is due, at least partially, to seasonal differences in the state of adrenergic and serotonergic mechanisms. At the same time, in silver foxes selected for behaviour to man the reaction of the pituitary-adrenal system to the injection of substances activating adrenergic and serotonergic receptors differs, during the year, from the reaction to these compounds in non-selected animals.

The conclusion was made, that in the process of domestication changes take place in the state of serotonin- and noradrenaline mechanisms connected with the regulation of the hypothalamo-pituitary-adrenal complex.

Genetika (Moscow), Vol. 16, ISS 10, 1980, 1857-64.

4 figs., 5 references.

In Russian with summary in English. Authors summary.





GENE DOSAGE OF LPM-SYSTEM OF MINK ALLOTYPES.
QUANTITATIVE ANALYSIS OF LPM1, LPM2 AND LPM4 MARKERS.

ЭФФЕКТ ДОЗЫ ГЕНОВ Lpm-СИСТЕМЫ АЛЛОТИПОВ ПОРОК.
КОЛИЧЕСТВЕННЫЙ АНАЛИЗ МАРКЕРОВ Lpm1, Lpm2 и Lpm4

O.K. Baranov, T.V. Zykova, V.I. Ermolaev, Inst. of Cytology and Genetics, Academy of Sciences of the USSR, Siberian Div., Novosibirsk.

The dependence of serum concentrations of gene protein product on the number of corresponding gene copies was found under quantitative study of Lpm1, Lpm2 and Lpm4 allotypes of mink α_2 -lipoprotein (Lpm-system) of very high density. Minks, having two doses of this or that Lpm-gene, contain two-fold or almost two-fold Lpm-molecules of corresponding allotypic specificity than minks with only one gene dose in their sera. Due to the gene dosage effect, the quantitative technique used permits to differentiate directly the distinct Lpm genotypes with the similar phenotype, undistinguishable by the qualitative testing method. The dose of a single gene from gene set of Lpm-locus does not affect significantly the serum concentration of the total Lpm-lipoprotein consisting of different allotype variants of molecules. The dependence of quantity of Lpm-allotypes and the total Lpm-lipoprotein on the mink sex is not found.

Genetika, 16/5, 874-883, 1980.

2 tables, 7 figs., 21 references.

In Russian with english summary.

Authors summary.





REPRODUCTION

★ MORPHOLOGICAL AND BIOCHEMICAL CHANGES IN BLOOD DURING PREGNANCY AND POSTPARTURITION PERIOD OF FEMALE BLUE FOX.

(Zmiany morfologiczne i biochemiczne we krwi samic piesaków w przebiegu ciąży i okresu poporodowego).

Stanislaw Grzebula, Katedra Chorób Wewnętrznych Wydziału Weterynaryjnego NSR w Lublinie, Poland.

Investigations were carried out on 14 female nonpregnant foxes (control) and 11 pregnant (experimental) ones. The pregnant animals were examined in the 2.5 and 7th week of pregnancy and 1 and 8 weeks after parturition. Paralelly 2 nonpregnant animals were examined 5 times. The remaining 12 nonpregnant foxes were examined once, and the time when the experimental animals were 7 weeks pregnant. The following estimations were made? Fe, and Cu content of blood plasma, the total binding capacity of Fe by blood plasma, red cell count, hemoglobin level, hematocrit value, per cent of Fe saturation of transferins and values of Wintrobe indices.

The investigations indicate that the pregnancy results in considerable changes of blood composition. The changes began in the middle of pregnancy and achieved their highest degree in the last week of pregnancy. They consisted in decrease of plasma iron, of the per cent of Fe saturation of transferins, of Hb and hematocrite values and of number of red cells (on the average by 33.0%), and in an increase of Cu content and ceruloplasmine activity.

A tendency to hypochromia and macrocytosis was also observed. The changes found in pregnancy disappeared after parturition.

The author supposes, that the changes found in the second half of pregnancy were caused partly by physiologic dilution of the blood, and partly by af possible iron deficiency.

Zeszyty Problemowe Postępów Nauk Rolniczych, 1972, 124, 19-30.

1 table, 18 references.

Author summary.

In Polish with summary in English and Russian.

★ SEMINIFEROUS TUBULE DESTRUCTION AND REGENERATION UNDER
REPEATED ESTROGEN ADMINISTRATION TO RATS AND IN SEASONAL
TESTICULAR INVOLUTION IN EUROPEAN BEAVERS AND MINK.

ДЕСТРУКЦИЯ И РЕГЕНЕРАЦИЯ СЕМЕННЫХ КАНАЛЬЦЕВ
ПРИ ПОВТОРНОМ ВВЕДЕНИИ ЭСТРОГЕНОВ КРЫСАМ
И СЕЗОННОЙ ИНВОЛЮЦИИ СЕМЕННИКА У РЕЧНЫХ
БОБРОВ И НОРОК

S.S. Raitsina, N.S. Gladkova, T.R. Podrabinek, A.I. Prasolov,
Inst. of Human Morphology the USSR Academy of Medical Sciences
of Moscow, K.D. Glinka Agricultural Institute, Voronezh.

Under seasonal and hormone induced atrophy of mammal testis the destruction and resorption of the seminiferous tubules take place but not their involution as it was accepted by present time. Seminiferous tubules of embryonic type origin from the epithelium of rete testis and primordial germ cells kept among the epithelium of rete testis. Development and differentiation of embryonal type seminiferous tubules conduce to normalization of structure of the testis.

Destruction and regeneration of seminiferous tubules in mammals resemble the process observed during year cycle in the testis of fishes and urodela.

Zh. Obschch. Biol., 41, 1, 138-49. 1980.

1 table, 3 figs., 44 references.

In Russian with summary in English. Authors summary.

★ EFFECT OF REDUCED LIGHT DAY ON SPERMATOGENESIS
IN YOUNG MINKS.

ВЛИЯНИЕ СОКРАЩЕННОГО СВЕТОВОГО ДНЯ НА СПЕРМАТОГЕНЕЗ
У МОЛОДЫХ САМЦОВ НОРКИ

D.V. Klochkov, Inst. of Cytology and Genetics, Siberian Branch
of the USSR Academy of Sciences, Novosibirsk.

The keeping of young males under the conditions of reduced 8-hour light day of different duration in July-September stimulated the development of gonads. The most effective was keeping for 3 months:

the weight of testes and diameter of seminiferous tubules markedly increased, the spermatogenic cells attained the spermatid stage (whereas in the control animals only spermatogonia and a small number of spermatocytes at the early meiotic prophase could be seen). The keeping for 2 months was less effective: the testes were developed to a lesser extent, the number of spermatocytes was lower, no spermatids were seen. Under the 1 month keeping the acceleration of development of the testes was insignificant.

Ontogenez, 11/1, 91-95, 1980.

3 tables, 15 references.

In Russian with summary in English. Author summary.

★ **ADVANCED IMPLANTATION IN MINK (*MUSTELA VISON*) TREATED
WITH MEDROXYPROGESTERONE ACETATE DURING EARLY
EMBRYONIC DIAPAUSE.**

P. Concannon, T. Pilbeam, H. Travis, Dept. of Physical Biology,
New York State College of Veterinary Medicine, Dept. of Animal
Science, U.S.D.A. Sheep and Fur Animal Experiment Station,
Cornell University, Ithaca, New York 14853, USA.

Adult and pubertal female mink mated on 4 March were administered 2-5 mg medroxyprogesterone acetate (MPA) or control vehicle on 9-11 March. Pregnancies were shorter ($P < 0.01$) in adult (60 ± 2 days) than in pubertal (72 ± 0.7 days control animals). Treatment with MPA reduced ($P < 0.01$) the length of pregnancy in both adult (51 ± 1 days) and pubertal (60 ± 2 days) mink but did not significantly affect serum progesterone levels on 3-4 April. Observations at laparotomy during April confirmed the effects of age and treatment on the time of implantation and suggested that implantation sites become grossly visible 28 days before parturition. It is concluded that administration of a progestagen during early embryonic diapause can advance the time of implantation in mink.

J. Reprod. Fert. 1980, 58, 1-6.

1 table, 2 figs., 21 references.

Authors summary.



PECULIARITIES OF THE NUCLEAR STRUCTURE AND KARYOSPHERE
FORMATION IN THE OOGENESIS OF THE MINK.

ОСОБЕННОСТИ СТРУКТУРЫ ЯДРА
И ФОРМИРОВАНИЯ КАРИОСФЕРЫ В ООГЕНЕЗЕ НОРКИ

I.I. Kiknadze, T.G. Zybina, E.V. Zybina, A.I. Zhelezova, Lab. of General Cytology, and Laboratory of Evolutionary Genetics, Inst. of Cytology and Genetics of the Siberian Branch of the Academy of Sciences of the USSR, Novosibirsk.

Changes in nuclear structures have been followed in oocytes of adult minks, from the primordium follicle stage to the Graaf vesicle stage. The followed dynamics well compared with what has been known for other mammals studied. With the mink oogenesis, an intensive production of nucleolus-like bodies occurs: these may be as many as 100 per nucleus. On later stages of oocyte growth, ring-like extranuclear bodies were found which have not been observed for other mammals. With the mink, karyosphere formation is generally similar to that in other mammalian species examined, being, however, observed a bit earlier than usually, i.e. on the stage of multilayered follicle with the antrum. Due to this fact, the karyosphere, with the mink, persists longer. With the mink, contrary to other species examined, the formation of the karyosphere as a dense Feulgen-positive body is not accompanied with a total disappearance of the nuclear envelope and nucleolus-like bodies.

Tsitologiya, 22, 2, 127-33, 1980.

1 fig. 29 references.

In Russian with summary in English. Authors summary.



★SOME POSSIBILITIES OF POPULATION REGULATION OF MINK FERTILITY.

Yu V. Vagin, Inst. of Molecular Biology and Genetics, Academy of Sciences of the Ukrainian SSR, Kiev.

The results of a comparative estimate of the reproductive capacity of female mink in various genotypes from breeding sections made up only of one-year-old animals and of sections made up of animals of different ages are cited. An attempt was made to relate the detected differences in fertility of one-year-old mink to the different duration of their mating period.

Cytology and Genetics, N.Y., Vol. 14, no.2, 1980. 49-54.

1 table, 7 figs., 22 references.

In English.

Author abstract.



As advertised in Vol. 5, No.3, the subscription price for SCIENTIFUR will go up to Dkr. 250.- per Volume from January 1982.



WET BELLY DISEASE: STILL AN ENIGMA

J.E. Oldfield, N. Wehr and J. Adair, Dept. of Animal Science, Oregon State University, Corvallis, Oregon 97331, U.S.A.



NUTRITION

Wet belly (WB) disease is estimated to have cost U.S. mink ranchers in excess of 2 million dollars annually in recent years. It derives its name from a characteristic urine saturation of the pelt and skin surrounding the urinary orifice and is most common and damaging in male mink. In the past, WB acquired the name "urinary incontinence" suggesting a defect in the normal urination process, but the problem is now known to relate more to the composition of the urine than to the nature of its release. At Oregon State University's Experimental Fur Farm the abdomens of mink were painted with water or urine from normal mink once daily for up to three months without damage to the pelts, while mink painted with WB urine showed typical pelt damage. If urine saturation continues during the period of rapid fur growth, development of fur fibers is retarded. This results in an easily distinguishable, darkened area of melanin granule deposition around the urinary orifice on the leather side of the dried pelts. In severe cases, this unprimed area may be accompanied by axillary stains.

Data on more than 2000 living standard dark male mink and 14,000 pelts have been accumulated in a WB research project at Oregon State University spanning two decades which was sponsored by the Mink Farmer's Research Foundation.

Implications for Bacterial Infection

It was observed that WB symptoms could result from several causes including bacterial infection of the urinary tract. In 1962 blood samples taken in August and November from 260 male mink were tested for antibodies to Proteus mirabilis and Staphylococcus. Washings from the mink's preputial cavities were also examined. Neither test showed a positive relationship between bacterial infection and WB incidence.

Thus bacteria appear not to be the cause

of WB. Proteus and Staphylococcus were involved in urinary tract infections induced by estrogenic compounds, suggesting they are normal inhabitants of the urinary tract. Under conditions existing in Oregon trials the following antibacterial agents were ineffective against WB: Gentamycin (Schering), Mandelamine (Warner-Chilcott), Cleocin (Upjohn) and Dantafur (Eaton).

Mink Size Relationships

WB incidence is greater in heavier males. In 1960 trials WB incidence and December body weight were highly correlated ($r=.92$). Thus fatness appears to be a contributory cause, and this can be related to either quality or quantity of the diet. During the 1960-61 season, 484 dark male mink were fed several diets with fat levels varying from 8.1 to 29.5% and were examined for WB at pelting. The relationship between dietary fat level and WB incidence was strongly positive ($r=.97$). Thus restriction of dietary fat and consequently, energy, if total feed intake is held constant, offers a means of controlling WB. A second means of energy reduction is to decrease the amount of feed given, preferably in October after maximum size is reached. A reduction of 25% normal intake has been found to considerably reduce WB while sacrificing 4% in pelt length (about 1 inch). Negative correlations were found between WB and calcium, phosphorus, total ash and crude fiber. These components might directly inhibit WB or act indirectly by diluting the diet energy content. A wide calcium: phosphorus ratio was associated with greater WB, possibly because excess calcium might react with dietary fat to form soaps which could be excreted in the urine. Such compounds might exert a detergent-like effect on the natural oil on fur fibers. WB mink excrete a lower volume of more viscous urine than normal animals. To attack WB by increasing urine output, in 1971 mink were fed 0, 1.25, and 1.50% salt (sodium chloride). The effect of salt on WB was marginal. Salt supplementation studies in 1976 and 1978 provided similar data.

Genetic Implications

WB heritability studies were begun after preliminary observations showed

consistent differences in WB incidence among three color phases (dark, sapphire, and pastel) at the OSU Experimental Fur Farm. Two groups with high or low resistance to WB were selected and fed identical diets. The WB-susceptible group showed a WB incidence of 92.9%, the resistant group, 33%. In exchange experiments, 20 dark males were obtained from Utah and Idaho breeders. Half were fed the Utah diet and half the OSU diet. One animal developed slight WB, indicating the minimal effect of environment, particularly humidity, upon WB. In a second exchange experiment the genetic factor was held constant while diet and location were varied. Fifteen kit male OSU dark mink were sent to Wisconsin and fed the Wisconsin diet until pelting, while 15 littermates were kept at OSU on the standard diet. Low WB incidence (7%) in animals raised in Wisconsin was accompanied by a 5% size reduction, supporting the concept that excess feeding is WB causative.

Incidental Influences

Several incidental factors appear to be associated with WB. Some feed ingredients which had been reported by mink ranchers to decrease WB, were tested at OSU. Ten percent cane molasses, 2% concentrated lemon juice, ascorbic acid and methionine were ineffective in WB control. Examining the effects of certain management practices complicated the situation: WB was lower in mink raised in light-controlled (reduced light) pens, perhaps associated with the animals' smaller size. Male mink raised in individual pens showed less WB than those pair-caged with females (25% vs. 56%) in a four-year study with 496 animals.

WB in mink is a complex condition arising from several causes rather than a single one. An underlying genetic involvement apparently determines which strains or individual animals will be susceptible to the condition, and then environmental factors, particularly nutritional, seem to govern the extent of WB occurrence. Overall feed intake seems to be a dominant factor. Careful selection away from breeders involved with WB disease and dietary restriction of pelted mink during the late stages of winter furring is recommended.

Blue Book of Fur Farming 1981, pp 63-66.

3 tables, 4 figs.

Authors summary



COMPARATIVE BIOCHEMICAL PROFILES IN BLOOD AND URINE
OF TWO STRAINS OF MINK AND CHANGES ASSOCIATED WITH
THE INCIDENCE OF WET BELLY DISEASE.

J.L. Sorfleet, E.R. Chavez*, *Dept. of Animal Science, MacDonald
College, Ste. Anne de Bellevue, P.Q., Canada H9X 1C0.

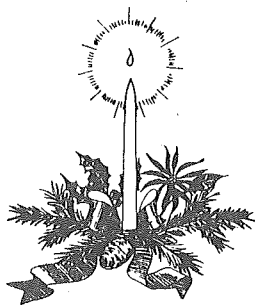
The blood and urine biochemical profiles of two color strains of mink, Demi-Buff and Pastel, were studied. Changes associated with the incidence of wet belly disease in some of them were determined by comparison with unaffected animals. Chloride and potassium were the only blood parameters significantly different between these two strains of mink. In blood, P (Osub 2) was the only significant difference detected between wet belly affected and unaffected mink. Pastel mink excreted significantly more potassium and nitrogen in the daily urine excretion that did the Demi-Buff strain. The most significant findings were observed in the urine of mink affected with wet belly disease when compared with unaffected animals. Twenty-four hour urine excretion volume was significantly reduced in mink with wet belly disease. Chloride, ammonia, and net acid were significantly higher than normal in the urine of mink with wet belly disease.

Can. J. Physiol. Pharmacol. Vol. 58, 1980, 499-503.

5 tables, 19 references.

In English with summaries in English and French.

Authors summary.





BIOTIN DEFICIENCY IN MINK FED SPRAY-DRIED EGGS

N.B. Wehr, J. Adair and J.E. Oldfield

Dept. of Animal Science, Oregon State University, Corvallis, Oregon 97331 U.S.A.

Young standard dark mink developed classical symptoms of biotin deficiency, including underfur-greying, "spectacle eye," loss of fur, exudates from eyes, nose and mouth and encrustation of paws, when fed a diet containing 10% commercially produced, denatured spray-dried eggs. Comparable animals fed 5% spray dried eggs did not show these symptoms; however, their pelts tended to be browner (i.e., lighter colored), than those of control animals. The feeding period during which these symptoms developed covered about 4½ months: August 1 to December 13. Supplemental biotin (1.34 and 1.45 mg d-biotin per kilogram dry feed) prevented deficiency symptoms in mink fed 10% spray-dried egg or 20% fresh frozen whole chicken eggs, respectively. Eye exudates were most severe in October, when the combined stress of body and fur growth was greatest, then showed a partial remission as peak growth of body tissue and fur was passed. It was concluded that spray-dried eggs are insufficiently heat-treated to render their avidin content inactive; thus they should be appropriately supplemented with biotin for use in mink diets.

Journal of Animal Science, Vol. 50, No. 5, 1980, pp 877-885.

5 tables, 2 figs, 26 references.

Authors summary



I am feeling like a scientist
who has to be happy of small things.



VITAMIN B1 DEFICIT IN PREGNANT MINK.

(Vitamin B1-Mangel bei tragenden Nerzfühen).

H. Zimmermann, DDR- 2200 Greifswald, Peterhagen-Allee 1.

Vitamin B1 deficit in pregnant minks led to high embryonic mortality and, consequently, grave loss. Investigations on a mink farm showed that feeding of raw thiaminase-containing fish during pregnancy had caused loss of litter by the order of 78 per cent. Remaining litter size was as low as 0.84 young to each pregnant female.

Mh. Vet. Med. 36, 1981, 508-511.

2 tables, 2 figs., 13 references.

In German with summaries in German, Russian, and English.

Author summary.

VARIATION OF ENERGY BALANCE IN MALE ADULT MINK
FEED FREELY AROUND THE YEAR.

G. Charlet-Lery, M. Fiszlewicz, M.T. Morel, Lab. Physiologie de la Nutrition, INRA, F-78350 Jouy-en-Josas, France.

The weight of 14 adult male Pastel minks always fed the same pelleted feed ad libitum varies systematically from maximum values before mating in February to minimum values in August. In spite of feed intake variations, the 44 balances and the 13 heat productions did not show variations in digestibility and metabolizability, retained N as retained energy depended highly on ME. Requirement for maintenance were $155.8 \text{ kcal/W}_{\text{kg}}^{.75}$ in experimental conditions, 191.6 in farm conditions. Minks seem to adjust their feed intake to its requirements and there could be only a slight variation in feed utilization.

Proceedings from 32nd Annual Meeting of the European Association for Animal Production, 31. August - 3. September 1981. V-36.

1 fig., 4 reference, 5 pp.

In English with summaries in English, French, and German.

Authors summary.



THE ENERGY SUPPLY OF MINK.

(Energiforsyningen til mink).

V. Weiss, Research Farm West, Herningvej 112, DK-7500 Holstebro.

The metabolization of protein, fat, and carbohydrate as well as the qualitative and quantitative metabolization of energy by the mink (*Mustela vison*) are described. The requirement for metabolizable energy (ME) is described in the four periods of production. The ME-requirement of the female mink in the gestation period and the lactating period is illustrated from investigations mentioned in the literature. Finally, the ME-utilization of mink kits for growth is discussed by means of experiments.

The conclusion is that the ME-requirement for maintenance in the adult mink is $130 \text{ kcal/kg}^{0.75}$ /day in the thermoneutral zone of the mink. The ME-requirement for mink kits is determined with a greater uncertainty, and can not be calculated accurately until further investigations are made. The ME-requirement for the female mink in the gestation period is in the first part of the period not greater than the requirement for maintenance, but in the later part of the gestation period the requirement is increasing, and by the conclusion of this period it is about 50 per cent greater than the requirement for maintenance. The ME-requirement of the female mink is further increasing throughout the lactation period depending on the litter size.

The energy value of 1 gram of digestible crude protein is discussed, and it seems to be certain that in the early growth period we have to calculate with a greater value than the value of 4.5 kcal ME/gram digestible crude protein mentioned in the literature.

The utilization of ME for growth in the mink kits is varying very much, and therefore, further experiments must be made before the utilization can be determined exactly.

26 tables, 10 figs., 48 references. Author summary.
Stenciled report, 56 pages. July 1981. In Danish.

A graduate project made at The Royal Veterinary and Agricultural University, Dept. of Animal Nutrition, Bülowsvej 13, DK-1870 Copenhagen V.



PREVENTION OF OTOLITH DEFECT IN PASTEL MINK
BY MANGANESE SUPPLEMENTATION.

Lawrence C. Erway, Sidney E. Mitchell, Dept. of Biological Science,
University of Cincinnati, Cincinnati, Ohio 45221, USA.

Among pastel mink, bred extensively for their rich brown fur, upwards of 25 per cent of the homozygotes exhibit a peculiar "screw neck" behaviour. Selection against the abnormal behavior appears to have reduced the incidence to less than 10 per cent in most pastel herds today. Having reduced it only slowly, longtime breeders are reluctant to outcross their pastel stocks even for purposes of gaining other qualities, presumably because of recurrence of the high incidence of screw neck.

A series of studies is described to explain the screw neck behavior and to demonstrate how it can be prevented by manganese supplementation during embryonic development. A swimming test was devised to detect pastel mink with balance problems involving the inner ear. Reduction or absence of otoliths, gravity receptors responsible for maintenance of equilibrium, appear to be the primary basis for the screw neck syndrome. The swimming defects, together with the screw neck, can be prevented entirely by appropriate manganese supplementation. There is a concomitant and significant improvement in otolith development. Serious attention was given to demonstrating that manganese supplementation has no deleterious effects on reproductivity, even suggesting the possibility of improving litter size. Some practical questions are raised and should be answered before recommendations can be made for a full scale application of these findings to the pastel mink breeding industry.

These findings complement earlier investigations in pallid mutant mice and contribute to the growing understanding of a class of pigment mutations that involve manganese, pigment, and otoliths of the inner ear.

The Journ. of Heredity, 1973, 64, 111-119.

4 tables, 2 figs., 20 references.

In English.

Authors summary.



DIAGNOSIS OF NaCl POISONINGS IN THE COYPU.

(Diagnostyka zatruc chlorkiem sodu u nutrii).

Wolciech Kochowicz, *Jerzy Kulczycki, Arnold Waśniewski, Z Zakładu Higieny Weterynaryjnej w Bydgoszczy, Z Wojewódzkiej Specjalistycznej Lecznicy dla Zwierząt w Bydgoszczy, Poland.

*) Adres: ul. Zwierczewskiego 35, 85-224 Bydgoszcz, Poland.

The examinations were carried out on 42 normal animals which had been given NaCl in a dose of 0.5, 1.0, 1.5, 2.0, and 3.0 g/kg of body weight. The signs of a disease appeared following the dose of 1.5 g of NaCl per 1 kg of body weight. Sodium chloride in a dose of 2.0 g was lethal (DL-100). Clinical signs and anatomopathological lesions were like NaCl intoxications observed in other animals. Diagnosis of poisonings with NaCl in the coypu is possible on the strength of chemical examinations of the solution prepared from the liver, kidney and small intestines.

Medycyna Weterynaryjna, 36, 7, 430-32, 1980.

1 table, 6 references,

In Polish with summaries in Polish, Russian, and English.

Authors summary.



CHEMICAL DIAGNOSTICS OF SODIUM CHLORIDE POISONING IN THOROUGHbred FUR-BEARING ANIMALS (FOX, COYPU) AND IN TURKEY AND PHEASANTS.

(Chemická diagnostika otráv chloridom sodným u uslachtilych kozusinových zvierat (lisky, nutrie) a u moriek a bazantov).

P. Káčmár, A. Samo, J. Knezik, Vysoká škola veterinárska, Komenského 73, 041 81 Kosice, Czechoslovakia.

For laboratory diagnosis of sodium chloride poisoning, the concentration of chlorides was polarographically determined in the liver of minks (seven-month-old and older), polar and silver foxes

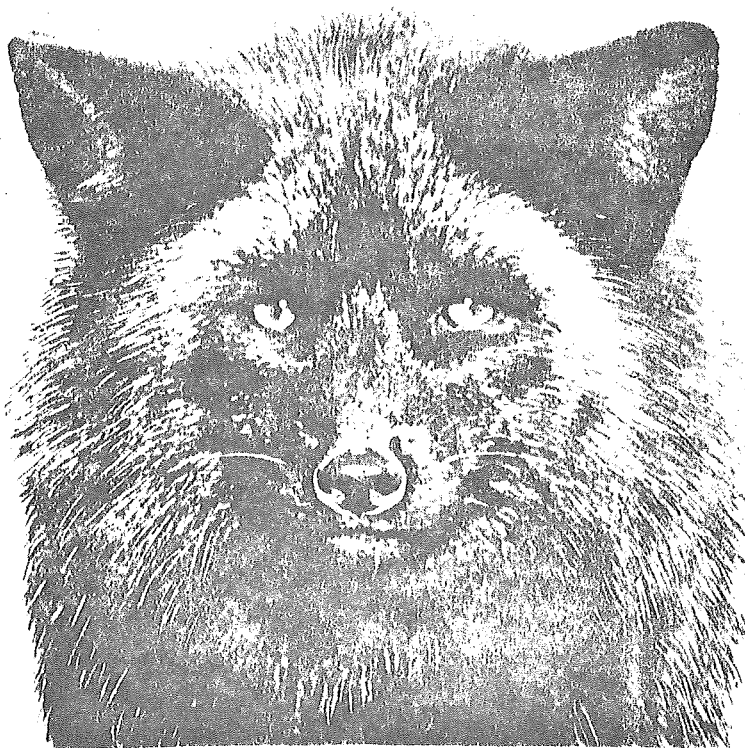
(eight-month-old and older), coypus (nine to ten month old), turkeys (three-month-old), and pheasants. The physiological concentration of sodium chloride in the liver of mink ($n = 32$) is 2.47 to 3.64 g kg⁻¹, polar foxes ($n = 30$) 2.46 to 4.23 g kg⁻¹, silver foxes ($n = 3$) 3.27 to 3.44 g kg⁻¹, coypu ($n = 23$) 1.79 to 3.05 g kg⁻¹, turkeys ($n = 30$) 1.0 to 2.1 g kg⁻¹, and pheasants ($n = 28$) 0.95 to 2.37 g kg⁻¹. The exposure of the organism of a pheasant to single lethal doses of common salt (3.4 and 5 g NaCl per kg l.w.) resulted in 2.5- to 6-fold increase of salt concentration in liver, as compared with physiological concentration. A decreased concentration of sodium chloride (lower than the physiological standard) was found in the liver of deceased lactating mink.

Veterinární Medicina, 25, (LIII) 1980, 12, 733-738.

1 table, 3 figs., 14 references.

In Czechoslovakian with summaries in Russian, German, and English.

Authors summary.





THE DIET OF THE FERAL MINK (*MUSTELA VISON*) IN
SOUTHWEST BRITAIN.

P.R.F. Chanin, Ian Linn, Dept. of Extra Mural Studies, Univ. of Exeter, Gandy Street, Exeter EX4 3LZ, England.

The diet of mink was studied by the collection and analysis of faeces from three study areas in southwest Britain: an oligotrophic moorland stream - the river Teign; a chalk stream - the river Frome; an eutrophic lake - Slapton Ley. In these areas, the mink has a catholic diet consisting mainly of fish, birds and mammals, the proportions of which are determined largely by the availability of prey species in each area. The proportion of each species in the diet may also be affected by other factors such as prey behaviour (swimming speed, dispersal in juveniles); the physical nature of the habitat (which may in turn influence habitat utilization and hunting behaviour); and overall prey abundance (at Slapton Ley high availability of aquatic and waterside prey was considered to have reduced the predation on terrestrial species).

Seasonal variation was demonstrated in predation on Moorhens and fish on the Frome. Fish are more vulnerable in winter when they are slower moving, and Moorhen predation increased at the time of juvenile dispersal. A curious bimodal seasonal variation in eel predation on the Teign can be seen but cannot be fully explained.

A study of the rod and net fishing records from the Teign shows that no changes can be correlated with the arrival of the mink. Changes in fish populations at Slapton Ley discovered by recent researchers cannot be linked with the presence of mink either.

It is concluded that the damage attributed to mink has been exaggerated and that the main prey species of mink are able to coexist with the animals in the areas that were studied.

THE DIET OF FERAL MINK

TABLE II

The percentage frequency of each type of prey in the diet of mink on each of the study areas

Type of Prey	R. Teign	Slapton Ley	R. Frome
*Salmonid	34.2	1.4	4.9
Eel (<i>Anguilla anguilla</i>)	16.8	26.4	7.7
*Cyprinid	—	8.3	6.0
Pike (<i>Esox lucius</i>)	—	—	1.1
Grayling (<i>Thymallus thymallus</i>)	—	—	1.6
Stickleback (<i>Gasterosteus aculeatus</i>)	—	8.3	—
Perch (<i>Perca fluviatilis</i>)	—	5.6	—
Loach (<i>Noemacheilus barbatula</i>)	2.5	—	1.1
Unidentifiable	0.4	2.8	12.0
Total fish	53.9	52.8	34.4
*Ralliform	—	15.3	16.4
*Anseriform	0.7	5.6	4.4
*Passeriform	3.8	1.4	1.1
*Columbiform	4.1	—	0.5
*Galliform	0.7	—	0.5
*Strigiform	0.2	—	—
Unidentifiable	1.3	6.9	0.5
Total bird	10.8	29.2	23.5
Mole (<i>Talpa europaea</i>)	2.7	—	3.8
*Shrew	3.6	1.4	0.5
*Lagomorph	6.3	9.7	0.5
Bank vole (<i>Clethrionomys glareolus</i>)	4.3	1.4	1.6
Field vole (<i>Microtus agrestis</i>)	2.9	—	10.9
*Wood mouse (<i>Apodemus sylvaticus</i>)	3.8	—	0.5
Harvest mouse (<i>Micromys minutus</i>)	0.4	—	—
Dormouse (<i>Muscardinus avellanarius</i>)	0.5	—	—
*Grey squirrel (<i>Sciurus carolinensis</i>)	0.4	—	1.1
*Common rat (<i>Rattus norvegicus</i>)	3.8	2.8	7.7
Water vole (<i>Arvicola terrestris</i>)	—	—	3.3
*Weasel (<i>Mustela nivalis</i>)	0.2	—	0.5
Unidentifiable	0.4	—	—
Total mammal	29.2	15.3	30.6
*Amphibia	2.7	—	0.5
*Snake	—	—	0.5
*Earthworm	1.6	1.4	7.7
*Beetle	0.9	—	1.6
Crayfish (<i>Austropotamobius pallipes</i>)	—	—	1.1
*Vegetation	—	1.4	—
Unidentifiable	0.9	—	—
Total number of items found	555	72	183
Total number of scats	475	57	153

Identification of prey is according to the limitations of the methods of scat analysis. For items marked * see Appendix (p. 222). Discrepancies in totals are due to the approximations made in calculating percentages to one decimal place only.

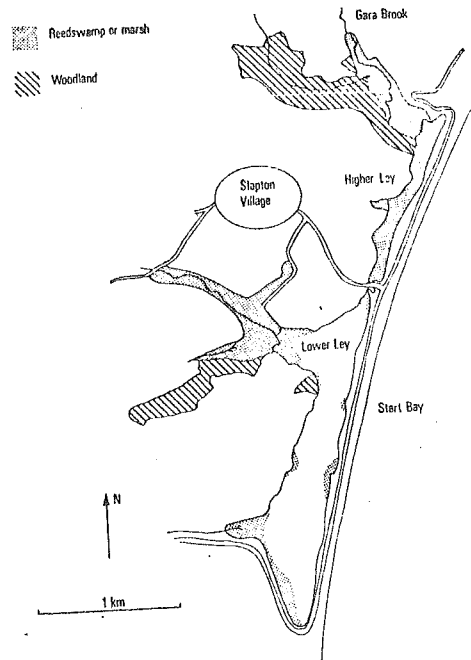


FIG. 1. Map of Slapton Ley and its environs.

J. Zool., Lond., (1980), 192, 205-223.

2 tables. 3 figs., 53 references.

In English.

Authors summary.



**EFFECT OF HOMOGENATES OF DIFFERENT FISH SPECIES ON THE
DEGRADATION OF THIAMINE IN FEEDS FOR MINKS.**

(Wpływ miazgi z różnych gatunków ryb na rozkład
witaminy B1 w karmie dla norek).

Grażyna Jeżewska, Zakład Genetyki i Hodowli Zwierząt Drobnych
AR, Lublin, Poland.

The contents of vitamin B1 and the rates of its degradation were estimated in 7 species of fishes: bream, roach, Alaska pollack, Baltic herring, Baltic sprat, cod and mackerel, and in the calamary. The estimations were made separately on homogenated whole fishes, heads, gutted fishes with or without heads, viscera and on mink feed containing fish.

Samples of the fishes and calamary and of mink feed were homogenized in aqueous solution of vitamin B1: the amount of added vitamin B1 was 1.8 $\mu\text{g}/\text{ml}$ homogenate. Thiamine was estimated immediately after homogenization and 1, 2 and 3 hours thereafter. Estimation of the presence and activity of the enzyme thiaminase was based on the loss of thiamine in the homogenates. The highest activity of thiaminase was in all samples of the herring, bream and sprat, while in the roach and Alaska pollack only in homogenates of the viscera.

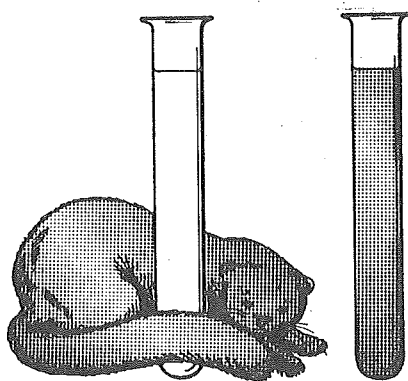
The rate of thiamine degradation was highest immediately after adding it to the fish homogenates and then gradually declined. The degradation rate of thiamine in mink feed depended on the proportion of fish in the feed: the proportion of beam or herring was 50 or 70 per cent. During storage of fishes at -12°C for 6 months there was a gradual decrease of thiaminase activity, more rapid in minced than in whole fishes.

Roczniki Nauk Rolniczych 1979, B-100-1.

1 fig., 6 tables, 15 references.

In Polish with subtitles in English. Summaries in English and Russian.

Author's summary.



★ AN ATTEMPT AT EVALUATION OF IRON METABOLISM IN THE BLUE FOX
(ALOPEX LAGOPUS) IN THE LIGHT OF EXPERIMENTS WITH FERRODEX
PREPARATION.

(Próba oceny gospodarki żelazowej u lisów polarnych
(piesaków - Alopex lagopus) w świetle doświadczeń ze
stosowaniem preparatu Ferrodex).

Stanislaw Grzebula, Instytut Chorób Niezakaźnych Wydziału
Weterynaryjnego AR w Lublinie, Poland.

The investigation aimed at an evaluation of iron metabolism in blue fox females during their pregnancy and in their litter during the period of growth.

In the course of the first part of the investigations observations concerned the effect of Ferrodex injections in pregnant females on the level of plasma iron, TIBC plasma (the total iron-binding capacity of plasma proteins), plasma copper, ceruloplasmin activity, number of erythrocytes, Hb (hemoglobin) level, Ht (hematocrite) level, as well as MCV (mean corpuscular volume) and MCHC (mean corpuscular hemoglobin concentration) values. Data concerning the number and weight of the litter has also been gathered.

It was found that the preparation had diminished the intensity of drop in concentration of plasma Fe and Hb level in the blood and that it completely stopped the drop of ISI (iron saturation index) and MCHC values in females during the second half of pregnancy. The litter of those females which were given the preparation was on the average by ca. 26 per cent heavier than the litter of the control females. The mean number of litter was similar in both groups.

The second part of the investigation consisted in analyzing the effect of Ferrodex - administered both to pregnant females and

to puppies on the seventh day after birth - on the formation of the index values of the corpuscular system (number of erythrocytes, Hb, Ht, MCV, MCHC) and on the increase of the body weight of the puppies during their period of growth.

In the fourth week after birth the testing puppies showed significantly higher values: Hb, Ht, and MCHC in relation to the control puppies. Moreover, the testing puppies had a significant advantage in body weight. Changes in blood composition and body weight caused by the injection of the preparation in puppies during the period of suction were greater and lasted much longer than the corresponding changes caused by the injection of the preparation in pregnant females. Among those puppies which were not given Ferrodex several cases of the normocytic hypochromic anaemia were found.

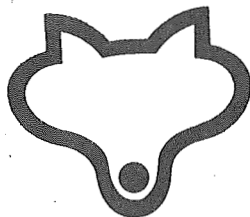
On the basis of the results obtained the author concludes that iron deficiency occurs in the blue fox females in the second half of pregnancy and in the puppies - at the end of the period of sucking.

Annales Universitatis Mariae Curie - Sklodowska Sectio DD
Medicina Veterinaria 1975, vol. XXX, 123-143.

8 tables, 32 references.

In Polish with summaries in English and Russian.

Author's summary





VETERINARY

★ **EVALUATION OF CHEMICAL DISINFECTANTS FOR ALEUTIAN DISEASE
VIRUS OF MINK.**

D.T. Shen, L.W. Leendertsen, J.R. Gorham, Science and Education Administration, US Dept. of Agriculture and Dept. of Vet. Microbiology and Pathology, Washington State University, Pullman, WA 99164, USA.

Nine chemicals and commercial disinfectants were tested for inactivation of Aleutian disease virus of mink. In the presence of distilled water, a commercial disinfectant (O-Syl), halogen derivatives (iodophor and sodium hypochlorite), and glutaraldehyde (2.0%) inactivated 4 log₁₀ (based on 0.25ml) of the virus within 10 minutes at 23 C. Formalin (2.0%) and O-Syl were slower to inactivate the virus, but achieved a 4 log₁₀ reduction in titer by 30 minutes' contact time. In the presence of 10% bovine serum, formalin (1.0%), O-Syl, and sodium hydroxide (0.5%) achieved a 4 log₁₀ reduction within 10 minutes. All agents tested had some virucidal effect.

American Journal of Veterinary Research, Vol. 42, no.5, 838-840.
2 tables, 11 references.

Authors summary.

★ **THE PRIMARY STRUCTURE OF AMYLOID FIBRIL PROTEIN AA
IN ENDOTOXIN-INDUCED AMYLOIDOSIS OF THE MINK.**

Kristian Waalen, Knut Sletten, Gunnar Husby, Knut Nordstoga, Biokjemisk institutt, Universitetet i Oslo, Postboks 1041, Blindern, Oslo 3, Norway.

Two AA proteins were isolated from the same amyloid fibril preparation from the liver of a mink, in which amyloidosis had been induced by injections with endotoxin. The two proteins were of different size, one containing 53 amino acid residues and the other 64 residues. The amino acid sequence was otherwise found to be identical. Both proteins revealed pyrrolidone carboxylic acid as the N-terminal amino acid. Sequence homologies with protein AA from other species were very striking. However, no anti-

genic cross-reaction was seen between mink protein AA and antisera to protein AA from human, mouse or rabbit sources.

Eur. J. Biochem, 104, 407-412, 1980.

1 table, 6 figs., 26 references.

Authors summary.

★ **AN EVALUATION OF THE ARACHIDONATE PATHWAY OF PLATELETS FROM COMPANION AND FOOD-PRODUCING ANIMALS, MINK, AND MAN.**

K.M. Meyers, J.B. Katz, R.M. Clemmons, J.B. Smith, H. Holmsen, Dept. of VCAPP, Washington State University, Pullman, WA 99164, USA.

The arachidonate pathway of human, feline, canine, equine, mink, porcine, and bovine platelets was evaluated by determining the formation of arachidonate-induced malondialdehyde (MDA), thrombin-induced MDA and thrombin-induced thromboxane (Tx) B₂. In addition, arachidonate-induced platelet aggregation responses were monitored. Arachidonate activated platelets from every animal species evaluated and induced formation of TxB₂ and MDA. There were, however, considerable species differences in the importance of the pathway in mediating the basic platelet reaction. Platelets from mink, pigs, and cows did not aggregate to arachidonate (0.5 mM) and in response to thrombin produced less than 0.5 nmoles of MDA/3 x 10⁸ platelets and less than 10 nmoles of TxB₂/10¹¹ platelets. Human platelets had a well-developed arachidonate pathway, as they formed more than 1.0 nmoles of MDA/3 x 10⁸ platelets and more than 50 nmoles of TxB₂/10¹¹.

Thrombosis Research 20, 13-24, 1980.

5 figs., 34 references.

Authors abstract.





**TRYPTIC PEPTIDE COMPOSITION OF HAEMOGLOBIN FROM MINK
(MUSTELA VISON) AND HYENA (HYAENAE HYAENAE) AND THE
 α -CHAIN OF COATIMUNDI (NASUA NASUA).**

B. Brimhall, Kenneth Stangland, R.T. Jones, Robert R. Becker, Thomas J. Bailey, Dept. of Biochemistry, School of Medicine, University of Oregon Health Sciences Center, Portland, Oregon 97201, USA.

The amino acid composition of the tryptic peptides from hyena hemoglobin, two hemoglobins of the mink and the α -chain of coatimundi have been determined, allowing comparison with data previously obtained from other carnivores. The two hemoglobins of mink differ at only one amino acid residue, α 15, which is glycyl in one hemoglobin and aspartyl in the other.

Hemoglobin, 3 (4), 271-292, 1979.

9 tables, 1 fig. , 20 references.

Authors abstract.



**PROLONGED BLEEDING TIME IN ALEUTIAN MINK ASSOCIATED
WITH A CYCLO-OXYGENASE-INDEPENDENT AGGREGATION DEFECT
AND NUCLEOTIDE DEFICIT IN BLOOD PLATELETS.**

Thomas G. Bell, George A. Padgett, Wayne R. Petterson, Kenneth M. Meyers, John R. Gorham, Dept. of Pathology, Coll. of Vet.Med. Michigan State University, East Lansing, MI 48824, USA.

A prolonged mean template bleeding time of 13 minutes was present in nine Aleutian mink affected with Chediak-Higashi syndrome (CHS) compared with 4 minutes in dark control mink. The concentrations of blood platelets in normal and affected animals did not differ significantly. However, in mink with CHS, a marked disturbance of platelet response to collagen was present. Administration of aspirin and indomethacin completely blocked CH platelet response to collagen. Blood platelet adenosine triphosphate and adenosine diphosphate values from mink with

CHS were significantly less than those of normal mink, and the platelet adenosine triphosphate|adenosin diphosphate ratios were 10.31 in affected mink and 2.74 in normal mink. These findings are consistent with our previous investigations in affected cattle and persons and indicate that a "storage pool disease" of platelets exist in the mink with CHS.

Am.J.Vet.Res. Vol. 41, No.6, 1980.

2 tables, 6 figs., 23 references.

In English.

Authors summary.



**ACTIVITY OF LEVAMISOLE HYDROCHLORIDE AGAINST
DEPETALONEMA RECONDITUM-LIKE MICROFILARIA IN BAT-EARED FOXES.**

Philip K. Ensley, Donald L. Janssen, Jennings Center for Zoological
Medicine, San Diego, CA 92112, USA.

Two of 3 bat-eared foxes (*Otocyon megalotis*) were found to have microfilariae on routine examination. Heartworm infection (*Dirofilaria immitis*) was suspected because right-sided heart enlargement was demonstrated radiographically in one of the infected foxes. The microfilariae had "snakelike" motions without forward progression in fresh blood smears. *Dirofilaria immitis* infection has been documented in wild canids, including red (*Vulpes fulva*) and gray foxes (*Urocyon cinereoargenteus*).

After 2 weeks, oral treatment with levamisole hydrochloride at the rate of 5 mg/kg of body weight for 10 days was begun for all 3 foxes. Samples of blood taken at 1 and 17 weeks after therapy were negative for microfilariae, using the modified Knott technique.

Levamisole has been documented as an effective simultaneous microfilaricide and adulticide in canine heartworm disease. However, several investigators have demonstrated variable results of the drug's microfilaricidal and adulticidal activity against *D immitis*.

Side reactions in canids given the drug at a dosage greater than 5 mg/lb have been noted. In addition, histopathologic changes in the liver and central nervous system have been reported in dogs treated with levamisole.

The levamisole was easily administered to the foxes. Microfilaricidal activity against *D. immitis*-like microfilariae was noticed and there were no visible side effects. Inasmuch as these foxes did not have *D. immitis* infection, it cannot be assumed that levamisole would be the preferred drug for treatment of heartworms in foxes.

Journ. of the American Vet. med. Ass., Vol. 177, 9, 913-914, 1980.
1 fig., 8 references. Abstract: G. Jørgensen.



**CONTRIBUTION TO HEPATOZOONOSIS IN MUSTELIDS.
PATHOMORPHOLOGIC FINDINGS.**

(Zur Pathomorphologie einer Hepatozoon-Infektion bei Musteliden).

O. Geisel, H.-Krampitz, A. Posfischil, Veterinärstrasse 13, D-8000 München 22.

In this paper an infection with *Hepatozoon* sp. in stone martens (*Martes fiona*), pine martens (*Martes martes*), and weasels (*Mustela erminea*) is reported. These wild animals were sent from all areas of Bavaria for post mortem examination. Parasites mainly occur in the myocardium (56%), skeletal muscle and tongue (each about 25%), rarely in other organs. Host organism reacts with a circumscribed granulomatous inflammation. In these granulomas regularly numerous merozoites are to be found, and sometimes schizonts. Parasites are deposited within macrophages. Merozoites can also be situated extracellularly. In blood smears merozoites in monocytes and free gametozoites can be detected. Granulomas are composed of macrophages, few lymphocytes and plasmacells, and rarely eosinophilic granulocytes. Sometimes necrosis of granulomas and parasites is to be observed. In our cases there is no evidence for any nosological significance of these parasites.

Berl. Münch. Tierärztl. Wschr. 92, 421-425, 1979. Authors summary.
1 table, 8 photos, 16 references. In German with summary in English.

★ **ATTEMPTED INFECTION OF MUSTELIDS WITH OVINE SARCOCYSTIS SPECIES.**

S. Moore, Wallaceville Animal Research Centre, Ministry of
Agriculture and Fisheries, Private Bag, Upper Hutt, New
Zealand.

Two morphologically distinct *Sarcocystis* spp. macrocysts ("thin" and "fat") may be found in many of the striated muscles of sheep in New Zealand. In Australia, sheep have been shown to be infected by sporocysts derived from cats after they had eaten "fat" macrocyst-infected sheep-meat. Recent work in Germany has shown that a macroscopic sarcocyst of mice can be transmitted to other mice by both ferrets and cats. Since mustelids have been observed to eat from dead sheep in New Zealand. 10 ferrets, 7 stoats, and a weasel were used fed macro- and microcyst infected sheep-meat to determine whether they could be infected with any species of sheep sarcocyst. Although coccidia were found before and after the experimental feedings, at no stage were *Sarcocystis*-like coccidia found.

The findings indicate that mustelids are unlikely to be important vectors of ovine *Sarcocystis* spp., but their possible involvement cannot be excluded on this evidence alone.

N.Z. Journal of Zoology, 1980, Vol.7.

Author's summary.





TUBERCULOSIS IN FENNIC FOXES.

Elmer M.Himes, Donald W. Luchsinger, Jerald L. Jarnagin,
Charles O. Thoen, Howell B. Hood, David A. Ferrin, General Patho-
logy and Parasitology Section, Natl. Vet. Serv. Labs., Anim.
and Plant Health Inspection Service, US Dept. of Agric.,
Ames, IA 50010, USA.

Fennec foxes (*Fennecus zerda*) in 2 zoos were found on necropsy to have lesions typical of those found in canine tuberculosis. Histologic examination revealed numerous acid-fast bacilli in lesions of liver, portal lymph node, kidney, and lung. *Mycobacterium bovis* isolated from tissues was identified by biochemical methods and by pathogenicity tests in guinea pigs and rabbits.

Journ. of the Amer. Vet. Med. Ass., Vol. 177, no.9, 825-826.

1 fig., 17 references.

In English.

Authors summary.

★ **URSICOPTES PROCYONI SPEC. NOV. (AGARI:ASTIGMATA:AUDYCOPTIDAE)
FROM THE RACCOON, PROCYON LOTOR, IN U.S.A.**

A. Fain, N. Wilson, Inst. of Tropical Medicine, 155 Nationale-
straat, B 2000 Altwerp, Belgium.

We describe here a new species found in debris brushed from the fur of Raccoons, *Procyon lotor* (Linnaeus), from Iowa, U.S.A.

Ursicoples procyoni spec. nov. is described from *Procyon lotor* in U.S.A. The male of the genus *Ursicoples* is described for the first time. ---

Ursicoples americanus Fain and Johnston, 1970 was the only species known in the genus. It was described from the Black Bear, *Ursus (Euarctos) americanus* Pallas, from North America. Recently this species had been found on the Polar Bear, *Ursus*

(= *Tharlarctos*) *maritimus* Phipps. The mites had produced a skin disease with damage to the fur (Nickel et al. 1974).

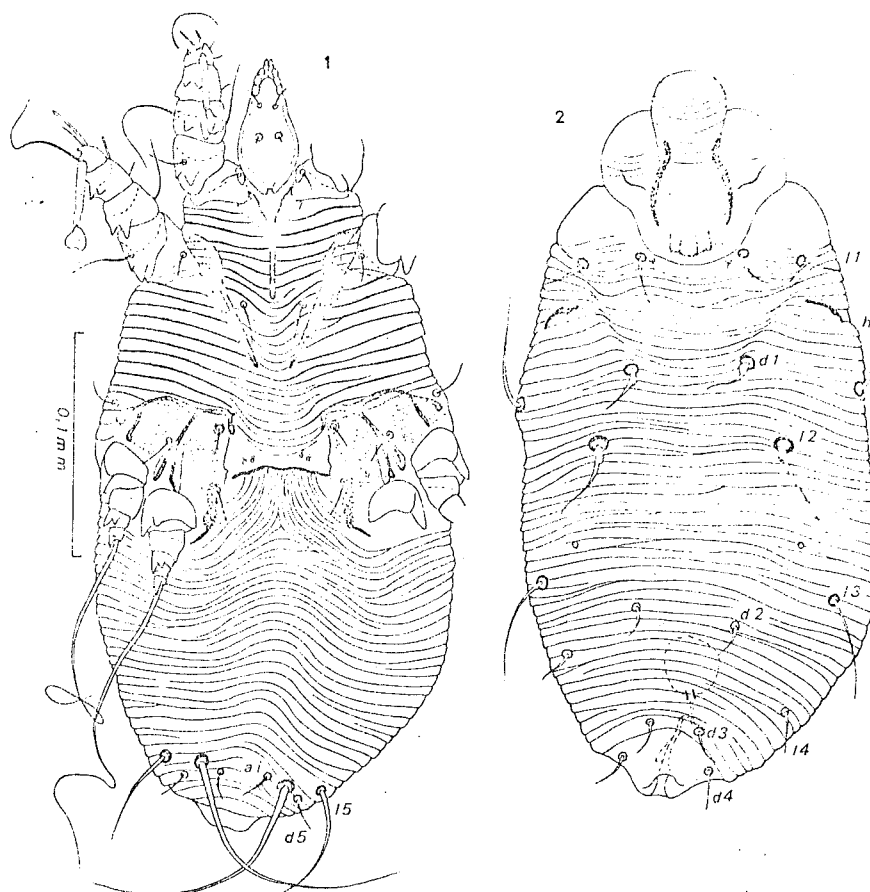
Intl. J. Acar., Vol. 5, no.4., 351-354, 1979.

4 figs., 2 references.

In English.

Authors abstract.

Fain & Wilson



Figs. 1-2: *Uрсicoptes procyoni* sp. n.—1, Venter of holotype female; 2, Dorsum of holotype female.

Posterior legs larger than in female, ending in long, stout slightly curved claw-like prolongation. Tarsi III-IV with very long and strong seta. Tibiae III-IV bearing strong bifid spine. Tibia IV solenidion much stronger and longer than tibia III solenidion.

NYMPH (3 specimens)—Length of idiosoma 256-352 μ m, width 134-186 μ m. DORSUM—As in female. VENTER—As in female except lacking genital slit. Legs as in female but trochanters IV with strong triangular internal projection. Setae *a* and *d* 5 much shorter.

★ SUPPRESSION OF MATURATION OF DIROFILARIA IMMITIS IN
MUSTELA PUTORIUS FURO BY SINGLE DOSE OF IVERMECTIN.

L.S. Blair, W.C. Campbell, Merck Institute for Therapeutic
Research, Rahway, New Jersey 07065, USA.

In a previous study, avermectin Bla was shown to suppress ma-
turation of *Dirofilaria immitis* in ferrets, when given as a
series of five daily treatments, beginning approximately 1 mo
after inoculation.

The present study was designed to establish the minimum dosage
of ivermectin that would be effective when given as a single
oral dose.

Treatment consisted of a single oral dose, on day 30 of infec-
tion, and the dosages used were 0.2, 0.05, and 0.0125 mg/kg.

The ferrets were killed 166 days after treatment, that is, when
the infection was approximately 6 mo old. The lungs and heart
were removed and examined for worms.

It is evident that maturation of *D. immitis* in the heart and
associated vessels of ferrets was suppressed totally by a
single treatment at 0.2 or 0.05 mg/kg, and that a marked effect
was produced even by a dosage of 0.0125 mg/kg.

The present findings add further evidence that the avermectins
are of potential significance in the prevention of heart worm
disease, and perhaps other filarial diseases. The data also
indicate that the minimum effective dosage, for full suppres-
sion of the maturation of 1-mo-old *D. immitis* in ferrets, lies
between 0.0125 and 0.05 mg/kg.

Research Notes. Journ. of Parasitology, 66,4, August 1980.

Abstract: G. Jørgensen.



PROTECTION AGAINST HEMORRHAGIC PNEUMONIA OF MINK
BY PSEUDOMONAS AERUGINOSA MULTICOMPONENT VACCINE.

Yo Aoi, Hiroshi Noda, Ryo Yanagawa, J. Yuzuru Homma, Chiyoji Abe,
Kazuyuki Morihara, Akira Goda, Satoshi Takeuchi, Takeshi Ishihara,
Dept. of Hygiene and Microbiology, Faculty of Vet. Medicine,
Hokkaido University, Sapporo 060, Japan.

An attempt to prevent epidemics of hemorrhagic pneumonia in mink due to *Pseudomonas aeruginosa* was made in the course of epidemics with injection of the multicomponent vaccine consisting of common protective antigen (OEP) of *P. aeruginosa* mixed with toxoids of protease and elastase of the bacillus.

Enzootics of hemorrhagic pneumonia, due to *P. aeruginosa* serotype 8, broke out from August to October 1977 in a total of 13 sheds of 3 farms (A, B and C) which were located in the northeast area of Hokkaido. These farms were raising 7,452, 2,553 and 10,639 mink respectively. The mortality rate of the mink on farm A, B and C were 11.8%, 13.0% and 1.0% respectively. The vaccination was performed on the 3 farms, 5, 8 and 21 days after the onset of the disease.

Inoculation of each mink with 200 μ g or 100 μ g of each of the three components of the multicomponent vaccine was effective in most of the male and female groups of mink. The period required for revealing the effect of the vaccination was very short, in some cases only a few days. Administration of the vaccine 21 days after the onset of the enzootic was also effective.

Japan J. Exp. Med., Vol. 49, 3, 199-207, 1979.

3 tables, 1 fig., 25 references.

In English.

Authors summary.



★ EXPERIMENTAL TESTING OF THE PYRIMINYL RODENTICIDE (VACOR)
IN SMALL ANIMALS.

(Experimentální Overení Rodenticidního Přípravku
Pyriminyl (Vacor) u Malých Zvirat).

J. Konrád, S. Husák, M. Svoboda, M. Mouka, M. Cupák, Vysoká škola
veterinární, Palackého 1-3, 612 42 Brno, Czechoslovakia.

The toxicity of the rodenticidal product Pyriminyl (Vacor) was tested in 14 dogs, 9 cats, 11 coypus and 16 ducks. In the tested dogs the 1000 mg dose per kg l.w. was lethal only in 17% of cases. The results demonstrate that the LD₅₀ for the dog is higher than stated in the literature (1000 mg/kg l.w.). Dogs show a high variability in their sensitivity to the product, since some of them died at lower doses. It can be assumed that 1 to 2% field bait will not induce any lethal intoxication in dogs. Doses of 300 mg/kg l.w. and higher were lethal for cats. The dose of 200 mg/kg killed 66% of the cats tested. There is a high possibility of poisoning cats in field deratization campaigns with Vacor. Coypus show clinical symptoms of intoxication after ingesting a Vacor bait at a 100 mg dose per kg. l.w.; however, they remain alive. Doses of 300 mg/kg l.w. and higher kill all the animals tested. The high sensitivity of coypu to Vacor suggests that coypu can be poisoned during Vacor deratization of coypu farms. Ducks were highly resistant to Vacor. Doses from 710 to 3000 mg per kg l.w. were endured without clinical changes, and the same was the case when the birds were given a diet with a 2% concentration of Vacor for six days. The toxicological examination demonstrated the different amount of Vacor in liver for different periods of time from the ingestion of the toxic agent, including the dependence on the animal species.

Veterinární Medicína, 25, (LIII) 1980, 501-509.

5 tables, 11 references.

In Czechoslovakian with summary in Russian, German, and English.

Authors summary.



★ POISONING DUE TO A RODENTICIDE IN STONE MARTENS (MARTES FOINA).

(Vergiftungen beim Steinmarder (Martes foina)
durch ein Rodentizid).

O. Geisel, A. Stanienda, Inst. für Tierpathologie der Universität
München, München.

In 12 of 714 stone martens (1,68%) the post mortem examination revealed "poisoned corn" in the stomach and in the duodenum. All cases occurred in the winter months from December to March. Male and female animals of different ages were affected. Morphologically an extensive hyperemia in the skeletal muscles and in all organs was the main finding. Toxicological examinations were made in 8 cases. In every case 2-chloro-4-diamethylamino-6-methylpyrimidine (Castrix^R, Crimidin^R) was established.

Zeitschrift für Jagdwissenschaft, 27,1, 57-60, 1981.

10 references.

In German with summaries in German, English, and French.

Authors summary.



NATURALLY OCCURRING PICORNAVIRUS INFECTION
OF DOMESTIC MINK.

G.G. Long, J.F. Evermann, J.R. Gorham, Animal Disease Diagnostic
Laboratory, Purdue University, West Layfayette, Indiana 47907,
USA.

The isolation and preliminary characterization of a virus from domestic mink are reported. The virus was tentatively classified as a member of the family. Picornaviridae on the basis of its physico-chemical properties. The mink virus was not neutralized by antiserum to some known members of the calicivirus genus, which included the nine serotypes of vesicular exanthema of swine virus, ten serotypes of San Miguel sea lion virus and feline calicivirus. Seroepidemiological studies indicated that the incidence of mink virus infection was widespread in domestic mink populations. Although the virus was isolated from mink on ranches with a history

of hemorrhagic pneumonia (pseudomonas pneumonia), no specific disease process could be attributed to the virus infection.

Can. J. comp. Med., 44, 412-417, 1980.

2 figs., 1 table, 36 references.

In English. Abstracts in English and French.

Authors summary.

★ CHARACTERIZATION OF ALEUTIAN DISEASE VIRUS AS A PARVOVIRUS.

Marchall E. Bloom, Richard E. Race, James B. Wolfenbarger,
Dept. of Health and Human Services, Public Health Service
Natl. Inst. of Allergy and Infectious Disease, Lab. of
Persistent Viral Diseases, Rocky Mountain Labs., Hamilton,
Montana 59840.

We characterized a strain of Aleutian disease virus adapted to growth in Crandall feline Kidney cells at 31.8° C. When purified from infected cells, Aleutian disease virus had a density in CsCl of 1.42 to 1.44 g/ml and was 24 to 26 nm in diameter. (³H)thymidine could be incorporated into the viral genome and the viral DNA was then studied. In alkaline sucrose gradients, Aleutian disease virus DNA was a single species that cosedimented at 15.5S with single-stranded DNA from adeno-associated virus. When the DNA was analyzed on neutral sucrose gradients, a single species was again observed, which sedimented at 21S and was clearly distinct from 16S duplex adenoassociated virus DNA. A similar result was obtained even after incubation under annealing conditions, implying that the bulk of Aleutian disease virus virions contained a single non-complementary strand with a molecular weight of about 1.4×10^6 . In addition two major virus associated polypeptides with molecular weights of 89,100 and 77,600 were demonstrated by sodium dodecyl sulfate-polyacrylamide gel electrophoresis of virus purified from infected cultures labeled with (³⁵S)methionine. These data suggest that Aleutian disease virus is a nondefective parvovirus.

Journ. of Virology, 35.3, 1980, 836-843.

5 figs., 1 table, 42 references.

In English.

Authors summary.

★ **ANTI-DEOXYRIBONUCLEIC ACID ANTIBODY ASSOCIATED WITH
PERSISTENT INFECTION OF MINK WITH ALEUTIAN DISEASE VIRUS.**

Edwin C. Hahn, Alan J. Kenyon, Memorial Sloan-Kettering Cancer,
Center, New York 10021, USA.

Anti-deoxyribonucleic acid (DNA) antibody was quantitated in sera from mink infected with Aleutian disease virus (ADV). During the course of the disease after experimental infection, the amount of anti-DNA antibody increased 60% initially, but then decreased to an intermediate level when measured 2.5 months later. The percentage of serum immunoglobulin, however, steadily increased over 3.5-fold during this period, resulting in the characteristic gammopathy. Correlation between the level of anti-DNA antibody and hypergammaglobulinemia was demonstrated with sera from chronically infected mink. Competition experiments and use of labeled nucleic acids indicated that the immunoactivity was more specific for double-stranded DNA than single-stranded DNA or ribonucleic acid. Anti-DNA antibody was found in purified immunoglobulin from chronically infected mink. Differences in avidity of antibody to DNA among antisera that had the same equivalence point were found. Avidity of antibody for DNA increased during the course of the disease.

Infection and Immunity, Vol. 29, no.2. 1980.

2 tables, 7 figs., 28 references.

In English.

Authors summary.





**IMMUNE COMPLEX GLOMERULONEPHRITIS OF MINK
WITH ALEUTIAN DISEASE.**

Reiner Müller-Peddinghaus, Jochen R. Kalden, Hubertus Meyer zu Schwabedissen, Gerhard Trautwein, Siegfried Ueberschär, Kali-Chemie Pharma, Experimentelle Pathology, Hans-Böckler-Allee 20, D-3000 Hannover 1, Fed.Rep.Ger.

Aleutian disease (AD) in mink is an experimentally reproducible, persistent virus infection developing into an immune complex disease whose development and epidemiology have been described in detail (4, 14, 17). Mink with AD have lesions of varying degrees predominantly affecting liver and kidney. The fate of the diseased animal is mainly determined by the kidney lesions and the vascular involvement. The development of glomerulonephritis is of an immunopathological nature mediated by immune complexes as demonstrated by immunofluorescent techniques (6,12,16).

Centr. Nephrol. 19, 101-03, 1980.

17 references.

Authors abstract.



ANTIBODIES TO ALEUTIAN DISEASE VIRUS IN HUMAN SERA.

Travis C. McGuire, Timothy B. Crawford, Dept. of Vet. Microbiology and Pathology, Washington State University, Pullman, Washington 99164, USA.

Aleutian disease virus (ADV) is a parvovirus that causes a persistent infection of mink. In our laboratory, the virus was extracted from infected mink tissues, purified by physical techniques, and used in immunologic procedures. Antibodies to ADV were found in five persons. Two of three detected at the first bleeding has rising antibody titers that peaked at 1:16 and 1:8 two to three months after initial detection; the third had antibodies to ADV that persisted over the next 18 months. Of the remaining two persons, one developed antibodies to ADV within six weeks that became undetectable in another two months; the other had

antibodies to ADV within eight months that remained an additional seven months. No illness occurred in these five persons.

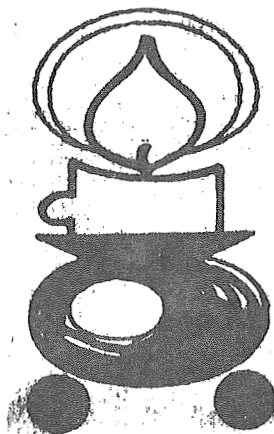
None of the 12 hospital patients with antibodies to ADV was exposed to either the virus or mink or had clinical histories suggestive of Aleutian disease or multiple myeloma. A report of multiple myeloma in a mink handler with 15 years of exposure to ADV discusses two previously reported cases of possible aleutian disease in humans. The mink handler had no antibody to ADV. Other persons exposed and unexposed to ADV had low titers of antibody to ADV by indirect immunofluorescence.

Several inferences can be made. Antibodies that cross-react with ADV, possibly resulting from a human parvovirus infection, occur in human sera. Five (28%) of 18 laboratory workers exposed to large amounts of ADV developed antibodies to ADV without any associated disease. The persistence of antibodies to ADV for at least 18 months and the occurrence of antibodies after exposure to ADV are causes for concern. Even if ADV replicates in human, the frequency of illness is very low. More prospective data are needed before additional conclusions can be drawn from the presence of antibodies to ADV in human sera.

The Journ. of Infectious Disease, 142, 4, 1980.

1 table, 3 references.

Authors summary.



★ HUMANE EUTHANASIA OF DANISH PELTER MINK WITH THIOPENTONE
IN CONTRAST TO KILLING WITH CHLORAL-HYDRATE.

Bjørn Chr. Hassel Gierløff, Dept. of Small Animal Diseases, The
Royal Veterinary and Agricultural University, 13 Bülowsvej,
DK-1870 Copenhagen V.

In Denmark killing of fur animals by means of intra-peritoneal injection of a 40% solution of Chloral-Hydrate has received official approval.

30-40 years ago this soporific was used not only as an anaesthetic for horse and swine, but experts have also recognized it as harmful to tissues leading to rather extensive tissue necroses following extravascular injections in horse and to peritonitis and death in pigs anaesthetized with 5% and 3% solution of Chloral-Hydrate (an isotonic solution is of 4.1%).

On post-mortem of mink killed by intra-peritoneal injection of a 40% solution of Chloral-Hydrate, peritoneum has a "boiled" appearance even immediately following the injection, and it is very likely that the strong effect on peritoneum causes pain in the interval between injection and loss of consciousness.

By using a 20% solution of Thiopentone instead of Chloral-Hydrate, peritoneum does not exhibit similar changes even up to three hours post injection. Loss of consciousness and death occur within the same period of time as that recorded for Chloral-Hydrate when 2 ml of a 20% Thiopentone solution is used for standard bitches of an average weight of 950 g and 4 ml for big wildmink males of a maximum weight of 2852 g. The killing technique is identical for the two preparations.

The use of Thiopentone for the killing of mink was considered suitable both ethically and from a veterinary point of view in contrast to the highly cauterizing Chloral-Hydrate.

Dansk Vet. Tidsskr. 1980, 63, 23, 1/12.

2 tables, 5 figs., 11 references.

Author abstract.

In Danish.

COMMUNICATION.THE YORK CONFERENCE 1981.

As it appears from the following pages The Fur Breeders Association of the United Kingdom & Ireland has held a very successful conference in York on 3., 4., and 5. April 1981 participated of more than 125 people.

Even that the reports given at the conference are addressed to practise much valuable information is given in the 113 pages of the conference report.

We hope that the 1982 conference will be advertised in SCIENTIFUR so that interested readers can get the possibility of participating this famous international conference about fur animal production.

Gunnar Jørgensen

F.B.A. INTERNATIONAL MINK BREEDERS'**CONFERENCE REPORT****THE FUR BREEDERS' ASSOCIATION**of the **UNITED KINGDOM****SIXTEENTH TRAINING COURSE**

and

CONFERENCE

3rd/4th/5th April 1981
 ROYAL STATION HOTEL, YORK

F.B.A. INTERNATIONAL FUR BREEDERS' CONFERENCE REPORT

Proceedings of the Sixteenth Training Course and Conference held at the Royal Station Hotel, York, England, 3—5 April 1981.

Published & distributed by:

The Fur Breeders' Association of the United Kingdom
Riverbank House, (1st Floor),
67, Upper Thames Street,
London, EC4V 3AB, UK

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Prepared & printed by:

Janssen Services,
33a High Street,
Chislehurst,
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THE FUR BREEDERS' ASSOCIATION OF THE
UNITED KINGDOM



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Chairman: P.A. Hawkyard, Hawkyard Mink Farm Ltd.
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Gazette editor: R.P. Rice

Riverbank House, (1st floor)
67, Upper Thames Street,
London, EC4V 3AB

I commend to you the contents of this verbatim report of the Sixteenth Training Course and Conference. It contains, as does its predecessors, a wealth of information which must prove invaluable to the reader.

I thank all the speakers for the work they have put into the preparation of their papers and for the distance they have travelled in order to give them.

I thank the Association secretariat for their work in the running of the Conference.

I thank Mick Hallam and his delightful girls for their efficiency in the so prompt production of this report.

Finally, I thank the delegates who came from so many different countries, for their interest and attention throughout the Conference.



OPENING REMARKS

A.F. Frayling, O.B.E.
Honorary President, F.B.A.

P.A. Hawkyard
Chairman

Fur Breeders' Association of the
United Kingdom

Ladies and gentlemen, it is once again my pleasure and privilege to open this Sixteenth Annual York Conference. This year we have a very interesting assortment of speakers with two distinguished visitors from overseas and several representatives from the home market, all of whom I hope are going to engage your interest and teach you something.

There are also one or two small diversions. Putting business to one side, although we all know it is of great importance, it is also important for you to spend a very enjoyable and pleasant weekend which I sincerely hope that one and all will do.

I have great pleasure, Mr. Chairman, in declaring open this Sixteenth Annual York Conference.



CLOSING REMARKS

P.A. Hawkyard

The unfortunate moment has come to end this Sixteenth Annual Conference. Before closing, the thanks of the Association and one and all of you are due to all the speakers who have made this a most successful conference. My thanks to Arthur Frayling for organising as usual his very unique competition; my thanks to Mick Hallam and his gorgeous girls from Janssen Services for recording these proceedings and producing the report; and finally, my very sincere thanks to De Hammett who has organised this conference and made it run so smoothly.

Thank you very much indeed, and I will now hand you over to the Honorary President to close this conference.

A.F. Frayling

Well, Peter Hawkyard has said all there is to be said. I hope you have all enjoyed some very interesting talks and we should not forget that although this is a social weekend, the object of the exercise is to acquire greater knowledge and thereby improve the product. If this has been achieved, and I do hope it has, then the Sixteenth Conference must rank as a success.

Thank you all for coming, I hope you have enjoyed yourselves and will come again, and I now declare this 1981 Conference terminated.



NEW EDITOR OF THE FUR FARMERS GAZETTE.

PRIVATE AND CONFIDENTIAL

SECRETARY:
MRS. D. E. HAMMETT

FUR BREEDERS' ASSOCIATION
OF THE UNITED KINGDOM

Riverbank House (1st Floor)
67 Upper Thames Street, London EC4V 3AB

TELEPHONE 01-248 9095

19th August, 1981

Dear Gazette Reader,

The F.B.A. is making changes in its Gazette. The Gazette is going to appear on the first day of the months of December, March, June and September, commencing with 1st December 1981.

Ray Rice has been Gazette Editor for many years, and during this time has produced many interesting and informative editions. Ray is now going to concentrate on regular feature articles for the Gazette. We thank Ray most sincerely for being Editor - since January 1969.

We are pleased to welcome Mick Hallam of Janssen Services who has agreed to take over from Ray. Will you please send material for publication to him at Janssen Services, 33a High St., Chislehurst, Kent BR7 5AE.

Closing dates for copy will be exactly one month prior to publication.

Yours sincerely,

D.E.HAMMETT(MRS.)

Secretary.



Janssen

SERVICES

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20th August, 1981

Gunnar Jørgensen Esq.,
NUFs Fur Animal Division,
Scientifur
48, H Roskildevej,
DK - 3400 HILLEROD
Denmark

Dear Gunnar Jørgensen,

Re: FUR BREEDERS GAZETTE

As you can see from the attached letter from the Fur Breeders' Association of the United Kingdom, the time has come for a change of editor for the Fur Breeders' Gazette. I have agreed to take on the job as Honorary Editor.

Now, the reason why I have been selected is because, over the years, through Janssen Services, I have helped produce the York Report which follows the FBA Annual Conference. So you see, I am not a mink farmer, merely a person on the sidelines who has been involved with the UK mink fraternity for many years.

I understand that the Association Secretariat here in London sends you copies of the Gazette and I know that in many cases copies of your own publications are sent to London. It seems to me that this is a very good time to suggest a degree of co-operation between publication editors in order that we can offer each other a free exchange of articles and items of interest for inclusion in our respective journals. As new Editor I am sending out requests for articles to many people in the hope that I can build up a bank of suitable material for future editions. You will be very welcome to use any of this material, as and when it appears, on a reciprocal basis.

Of course, there is a problem of language which will affect most of us but I would suggest that editors might well be able to indicate to other editors those items appearing in their publications which they think would be worthy of translation.

I have another good idea. It would be splendid if we could arrange a meeting of as many mink farming publication editors as possible and what better place to hold such a meeting than the FBA Conference at York in April 1982? The Conference in itself provides a splendid forum for the exchange of ideas and if we had the opportunity of meeting each other face to face we could certainly set in motion a fruitful co-operation. The costs would be quite low and the benefits to be obtained very high. Will you let me have your views and make sure my name is on your mailing list for publications?

Yours sincerely,

Mick Hallam

COPY

Forsøg med pelsdyr
RESEARCH IN FUR ANIMALS

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3400 Hillerød

Tel. (03) 26 14 10
Giro 2 08 56 07

Mr. Mick Hallam
Janssen Services
33a High Street
Chislehurst
Kent BR7 5AE
England

REF. GJ/EA

I. NR.

DATO 25 August 1981

Dear Mick Hallam

Thank you very much for your kind and interesting letter of August 29, 1981.

I am very glad to hear from you about future cooperation. I think you know that I have been editor of SCIENTIFUR during 5 years. During that time I have not received The Fur Breeders Gazette, and I have not received invitations to the York Conference or proceedings from this.

But from your letter I am getting the feeling that the cooperation between Great Britain and the Scandinavian countries should have the chance of increasing.

We should be very glad to exchange journals and to bring advertisements (free of cost) for the York Conference as well as we hope that we may be able to bring abstracts of the reports given at the York Conference.

I think that your idea about an editor conference is a good idea. It is my very real feeling - after reading the Scandinavian journals, The Fur Rancher, and Brühl - that the fur breeders are given relatively poor information about the scientific side of the industry. Very few scientific reports are presented during these journals and the main part of the actual presented are written in a language which do them heavy for the non-scientist to consume. Very seldom you are seeing information about the scientific reports written in popular language.

I is my feeling that we on international basis could do a good job in popularizing the scientific topics and get them presented to the readers of the ordinary breeders journals of which The Fur Breeders Gazette is one.

But it cost a lot of time and money, so therefore it have to be solved on an international basis. The discussion of this and other actual matters could easily be done at the York Conference in 1982, and I hope that you will be able to get all positive answer from other of our colleagues.

If the interest for an editor-conference is as big as it ought to be I should be glad to participate, because I really feel that much work has to be done and more has to be done better.

Today we send you the first and second issue of SCIENTIFUR Vol. 5, and we have entered you in our exchange list of journals as well as on the mailing list of the department.

We should be very glad to receive as well The Fur Breeders Gazette as the proceeding from the York Conference.

Again thank you for your letter and your invitation. I am looking forward to closer cooperation.

Yours sincerely


Gunhar Jørgensen

NATIONAL BOARD OF FUR FARM ORGANIZATIONS

3055 North Brookfield Road
Brookfield, Wisconsin 53005
[414] 786-4242

September 8, 1981

Mr. Gunnar Joergensen
48 H Roskilderej
DK - 3400 Hilleroed
Denmark

Dear Friend Gunnar:

At its 38th annual meeting held August 11-12 at Park City, Utah, the National Board unanimously restated its invitation that the 1988 International Congress on Fur Animal Research be held somewhere in North America. This invitation is restated, as originally, to complement a similar invitation from the Canada Mink Breeders Association.

We are aware that the sponsoring committee will meet this fall to formally consider these invitations. We wanted you to know that the National Board is most eager to help sponsor such a meeting in North America in 1988.

Cordially,



Bruce W. Smith
Administrative Officer

BWS:lp

cc: Gordon Sill, Anthony Rietveld

MAGYAR
AGRÁRTUDOMÁNYI
EGYESULET
A MŰSZAKI ÉS TERMÉSZETTUDOMÁNYI
EGYESÜLETEK SZÖVETSEGÉNEK TAGJA

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Венгерское Аграрное Общество
HUNGARIAN SOCIETY OF AGRICULTURAL SCIENCES
UNGARISCHER AGRARWISSENSCHAFTLICHER VEREIN
SOCIÉTÉ DES SCIENCES AGRICOLES DE LA HONGRIE

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BUDAPEST November, 1981.

Gunnar Joergensen
NJF's Fur Animal Division
SCIENTIFUR
48 H Roskildevej
DK-3400 Hilleroed

Dear Mr President,

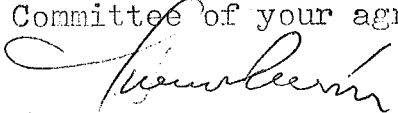
The following International Conference will be held in Debrecen between 6-11 September, 1982 by the Hungarian Society of Agricultural Sciences, the Ministry of Agriculture and Food, the National Bureau for Protecting Environment and Nature, the Hungarian Academy of Science, the Research Centre for Animal Production and Nutrition:

Function and Significance of Gene Reserves Preserving
Animal Species and Breeds.

As you can see in the enclosed preliminary notice one section of the conference touches upon the themes and work of our world organisation. That is why I kindly ask you to introduce this Conference to the members of your world organisation and at the same time we ask your countenance in order to have a successful conference in the interest of our common aims.

I would like to inform you that the International Conference is accordantly sponsored by FAO and FEZ aswell. The next detailed notice will be sent to you until the end of 1981.

I ask you to notify our Organizing Committee of your agreement and Countenance.


/Prof. Dr. Sándor Holdas/
President of Organizing Committee



Forsøg med pelsdyr
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President of Organizing Committee
Prof., Dr. Sándor Holdas
Hungarian Society of Agricultural Sciences
V. Kossuth Lajos Ter 6-8
1055 Budapest
Hungary

REF. GJ/EA

J. NR.

DATO November 17, 1981.

Dear Professor Holdas

Thank you for your letter of November 1981 in which you advertise an International Conference concerning: Function and Significance of Gene Reserves Preserving Animal Species and Breeds.

I am not a president for any international organization, but as editor of SCIENTIFUR I shall be glad to inform the Fur Animal Production side about the conference you advertise.

Your letter was not followed by a preliminary notice about the conference, but I hope to receive this information later.

Just as we received your letter we are finishing the latest issue of SCIENTIFUR Vol. 5, and because of lack of time and the importance of the conference you advertise, we shall bring your letter in this issue of SCIENTIFUR in order to give our readers the possibility to take direct contact to you for further information.

The next issue of SCIENTIFUR will be prepared in February 1982 and by then we shall bring the information about the conference which you may send us.

Finally, I want to wish you and your family and the organizing committee a Merry Christmas and a Happy New Year.

Kind regards


Gunnar Jørgensen



Scientifur

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