

PET FOODS' INSIDIOUS CONSEQUENCES (A Modern Veterinary Snafu)

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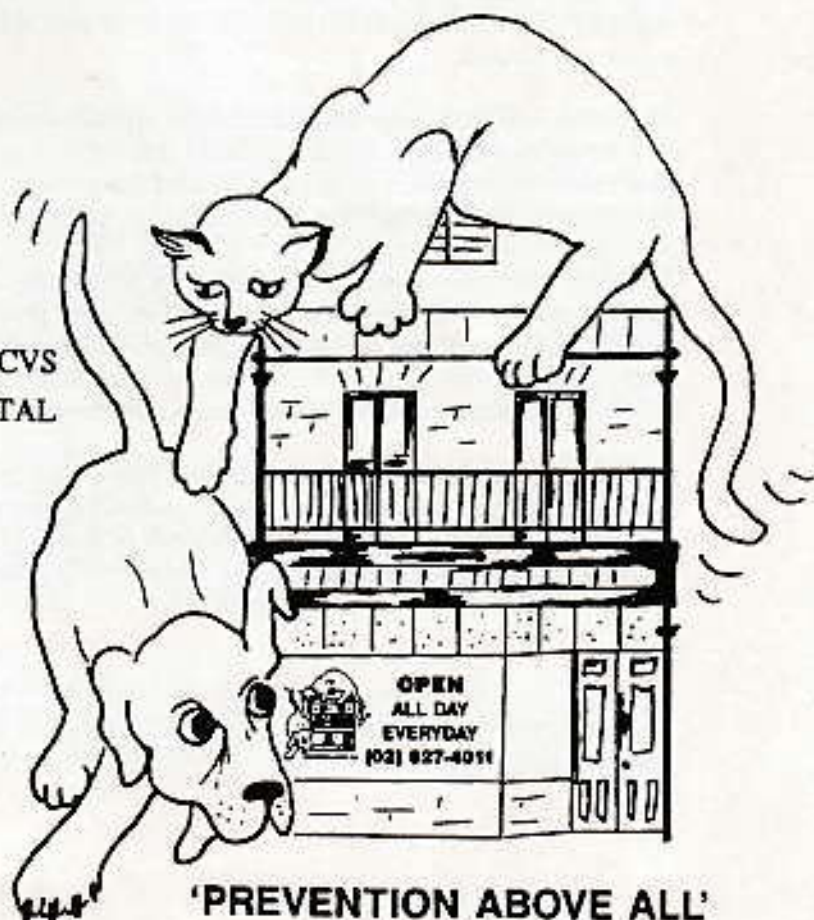
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(A MODERN VETERINARY SNAFU)

SUMMARY

A recurring theme is that both content and form of the pro-pet food argument is flawed, making invalid conclusions the rule. The euphemistic use of the term 'pet food' is deplored and the cynical manipulation of the rules of logic, mass psychology, politics and economics is described. Insidious environmental consequences are listed. Veterinary science is seen to be corrupted due to an uncritical appraisal by those responsible for animal health care.

The state of health is dependent upon the correct balance of quantity, quality and frequency of chemical and physical requirements provided by food intake. Examples of failure are provided with the emphasis being placed on periodontal disease. Recent case surveys and research findings are presented on Foul Mouth AIDS, Feline Eosinophilic Disease Complex, Plasma Cell Pododermatitis and FLUTD.

The limitation of the clinical diagnostic pathways are shown to perpetuate the insidious process. A 'Cybernetic Hypothesis of Periodontal Disease' provides an evolutionary, ecological perspective casting the modern feeding practices in a grim light. Arising out of this dark and corrupted phase a renaissance is predicted providing beneficial insight into health and disease.

INTRODUCTION

Unrecognised, and therefore undefined, problems have the potential to be the most sinister. This paper is intended as an introduction to the insidious consequences of the processed pet food industry. It should dispel the propaganda myth proclaimed in the TV advertising and replace it with a strong revulsion.

Given the assiduous way that the monster spreads its tentacles one could be forgiven for subscribing to a conspiracy theory. It is more likely that cultural conditioning and the coincidence of economic and environmental factors have facilitated the growth. Now in a dominant position, the industry enjoys super profits which are then directed to maintenance of its grip on the market.

There does remain a whiff of conspiracy when one considers that the problem is in the main unrecognised and undefined by the veterinary profession. Veterinarians gain legitimacy and privileges as guardians of the public welfare in respect to animal health. The profession has failed badly in its duties. Recent experience has confirmed that rather than admit failure of function the profession would rather deny it has missed the obvious.

The Australian Veterinary Association, for example, has adopted an aggressive stance. The Association was in receipt of direct and indirect sponsorship from two large multinational pet food companies. This occasioned bitter criticism of the implied conflict of interest. Rather than limit or stabilise their involvement the AVA has recently entered a sponsorship agreement with a third American multinational pet food corporation.

Despite the controversy, some highly placed veterinarians are prepared to support the pet food industry. Dr Jill Maddison, of Sydney University is President of the Australian Small Animal Veterinary Association and Convenor of the AVA Adverse Drug Reaction Sub-committee. She states:

'My affiliation with the pet food industry commenced on July 1, 1993 when I became part-time consultant to Friskies Pet Care.....If I did not believe that good quality commercial pet foods had advanced the health of companion animals enormously in the past decades I would not have accepted this consultancy.'

It is my belief that the profession's political mismanagement and acquiescence is matched by a naive scientific methodology.

'We have followed the reductionist paradigm to absurdity; such that we are all specialists in a specialist world knowing more and more about less and less until we know everything about nothing. Narcissists every one, we are dazzled by our own 'brilliance' and ultimately blinded by the so-called 'science' which appears to open up the innermost secrets of the natural world. We worship at the holy shrines of 'scientific' excellence. We honour and serve the high priests, each one having an awe-inspiring grasp of some demanding inaccessible truths concerning the orthodox wisdom. But en masse we suffered one immense fatal flaw: bereft of humility we forgot the subject, we lost the plot.'

Never is this more so than in the area of small animal dietetics. Boffins in innumerable labs separated by great distance and time work on hypotheses, generate theories and derive 'unquestioned fact'. The measurers and recorders produce miles of tables confirming their point of view on esoteric topics and readily justify the vast array of assumptions they care to make on all other parameters known and unknown.'

(Lonsdale, 1993)

Our way out of the mire is via a holistic assessment. Alas, our communication methods depend upon compartmentalisation of the topic into bite-sized chunks. It is with deference, that I ask you the reader, to reassemble the whole in order to create and recreate the infinite interconnectivity of the component parts.

Since the holistic approach is not usually taught or practised, here are a few tips which may be of help. Firstly, make sure to have fun. There are no columns of meaningless figures in this approach nor disembodied dry facts. Dr Guilford assures me that the Massey objective is to create thinkers in veterinary science not parrots of the orthodox view. That being so go easy on yourself for you will not be able to think of everything simultaneously and neither should you for you need a time base over which to observe the unfolding three-dimensional developments. (No static, dead images here) Ideas are not the world, they only reflect it, so avoid getting carried away with holism at the expense of reductionism and vice versa. In other words preserve reciprocity, letting each compliment the other.

THE NAME

The term 'pet food' implies something wholesome and nutritious providing nutrients for pets. The only legitimate way for the establishment of the meaning is to look at the diet selected by 'pets' in the natural state. Beware the vested interests who quickly jump in to condemn this approach as unrealistic.

They say that domestic animals are not natural and that there are no wild counterparts providing a model. In this they are quite wrong. In Australia Canis familiaris dingo has been providing a perfect model for 4,000 years. Felis catus has been a colonist since the early days of white settlement and exists in self-sustaining populations.

Many authors make the point that predator populations vary according to the abundance or otherwise of the prey. This appears trivial but in fact should be seen as a vital aspect of the interaction between a population and its food. In other words, we can in part describe and define a food as that *ingesta* which shows direct correlation with, and facilitates the increase in, population numbers. This represents a move away from the concept of the individual animal as the unit for study and identifies the population as the viable unit over time. The relevance of environmental needs must be factored in to ensure sustainability.

Wolf population dynamics and prey relationships were studied in North Eastern Alberta (Fuller and Keith, 1980). The moose kill rate averaged about one moose per 4.7 days with an estimated prey consumption rate of between 0.12 and 0.15kg prey/kg wolf/day. They observed that wolf population densities increased where the animals had access to human refuse tips and that wolves in poor condition eg broken teeth/mange were able to subsist under these conditions.

The wolves of Isle Royale National Park in the northern part of Lake Superior make for an interesting study of a single wolf pack in equilibrium with its main prey species - the moose. Shortage of food during the period when young are being reared appears to be the factor responsible for the high mortality which in turn maintains wolf and moose equilibrium (Ewer 1973)

The dingo is believed to be descended from the Indian Plains Wolf and is genetically indistinguishable from the domestic dog. The summary of the paper by Newsome et al states:

'In stomach contents of 530 dingoes (Canis familiaris dingo) in south-east Australia, 89.3% of feed, by occurrence, was large and medium-sized marsupials (Wallabia, Macropus, Pseudocheirus and Trichosurus). Of 26 dingoes with sheep or cattle remains in the stomach, 11 had eaten it as carrion, judging from the presence of maggots, and 5 of those had obtained it from carcasses used as bait for the traps. There was 4% of feral pig, 0.3% of horse and 7.8% of rabbit which are all regarded as pests. There were 26 species of prey altogether. Of the 25 other species caught in the traps, over 20 were protected wildlife.'

Whitehouse commenting on the populations of dingoes in Western Australia remarked that they appeared to be opportunistic feeders preferring wild animals to domestic stock even though they were equally available. Where rabbits occurred they were a large part of the diet and it was thought that dingo numbers varied with the rabbit population. (Whitehouse, 1977)

Coman and Brunner studied the food habits of the feral house cat in Victoria. Grass and small twigs occurred for 1.4% by volume of the ingesta with 88% being chiefly rabbits (Coman and Brunner, 1972) Feral cats in Sweden were shown to consume about 294 gms a day of rabbit. (Liberg, 1984)

It is noticeable that the survey animals did not contain bovine spleen or lungs to any great degree. The papers do not report if crops were grown in the vicinity, however vegetable matter was in low level and no mention made of soy, wheat, rice etc. Dr D S Kronfeld asks, 'Have you ever seen a dog attack a wheat field?' We have seen that the manufacturers exercise considerable license in what they now call food suitable as a 'complete and balanced diet'.

Friskies_R Go-Cat_R

WHOLE GRAIN CEREALS:

Corn and wheat

CEREAL BY-PRODUCT:

Derived from soya bean and corn.

CHICKEN AND CHICKEN BY-PRODUCTS

BEEF, LIVER AND MEAT BY-PRODUCTS:

Derived from Beef and/or mutton

FISH AND FISH BY-PRODUCTS:

Derived from sardines, pilchards and tuna

VITAMINS:	A, D ₃ , E, B ₁₂ , Thiamine, Riboflavin, Pyridoxine, Niacin, Calcium, D-Pantothenate, Folic Acid, Choline Chloride and Biotin.
MINERALS:	Calcium Carbonate, Ferrous Sulphate, Manganese Sulphate, Cupric Oxide, Zinc Sulphate, Cobalt Carbonate, Phosphoric Acid, Potassium Iodide, Sodium Chloride, Calcium Chloride and Dicalcium Phosphate.
OTHERS:	Yeast, Potassium Sorbate, Dextrose Monohydrate, Amino Acids (Taurine, Glycine), Antioxidants and Food Colours.

Pal Meaty Bites

Whole grain cereal, meat and meat by-products derived from beef, mutton, chicken Cereal by-products. Iodised salt, vegetable oil, vitamins and minerals, food colouring, preservatives and anti oxidants.

LOGIC

For false (insidious) belief systems to gain currency one or both of two things must happen.

- a. Arguments must be predicated on false assumptions which a rigorous application of deductive logic transmits to the bottom line producing a false conclusion.

An example being that:

Processed food may be considered to be the same as, or as good as, the natural diet.
If all other things are equal then:
 Conclusion - the perfect state of health will prevail.

- b. Either inadvertent or intentional sloppy application of the rules of logic enable true premises to give rise to false conclusions.

Eg: Animals need specific chemicals,
there are specific chemicals in processed food:
 Conclusion - therefore animals obtain their specific chemicals.

Either false premises (content) or false deductive reasoning (form) characterises this debate at every level. Opponents deny this on the grounds that experiments with standard controls have been conducted to show any discrepancies. Here lies the nub of the issue; to my knowledge with the exception of Pottenger (1946), in all nutritional and clinical trials involving small animals both the test sample and control group have been fed on processed food.

WE HAVE STANDARDISED ERROR SUCH THAT INCOMPETENCE HAS BECOME THE STANDARD.

Where this is due to ignorance, education may help. If it can be shown that misinformation is presented with intent to deceive then regulatory/legal action will be required. This was the course of action required in respect of the 'infant milk formula' saga. At least the name of the powder implies that it is an artificial substitute formula but nonetheless the effect in third world countries was, and is, a disgrace as the following abstract from 'The Greening of Medicine' will portray.

"The gradual reinstatement of breast feeding like that of natural birth has resulted from a few pioneering individuals, the rise of consumer organisations and the gradual change in society's perception so that, although 'breast is best' is now more widely accepted, the vested interests in controlling the economics of the product ensure that the battle continues. Nowhere is this more clearly seen than in the baby food industry and Third World nutritional needs. A public outcry and a series of lawsuits against Nestle's widespread promotion of artificial feeding in Third World countries led to the establishment of a WHO/UNICEF code on the marketing of breast milk substitutes. In summary this code suggests that the following good practice should be observed.

WHO/UNICEF Code

1. No advertising of breast milk substitutes
2. No free samples to mothers.
3. No promotion of products through health care facilities.
4. No company mother craft nurses to advise mothers.
5. No gifts or personal samples to health workers.
6. No words or pictures idealising artificial feeding, including pictures of infants, on the labels of the products.
7. Information to health workers should be scientific and factual.
8. All information on artificial feeding, including the labels, should explain the benefits of breast-feeding and the costs and hazards associated with artificial feeding.
9. Unsuitable products, such as sweetened condensed milk, should not be promoted for babies.

It is because the issue of breast feeding versus bottle involves such large profits that the medical and social factors have been marginalised by the economic and political ones."

The code was officially authorised by the Australian Trades Practices Commission Ruling, Sept, 1992.

PSYCHOLOGY

Psychology plays an integral part at all levels. Individually we surrender some of our freedoms on becoming members of a society. Straight away the influence of mass psychology takes over. Post-war Coca Colanisation of the mind occurred such that it is now axiomatic that most 'sophisticated caring people' load their supermarket trolley with brightly packaged pet foods.

By control of the mass media a belief system can be manipulated almost at will. Mussolini and Hitler both worked this to their short-term advantage. The pet food industry uses its monopoly profits to cement its hold on the market. Bucking the system, blowing the whistle, call it what you will, it has always been difficult for the informed few to overcome entrenched belief systems. Even though the veterinary profession is aware of the litany of ills spilling out of the pet food bag it is paralysed in the following way.

'According to Chris Argyris, all organisations are prone to this because it flows from a natural human response that we practice from the time we leave the cradle. This is the response we have to particular problems, problems that we see as personally threatening. What we do, with increasing skill as we mature, is develop ways of by-passing the problem, then of covering up the by-pass and then covering up the cover-up.....as a result, instead of being cleared up, the original flaw not only goes on festering, but its very existence becomes taboo - undiscussible, and so irremediable.'

Max Walsh, Sydney Morning Herald, 20 June, 1993

POLITICS AND ECONOMICS

In our modern world the final arbiters of truth are the 'experts' (until the populace tires of being misled). Consequently politicians, bureaucrats and consumer watchdogs defer to the veterinary profession as presumed experts for a ruling as to what is acceptable. In fact, the veterinary profession appears to have abdicated its responsibility and is often a mindless mouthpiece for the processed pet food industry.

'What I recommend is that dogs should be fed a nutritionally sound diet which would be the easiest way to go is with tinned food such as Pal, Whiskas and any of the better known commercial brands. But they need dental exercise and so on that they should have hard dog biscuits or eat bones regularly two to three times a week. But it's a very simplistic approach to say that if you give a dog just a natural diet of bones he's never going to have teeth problems. That's a fairytale.'

Dr Stephen Coles (President, Australian Veterinary
Dental Society) Radio National, Daybreak 14/9/1992

Dr H Southwood, President of the Sydney Metropolitan Practitioners Branch of the AVA speaks with admiration of the pet food industry in the March, 1993 edition of the AVA News, Letters Page:

'First, it is my belief that the widespread availability and use of commercial rations has generally contributed to a longer and healthier life of pets.....

Second, to my knowledge Tom has no post-graduate qualifications or specialist qualification in animal nutrition nor does he have any valid scientific data to back his assertions. This position contrasts strikingly with the major players in the pet food industry.....

Finally, I congratulate the pet food industry on their patience and tolerance in the face of this attack. I have no vested interest in this matter yet my patience is exhausted.'

Without the least show of conscience, should the poor unfortunate animal demonstrate signs of obesity, diarrhoea, kidney disease etc, then another can of pulverised offal is prescribed. Just as '100% complete and balanced' but manufactured to a different prescription formula by the same manufacturer, especially for your pet's requirements. (I speak of the 'can to counteract the can' but my solicitor prefers the 'con to counteract the con'.) The net result of this complicity is a woeful absence of protection from the highly ingenious, resourceful pet food producers.

Dr Grant Guilford makes the same points in a more prosaic way.

'It is important to emphasise that the calculations made in the formulation of a diet make a number of arbitrary assumptions and the potential for significant error is high.'

(Vet Business, 1993 2:1)

The headline in 'The Veterinarian', August, 1993 screamed the recurring truth; RESEARCHER CONTRADICTS ESTABLISHED DIET PRACTICE. Professor David Kronfeld:

'concluded that the low protein diets often recommended for healthy geriatric dogs and dogs with chronic renal failure were more harmful than diets with moderate protein content'.

(JSAP, 1993; 34:211)

Advertising of an outrageous nature. If one adopts an intelligent approach to the claims one detects not mere 'puffery' but outright distortion. That the government and consumer watchdogs allow this exploitation of the public probably traces back to the veterinary (expert) endorsement of the products.

Nutrition articles in the professional journals could mostly come under the category advertising. Just check out the titles and content and you will see they mostly have a commercial 'angle'. Validating or discrediting rival claims is the order of the day. Sometimes they raise red herrings and deflect the proper interest. Apart from the veterinary profession's innate conservatism and respect for authority I suspect this nutritional rubbish goes unchallenged due to its being deadly dull and quite indigestible.

Regulations governing pet foods afford the authorities scant control. The Association of American Feed Control Officials sets the guide-lines for processed pet foods. Dr R L Wysong, DVM comments:

'The confusion, even blindness, by researchers and regulatory agencies (however well intentioned) is apparent in the following incredible contradiction by authors with DVM, PhD and specialty board certification in veterinary internal medicine and nutrition credentials:

"These protocols (The authors are discussing AAFCO studies) were designed to assure that pet foods would not be harmful to the animal and would support the proposed life stage. These protocols were not designed to examine nutritional relationships to long-term health or disease prevention." (G F Collings, et al, Veterinary Forum Oct, 1992, p34)"

In other words a food could cause disease and destroy long term health yet at the same time "not be harmful" and be "100% complete"! So after a pet has been fed the "proven" food for a period of time equal to the duration of an AAFCO study (26 weeks), all bets are off. The "100% complete and balanced" food may then be literally poisoning the animal with the blessings of the entire academic, professional, scientific, governmental and industrial pet food establishment.'

(Wysong, 1993)

When viewed at a national level, the annual cost to Australians of processed pet foods exceeds \$600 million and the cost of veterinary pet care in excess of \$400 million. (AVA News, Aug, 1993)
The net result of political and economic mismanagement is that the community and its animals suffer. As in other areas, it is the poor who are disproportionately affected. Natural foods cost much less than the processed and natural food-fed animals suffer less disease. It is alarmingly common that clients present sick animals at our practice having paid huge sums for commercial food. Frequently the animals are suffering a variety of signs attributable to incorrect feeding for which the owner cannot afford the diagnostic and therapeutic work. Alas they are doubly victims with the alternatives being: allowing the animal to suffer, euthanasia of the pet or seeking charity.

Veterinarians are given to pondering if the ownership of animals should be viewed as a right or a privilege of the affluent. This can be seen as fatuous elitism when one considers that in days gone by anyone could own a pet. In the present day, an increasing number of our clients find that natural food feeding ensures owning a pet does not become a financial or emotional burden.

ENVIRONMENTAL IMPACT

The environmental costs of reportedly the world's second most traded commodity are:

1. Unnecessary processing.
2. Unnecessary packaging.
3. Unnecessary transportation.
4. Displacement of perfectly useful table scraps.
5. Foul, copious excrement as opposed to the more wholesome natural product.
6. Excrement, packaging and food scraps filling the rubbish tip.
7. Abattoir offal fed to pets instead of being recycled through stock feed and fertiliser.

As veterinarians if we were to momentarily deflect from our treatment obsession and emphasise prevention then mass benefits would accrue to the environment. The same trained professionals could be employed to work for instead of against the environment which sustains us all.

VETERINARY SCIENCE

Scarcely dare I employ the term for the current showing bears little relation to what may be described as 'scientific'. James Lovelock, the renowned scientist says:

'Science has taken over from religion and it has become a rather corrupt church, It's in its mediæval theological phase.'

This is the more so in the veterinary sphere where much energy is directed to technological manipulation of a few flawed scientific concepts.

The technologists frequently manipulate the content and the form of the argument in committed support of the 'germ' theory of disease. Koch's postulates worked in unsophisticated models of contagious disease but when applied to the multi-factorial world of degenerative/environmental disease they are badly wanting. Indeed the entire 'cause and effect' model derived of the reductionist paradigm yields smaller and smaller pieces of dislocated information.

Observe the way that the 'complete and balanced formula' (which should depend on a 'complete and balanced' understanding) mutates and you will perceive the inherent flaws.

'The ideal level of protein intake for dogs is still a matter of debate amongst nutritionists, veterinarians and breeders, with recommendations varying two- to three-fold. Perhaps the best way to investigate this further is by the use of purified diets, but this brings an added challenge because they do not usually reflect the normal diet. Relating these basic studies to practical feeding of the dog represents a key issue for veterinarians and nutritionists to resolve.'

(Johnson, 1993)

Two volumes summarise the blunders of the processed pet food industry and its army of blinkered stooges. These are 'The Nutrient Requirements of Dogs' (1985) and 'The Nutrient Requirements of Cats' (1986) where the following absurd statements can be found.

'Cats /dogs require specific nutrients not specific foodstuffs'.

So deeply uncritical is the profession that, for example, the British Small Animal Veterinary Association, *Journal of Small Animal Practice* gives over one complete edition annually to the publication of papers presented at the Waltham Symposium on pet foods. The editorial committee of that journal is so hoodwinked that they even allow employees of Walthams to write the guest editorial.

HEALTH

Despite its wide usage, 'health' is a poorly defined term implying an absence of disease or state of wellness. Veterinary clinicians encounter problems when dealing with animals:

1. Within the clinical context they obtain only a 'keyhole' view of ongoing processes.
2. The ability of animals both on the physiological and behavioural level to obscure chronic disease.
3. The aging process which serves to, or is allowed to, obscure underlying ill-health. The result is that veterinarians are frequently misled as to the true state of an animal's health. Furthermore, little thought goes into correcting this oversight.

Sometimes the health of our animals is abruptly compromised by the forced intake of unsuitable foodstuffs. Gastric dilatation volvulus affects 60, 000 dogs per year in the USA. (Burrows and Ignaszewski, 1990) More commonly the problems are of a slow insidious nature thus the dietary connection is less obvious. Feeding in an optimum wild environment will be of sufficient quantity, quality, and frequency as to provide for the animal's needs. Both the chemical and physical components must be recognised as two sides of the same coin. You cannot or should not have one without the other.

Chemical Requirements of Natural Food

Quantity of chemicals is important:

'Hazewinkel et al (J Nutr 121:S99-S106) in a study of growing Great Dane puppies with varying calcium and phosphorus levels, concluded that the dogs are unable to protect themselves against chronic excessive calcium intake regardless of the ratio of calcium to phosphorus. A balanced Ca:P ratio does not offer protection from a high level of calcium in the diet. Many pet foods in Australia, even some especially formulated for puppies, contain higher levels than this new recommended maximum for calcium of 2.5% (according to their own guaranteed analysis). Check these for yourself and see!' (NutriPet News, 1993)

Quality of the chemicals is important as evidenced by :

'The conclusion that cats fed a single commercial food exclusively were at greater risk for developing taurine deficiency and dilated cardiomyopathy than cats fed a variety of foods is not unexpected. This and other examples of diet-induced disease should serve as a warning to veterinarians who prescribe or endorse the feeding of one food exclusively to any animals, especially for maintenance.'

(Pion, P D et al, 1992)

Frequency of providing the chemicals clearly affects obesity and under nourishment and possibly other aspects of a healthful existence.

Chemical additives, designed to improve colour, palatability or shelf life, when fed monotonously over a long period may be detrimental.

Physical Requirements of Natural Food

As we saw from our early review of natural dog and cat diets the food taken is tough and demanding of the digestive system. In his 1983 Nutrition Course, Professor Kronfeld commented:

'I have a friend who feeds genuine whole chicken to his racing huskies. Stools in his yard sprout feathers like pre-avian reptiles.'

Evolutionary theory of natural selection is now sufficiently well accepted. The understanding being that adaptation occurs at the margin. In the case of carnivores they have adapted to, and now depend upon, their tough chewy food for survival.

Quantity, quality and frequency of physical stimulation

It is apparent that carnivores occupy an ecological niche as processors of bone. The white powdery droppings testify to the efficiency of the carnivore jaws and short muscular digestive tract. Just how the quantity, quality and frequency have a beneficial effect on the muscular tube is not well researched.

In respect of the oral cavity much more is known on the requirements for the correct balance of chewy food stuffs. This knowledge has been accumulated due in part to commonsense but also intense professional and research interest of the human and latterly, veterinary dentists. In short, the correct quality, quantity and frequency of oral stimulation maintains a healthy periodontium and inadequacy of any one or a combination results in periodontal disease.

PERIODONTAL DISEASE

'Several studies have shown that the form of the diet is much more important in controlling plaque build-up and gingival inflammation than is the nutritional content of the diet in dogs. At least over the short medium term, gross changes in carbohydrate and protein content have no effect on rate of plaque build-up. A diet grossly deficient in calcium leads to secondary nutritional hyperparathyroidism and demineralisation of periodontal bone but does not cause more rapid periodontal tissue breakdown. The 'rubber jaw' syndrome of secondary (nutritional or renal), hyperparathyroidism is a periodontosis that does not affect connective and epithelial tissues unless the soft bone permits mobility of teeth that is mechanically harmful.'

(Harvey, 1993)

Periodontal disease is actually a continuing process rather than individual stages, but may be divided up for ease of comprehension.

Healthy - Sharp gingival margin, shrimp colour, normal stippling and no odour.

Grade I - Marginal gingivitis. The leading edge of the gingiva appears inflamed. Odour is usually present.

Grade II - Moderate gingivitis. Inflammation of gingiva with the addition of edema causing margins to swell and begin to roll.

Grade III - Severe gingivitis. Increased edema, red to purple margin with rolling occurring. Beginning pocket formation beyond normal 1 to 3mm depth. No loss of attachment at this point.

Grade IV - Moderate periodontitis. Severe inflammation, deep pocket formation, beginning bone loss with epithelial attachment loss and a slight increase in mobility.

Grade V - Severe periodontitis. Advanced epithelial attachment loss, advanced bone loss, tooth mobility and tooth loss.

The orthodox view has it that 'bacterial plaque' causes periodontal disease. (Harvey, 1993) This is widely accepted despite being unable to satisfy Koch's postulates for bacterial causation. My preference is for an interactive model which says that: **Plaque organisms must be present, physical cleaning absent, and host responses typical and occurring over time.** This accords with the human dentists quadrad of factors viz, tooth, bacteria, food and time. (Gilling, ADA Bulletin, 1993 p18)

Having demoted plaque from primacy in the interaction one can now admit the teething process as an early vital factor. Puppies and kittens cut the first set of teeth between two and six weeks of age. (cf. humans six to twenty-four months). The second set force through the gums with an attendant physiological inflammation between four and six months (cf humans five and half to eighteen years). Foreign body impaction and trauma can be admitted to the periodontal disease picture.

The immune system always plays an intermediary role in the development and rate of progress of the disease. Where there is preexisting immune suppression periodontal disease develops more readily. Cats with FIV or FELV frequently present with a stomatitis. Trench mouth in humans derived its name from the chronically immune-stressed troops who developed a gingivitis syndrome. (Harvey, 1993)

Sir Frank Colyer, the renowned British dentist, spent his lifetime researching the subject and in his eightieth year he states his conclusions:

'Paradontal disease is always associated with an alteration in the physical or chemical character of the diet of the animal - in other words with a departure from natural diet and conditions.' (Colyer, 1947)

Borthwick in his study for the pet food industry states:

'It would appear that the veterinary surgeon/patient approach to reducing periodontal disease in dogs and cats is largely ineffective and that people have come to accept that periodontal disease is inevitable.' (Borthwick, 1987)

Higgins in his capacity as advisor to the pet food industry states:

'It is ironic that preventative dentistry towards the end of the twentieth century is based on what dogs and cats found in nature thousands of years ago.' (Higgins, 1988)

Colyer makes the obvious point that prepared foods increase the contamination of the oral cavity by sticking to the teeth and gums. Milk and tablescraps are equally subject to this error of commission. It is equivalent to the worsening spiral created by a house cleaner who removes no dirt and leaves a trail of muddy footprints.

PERIODONTAL CONSEQUENCES

Opinions within the veterinary profession are divided as to whether periodontal disease has systemic ill-effects. I find it difficult to reconcile how health care professionals might pronounce that a chronic septic focus populated by in excess of 300 different species of bacteria might prove to be innocuous. Dr Jon Lumley comments:

'You do not need a post graduate degree in nutrition to evaluate the effects of raw bones on a dogs dentition - in fact, it appears that the qualification would be a serious disadvantage!' (Control and Therapy No 3406, 1993)

Failure to perceive severe bacterial/toxic consequences is not restricted to vets. In a recent survey of renal transplant units it was found that 4 out of 22 did not schedule dentistry prior to renal transplantation. In conclusion the researchers state:

'A more striking disagreement was what was considered a dental focus of infection since, infection is one of the major complications in renal transplant patients, agreement in this area is of the utmost importance for the standardisation of future protocols. In order to reach agreement and improve protocols greater collaboration will be necessary between dentists and the surgical team.' (Yamatik et al, 1993)

DeStefano *et al* writing in the British Medical Journal, March, 1993 showed a weak correlation between severe periodontal disease and heart disease. They found a stronger correlation between severe periodontal disease and total mortality. Unfortunately they did not put the question as to whether slight periodontal disease could be a sufficient trigger of systemic disease.

Robert Hamlin writes about his:

'Theory for the genesis of certain chronic degenerative diseases of the aged dog and proposes a toxic sequence of events.' (Vet Scope International, 1992)

Gary Beard speaking in July, 1991 said:

"The haematogenous spread of bacteria, originating in dental calculi and embolised by manipulation of the gingival capillaries during dental procedures and even mastication, have been documented in man and other animals. This spread of bacteria, or anachoresis, to other organ systems can result in peritonitis, glomerulonephritis and endocarditis."

"Veterinarians have long suspected, and research supports, the fact that periodontal disease can become systemic and can predispose the animal to problems such as right side heart failure, hepatic compromise, renal failure and bone marrow depression. This anachoretic effect can have drastic repercussions on the overall health of the pet and represents one of the greatest challenges facing small animal practitioners today."

Our subjective assessment of the situation is that most of the degenerative diseases treated in modern veterinary hospitals in fact derive from the processed pet foods/ periodontal disease nexus.

FOUL MOUTH AIDS - A DIETARY DISEASE

The following paper was published in the Post Graduate Committee in Veterinary Science's Control and Therapy Series.

Raw Meaty Bones Promote Health Control and Therapy No. 3323

The raw versus processed food debate became obstipated. A stand-off occurred across the philosophical and scientific divide with little new material being exchanged and certainly no movement of personnel between the camps.

The methodological incompatibility of the two factions were as the inhabitants of Lilliput to those of Brobdingnag.

With the emergence of some recent information, the latter day Gulliver can catch a glimpse of the rich new areas of inquiry waiting to be explored.

The Zubrycki silky terriers represent just such a case. From November '85 to August '91, Tuffy and Blossom were presented at the surgery on numerous occasions. Often with vexatious non-specific illness/lethargy/dermatitis.

A recurrent complaint was that Tuffy had attacks of the 'scurries'. Various determined to be hyperventilation or bouts of mad anxiety. Several theories and treatments were proposed by ourselves but to no avail.

On 6/8/91, at time of annual vaccination, it was determined we should be entirely resolute in our dealings. The owners were persuaded to adopt a thorough approach to flea control, and the dogs were booked in for radical dentistry. Previously our advice to give an occasional raw bone had been overlooked. Now we insisted that a raw meaty bone should be a staple of the diet.

The WCC of 12/8/91 were:

	TUFFY	BLOSSOM	Normals
Tot. WBC	5.1	5.2	6.0-14.0
Differential WCC (absolute)			
Neut.	3.4	4.0	4.1-9.4
Lymph	1.5	0.8	0.9-3.6
Mono .	0.1	0.2	0.2-1.0
Eos.	0.2	0.3	0.1-1.2

Several times, in the intervening weeks, I met Mrs. Zubrycki in the street. Each time she remarked on the lack of 'scurrying' attacks, much improved skin, vitality and breath.

On 17/6/92 she was persuaded to bring the dogs back for follow up and blood test. The results are reprinted below.

	TUFFY	BLOSSOM	Normals
Tot. WBC	8.5	8.2	6.0-14.0
Neut.	4.8	5.9	4.1-9.4
Lymph	2.7	1.7	0.9-3.6
Mono .	0.4	0.4	0.2-1.0
Eos.	0.5	0.2	0.1-1.2

Some gingivitis and tartar accumulation was evident where opposing teeth had been removed, but otherwise the mouth was healthy.

Comment

A number of explanations could be postulated to explain the findings. My rude hunch is that just like the millions of other process food fed dogs, the sequence of events is as follows.

Traumatic gingivitis of teething and plaque-induced gingivitis of normal living becomes exacerbated by calcification of plaque. All of the former remaining unchecked by nature's cleaning, polishing, washing action at feeding sessions.

During the canine evolutionary phase there would have been no pressure to cope with chronic mouth lesions.

The modern dog protected from heat, cold, starvation and predation has to withstand the affront of a mouthful of gram negative bacteria and toxins.

Ill-equipped for the task, the bone marrow suffers toxic suppression and a concomitant bacteraemia compounds the problem. The whole noxious mess occasionally punctuated by dramatic demonstrable disease entities, (septic arthritis, endocardiosis, nephritis). More usually characterised by suboptimal health of an insidious nature running parallel with the aging process and confused with the same.

This paper has now been expanded into a survey of the first eight dentistry cases presented at our clinic with a low white cell count and low RBC.

Not all animals had RCC's performed as initial investigation was for WBC changes. The animals were not objectively assessed for dehydration. Tess Abson had complete laboratory profile and heartworm, microfilaria and serology testing. She was noticeably dehydrated and thus would provide erroneously high base readings at first presentation. She subsequently gained 20% in weight with a presumed corresponding increase in total circulating erythrocytes. Accordingly adjustment should be made for her minus 3% RCC change in value.

Changes in RCC varied from minus 3% to 46% increase. Average 28%.
 WBC counts varied from 37 to 150 % increase. Average 78%.
 Neutrophil counts varied from 0 to 170% increase. Average 77%
 Lymphocyte counts varied from 8 to 136% increase. Average 72%

By completing dental extractions/scaling prior to the change of diet could only serve to accelerate improvement of those severely affected. It is acknowledged that diet alone can bring about improvements in oral hygiene and thereby health. This test confirms the feasibility of preventing the accumulation of dental calculus in experimental beagle dogs by regular feeding of oxtails'. (Brown and Park, 1968) 'Her dental hygiene and lack of dragon breath is a joy to behold. She enjoys her six kilometre walk everyday on her tiny little legs and has a new zest for life.' (Consultant, obstetrician and gynaecologist commenting on dietary change for elderly terrier).

Results of owner observations were arguably more valuable than the scientific parameters. Owners living in close association with their pets are able to make value judgments which mostly depend on behavioural changes.

Eg "Didn't know X was sick".

"Like a kitten again".

"Stopped the strange behaviour pattern".

"Could not sleep was up all night, now sleeps soundly."

These subjective assessments add support for the 'Cybernetic Hypothesis' which predicts that dogs and cats which do not receive the 'wash, scrub and polish' of natural feeding will suffer a foul mouth and severe health consequences.

Four cases were initially presented for annual vaccinations. These were perceived as 'normal' by their owners. The figures are tabulated here.

	RCC($\times 10^{12}/L$)		WBC($\times 10^9/L$)	
	Before dentistry	After dentistry	Before dentistry	After dentistry
Case 1	6.00	7.10	5.10	8.50
Case 2	5.60	7.40	5.20	8.20
Case 3	5.27	7.68	4.90	7.80
Case 4	<u>6.03</u>	<u>8.83</u>	<u>5.70</u>	<u>8.00</u>
Average	5.72	7.75	5.22	8.10

The average RCC increase was 35% and the average WCC increase was 55%.

Sources of Error

That every animal tested showed such a dramatic improvement in blood values and general health is remarkable given that a number of interactive factors would be expected to create errors.

- a. Elderly patients addicted to processed foods are not good candidates for diet change. Owner compliance was often in question.
- b. Once established periodontal disease can be expected to persist albeit at a reduced level, even after extensive dental work.
- c. If the observed changes in blood parameters and health were triggered by chronic periodontal disease the withdrawal of the stimulus would not necessarily result in abatement of the clinical condition.
- d. Other preexisting pathology could be expected to exert an influence on blood values and perceived health status.

LABORATORY TESTS

The reference range referred to by ourselves originated from Macquarie Vetnostics in Sydney. Dr B Duff states: 'Our reference ranges were derived from approximately 100 animals presenting at Sydney general practices in 1986. Veterinarians submitted blood according to a recommended protocol. The animals were selected as being 'clinically normal' as opposed to animals specifically raised for the purpose of biomedical research.' No comment could be made on the diet and oral health of the survey sample.

Veterinary Pathology Services' Dr Bill Vernau states: 'Our reference range was derived from 40 dogs and 40 cats between 1989 and 1991. These animals were accessed via veterinary clinics. They had to be 'healthy' animals more than one year of age presented for vaccinations etc.' Dr Vernau could not comment on diet and dental status but the animals were supposedly 'healthy' and did not require dental 'prophylaxis'.

Comparable ranges published in Kirk's "Current Veterinary Therapy No. 11" derived from the University of Guelph between 1989 to 1991. 'There was a mix of mongrels and pure-breds. All were vaccinated against distemper and hepatitis and treated for parasites. They were fed a balanced commercial diet (Hills Science Diet, wet and dry). Dogs were held in a preconditioning unit four to six weeks prior to testing. All dogs were healthy and Dr Lumsden states that, 'none had periodontal disease'. Cats had a similar protocol, age ranges six to twenty-four months.'

	<u>MVS</u>		<u>VPS</u>	
	Dogs	Cats	Dogs	Cats
RCC (x10 ¹² /L)	5.00-8.00	5.50-10.0	5.5-8.5	5.5-10.0
WBC (x10 ⁹ /L)	6.0-14.0	6-16	6.0-17.0	5.5-19.0
Neuf. (x10 ⁹ /L)	4.1-9.4	3.8-10.1	4.0-12.0	2.0-13.0
Lymph (x10 ⁹ /L)	0.9-3.6	1.6-7.0	0.9-5.0	0.9-7.0
Mono (x10 ⁹ /L)	0.2-1.0	0.1-0.6	0.1-0.6	0.1-0.4
Eos. (x10 ⁹ /L)	0.1-1.2	0.2-1.4	0.1-0.5	0.1-0.8

	<u>GUELPH</u>	
	Dogs	Cats
RCC(x10 ¹² /L)	5.6-8.5	5-10
WBC(x10 ⁹ /L)	6.1-17.4	5.5-15.4
Neut.(x10 ⁹ /L)	3.9-12.0	2.5-12.5
Lymph(x10 ⁹ /L)	0.8-3.6	1.5-7
Mono.(x10 ⁹ /L)	0.1-1.8	0.0-0.85
Eos. (x10 ⁹ /L)	0.0-1.9	0.0-0.75

We did have concerns and pathologists are the first to admit the fallibility of single tests and the interpretations arising. When a patient (Tess Abson) shows a blood profile within the reference range although 20% underweight and chronically ill one must question the validity of the reference range. When the patient subsequently glows with relative health (for a twelve year old with a mammary carcinoma, cardiopathy, hepatopathy and no teeth in the upper jaw) but the pathologist comments on several perceived problems, then we have serious cause for alarm.

General practitioner awareness of periodontal disease scarcely existed in 1986 when Macquarie Vetnostics Services obtained their results. Things have not progressed greatly since that time. One must be suspicious of the oral hygiene claims for the sample populations used by Veterinary Pathology Services and the University of Guelph. Dr Lumsden's comment that the laboratory animals did not have periodontal disease is at variance with: 'Dr Dan Carey of the Iams Corporation maintained that animals on canned food would require six monthly prophylactics. Dr Jo Wills, Scientific Affairs Manager - Waltham, expressed as a point of pride that their research animals received six monthly prophylactics to resolve/control dental health problems.' (Lonsdale, 1992 - Unpublished)

The conclusion must be drawn that reference ranges have been established utilising periodontal disease-affected animals. It is therefore likely that the reference ranges are too wide. At the low end chronic disease affected animals suffering Acquired Immune Deficiency are designated as 'within normal limits'.

This survey did not look at animals through all stages of life and periodontal disease, however basic pathological principles tell us that during inflammatory phases of the disease the cellular counts could rise and accordingly falsely extend the reference range upwards.

Similar remarks appear to apply for erythrocyte counts. Although within the laboratory reference range four of the six animals tested appeared to have suffered relative anaemia in conjunction with their periodontal disease.

The summation of these effects is that: artificial diets and periodontal disease have been factored into the 'normal' reference ranges.

Part of paper (submitted for publication, Lonsdale, 1993)

FELINE EOSINOPHILIC GRANULOMA DISEASE COMPLEX

Feline Eosinophilic Granuloma Disease Complex. Control and Therapy Nol 3271

The severity of the lip and tongue lesions in Ming Hobbs the 7 year old de-sexed female cat cause me to reproduce the Anapath histology report in full.

Microscopic Description

Lip: The biopsy shows a large ulcer in the skin covered by a thick necrotic crust containing numerous large colonies of bacterial cocci. There are heavy infiltrates of eosinophils throughout the granulating ulcer bed and underlying dermis.

Tongue: The large yellow nodule is an area of reactive lymphoid follicle formation, interspersed with mixed inflammatory cell infiltrates including numerous eosinophils, mast cells and plasma cells. The smaller lesions show areas of granulating ulceration with extensive eosinophilic inflammation and superficial necrosis and bacterial infection.

Final Anatomic Diagnosis

1. Multifocal severe ulcerative eosinophilic dermatitis and glossitis with superficial bacterial infection.
2. Focal moderate lymphoid hyperplasia with interspersed eosinophilic inflammation, tongue.

Comment

The lesions on the lip and tongue are consistent with eosinophilic granulomas, each with significant secondary superficial bacterial infection. One of the nodules in the jar labelled "tongue" was an area of lymphoid hyperplasia, probably in response to the chronic inflammation and infection in the mouth. Many cats with eosinophilic granuloma-type lesions have underlying hypersensitivity problems (food allergy, atopy etc.)

The treatment on 28.04.92:

- Debridement of tongue
- Dental overhaul
- Long acting penicillin, Dexamethasone I.M.
- 10 mg Depopred intra-lip lesion
- 5 mg Megestrol Acetate every 2nd day for 2 weeks

The diet was changed to include a raw chicken wing or ox tail or similar every day. At 28.05.92 Ming is thoroughly enjoying the new diet and the mouth lesions are totally healed.

Comment

Never before have I insisted on a total dietary change nor have I seen such a rapid recovery. It will take me years to accumulate a series of such cases. If other practitioners try this approach we can quickly determine if there is a diet, periodontal disease, eosinophilic granuloma nexus.'

The above was the first of a series. In the mild cases we now dispense with the usual Megestrol Acetate and corticosteroids and treat with dental and dietary change alone. Rather than see these signs as part of a single disease, we consider it to be part of a larger immune system disease complex of which milary dermatitis, FLUTD, lymphocytic histiocytic enteritis, plasma cell pododermatitis etc are examples. Deposition of any or all of the following are the main histological findings: Eosinophils, histiocytes, lymphocytes, neutrophils, monocytes and plasma cells.

PLASMA CELL PODODERMATITIS OF CATS

'Plasma Cell Pododermatitis of Cats Control and Therapy No. 3270

The extensive feeding of processed food and the equally extensive prevalence of periodontal disease has come under scrutiny. Recently I have dealt with two cases of an obscure nature. The absence of raw bones, or presence of periodontal disease seems to be implicated somewhere in the pathogenesis.

Muller, Kirk and Scott state that "The cause of Plasma Cell Pododermatitis is unknown. Hyper gammaglobulinaemia, lymphocytosis and the histopathologic findings suggest an immunologic basis. The therapy of choice is not clear".

Case 1

01.07.91 Toby, 4 year old de-sexed male. Clinical findings pododermatitis, and as with any 4 y.o. cat on processed food, moderate to severe periodontal disease. Treatment consisted of dental overhaul, post op. course of amoxycillin. A raw chicken wing to be included in diet daily. Histopathology confirmed the diagnosis.

Case 2

29.01.92 Alf, 7 year old de-sexed male. Findings and treatment same as for Toby. Histopath not performed. In both cases the ulceration healed in about 7 days. The pads have remained soft but otherwise there has been no relapse up to the time of writing.

Comment

The beauty of these cases is that with a change of diet the condition was reversible. Such an expedient is not available to us in a host of end stage auto immune conditions, nephritis, cardiomyopathy etc.

Nevertheless, I believe it is diet and diet-induced periodontal disease which is the trigger. Assuming this to be so, then we are under a dual obligation.

- *To advise and continue to remind our clients of the need for daily raw bones before irreversible disease sets in.*
- *Conduct controlled studies to elucidate the precise mechanisms.'*

We are pursuing this research and our findings to date suggest that cats with severe periodontal disease will have a variable range and population of inflammatory cells in their foot pads.

FLUTD

FLUTD is one of the intractable diseases encountered in feline practice. The July, 1993 edition of the JSAP carried an article by Sydney University, Associate Professor ADJ Watson in which he reviewed the work of Markwell (JSAP 34 pp157-162) and commented on the work of Osborne et al.

A significant point was that struvite crystalluria is a common finding in normal cats. He comments that:

'Osborne and others (1992) hypothesise that matrix - crystalline plugs obstructing the urethra are formed because of the coincidence of urinary tract inflammation and crystalluria. As the causes of inflammation in these patients are unknown, 76.2% of cases of FLUTD in the series of Osborne and others (1989) can be said to have had unknown aetiology'.

In the limited number of cases biopsied by us the cellular infiltrates in bladder and urethra have been similar to our random foot pad samples. It would seem that cats with diet-induced periodontal disease are prone to the deposition of inflammatory cells in numerous tissues including the bladder and urethra. If this proves to be the case then 76.2% of cases in the Osborne et al series (1989) could possibly be attributed to this source.

In the other 23.8% of cases the inflammation has been attributed to a range of causes. Our belief is that in these cases periodontal disease-induced inflammation may well have played a principle role in the aetiopathogenesis. The concomitant belief being that the viruses and bacteria previously implicated as sole causative agents may now be seen either as incidental findings or another means by which the urinary tract inflammation is exacerbated.

It is acknowledged that our evidence is scanty in this area since we need to keep our clinical cases alive. One case monitored by ourselves continues with a high level of crystalluria. This caused us consternation at first but now could perhaps be seen as an aspect of the normal. At the time of first presentation with blockage this cat had its periodontal disease treated by radical dentistry. The cat is now maintained on a diet of raw chicken wings and raw rabbit legs without recurrence of periodontal disease or blockage of the urethra. Of course, we are not at liberty to biopsy the bladder and urethra in order to ascertain the presence or absence of inflammatory infiltrates. (The Cybernetic Hypothesis of Periodontal Disease in Mammalian Carnivores predicts a cascade of pathological consequences for periodontal disease-affected animals. See page 23)

THE INABILITY OF THE CLINICAL DIAGNOSTIC PATHWAY

Historically the function of medicine has been to diagnose extant clinical conditions. Clinicians experience enough difficulty making diagnoses and recommending treatment once pathology is in place. That the activity is retrospective has not hitherto caused much concern. (People pay doctors for disease treatment not health maintenance)

Often times in human medicine the patient can advise the clinician of symptoms. The very opposite is the case with animals both wild and domestic for they actively seek to disguise signs of chronic ill health. When one considers that the body is extremely adept at compensating whether it be for liver, kidney, bone marrow or similar failure then making a diagnosis prior to the end-stage collapse of the compensatory mechanism can be a difficult task.

That is, if one restricts oneself to the orthodox use of the clinical diagnostic pathway. If, however, one takes the view that all animals should be on a more nearly natural diet and free from periodontal disease then creation of health very often precedes identification of disease. This occurs because the basic assumption is made that diet and periodontal disease have a major impact on the wellbeing of the patient. Alteration of these two factors either solves the presenting problem or makes for a sound basis upon which to pursue further diagnosis and treatment. When presenting their animals for vaccination owners frequently believe them to be well. Change of diet at this time is frequently attended by an improvement in vitality. Owners are indignant and surprised as to how unwell their pets have been.

The following sets out in simplified fashion how the veterinarian possessing a high index of suspicion regarding the diet/periodontal disease/general health nexus takes cumulative decisions differing from his orthodox counterpart when working through the clinical diagnostic pathway.

One piece of information abstracted from the orthodox school of thought does in fact offer insight.

'Subjective assessment can be just as important and by its nature is accepted with less stigma and finality, than is a hard figure, which is often given more authenticity and authority than is deserved'. (Atwell R, 1992)

A QUESTION/TEST	B OBSERVATION	C ORTHODOX VET ATTITUDE	D HIGH INDEX OF SUSPICION VIEW
<u>Presenting Signs and Owner Observations</u>			
Tell me your problems	Sleeps a lot	Older dogs frequently do	Animals with chronic periodontal disease frequently do
	Restless sleeper - howls a lot	Ditto	Ditto
	Seems a bit stiff	Ditto	Ditto
	Seems bad tempered	Many cats are	Cats with periodontal disease and 'neck' lesions suffer much pain
<u>History Taking</u>			
What diet do you feed?	Commercial 'complete' and balanced' food	Excellent	That's a worry
Do you offer bones?	Large ox bones once a week	Good	That's a worry
Is your animal listless and slow?	Yes	Usual	That's a worry
<u>Clinical Examination</u>			
Cursory examination of mouth	Nothing noticed due to poor patient cooperation	All is probably OK	Visual observation yields partial information only
Sniff the breath	Rancid	This test not performed	That's usual, highly significant and likely to respond to dietary change
Skin/coat condition	Poor	That's usual	That's usual and likely to respond to dietary change.
Abdomen shape	Flabby	Ditto	Ditto

Clinical Aids

Thermometer	Temperature normal	That's OK	Thermometer seldom yields useful information in chronic disease
Stethoscope	Unremarkable	That's OK	Cardiac and pulmonary signs undetectable until too late to reverse

Clinical Pathology

Haematology	Within reference range	That's OK	Reference range misleading
Biochemistry	Within reference range	That's OK	Frequently within the range until too late to effect change

Ancillary AidsGeneral Anaesthetic Examination

a)	Oral	Apparently normal	That's OK	Periodontal disease is insidious and hard to detect. Probing, tooth movements, gum shape - highly unreliable
b)	Other	Apparently normal	That's OK	Conscious animals do not relate how they feel. Anaesthetised animals reveal even less.

X-Rays

a)	Oral	Unremarkable	That's OK	Highly unreliable
b)	Whole body	Unremarkable	That's OK	Collagen and other periodontal-induced diseases do not show up.
c)	Whole body	Heart, liver, kidney abnormalities detected	Needs treatment	Probable over-diagnose the problems. Constant toxemia from mouth likely chief problem.

Diagnosis

None made	Leave as is	Change diet +? scale teeth
Suspect bacterial disease	Antibiotic treatment trial	Antibiotic treatment trial + change of diet +? scale teeth
Suspect immune problems	Steroid treatment trial	Steroid treatment + change diet + ? scale teeth

Prognosis

Standard for age of animal	Will have recurrent problems	Will likely not see the patient for several years
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Several other issues help, even ensure the status quo.

- a) **Professional Conservatism** - An overweening belief in the validity of existing protocols characterises the veterinary endeavour. Practitioners are generally reluctant to think outside the square. When new ideas are admitted to the belief system it is usually through the agency of an 'overseas expert'.
- b) **Clinical trials** - To my knowledge all investigations are carried out on processed food fed, periodontal disease- affected animals. Consequently the orthodox veterinary scientists working in the small animal clinical investigative area have never employed a legitimate control group and have therefore allowed the huge snafu detailed in this paper to remain undetected.
- c) **Litigation** - In the litigation-conscious USA the leaving of tooth roots in the gums is a punishable offence. The vast over-servicing of the clients and the sale of processed pet foods is not.
- d) **Peer Review** - Articles submitted for publication on this new topic are likely to be refereed by adherents of the orthodox view. (The pet food industry supports, and is supported by, vets in numerous different ways.) No prizes for guessing the outcome.
- e) **The Media**. The fourth estate is supposedly the last safeguard to the freedoms and integrity of our society. Straight away we must acknowledge they have been infiltrated by the major commercial interests. Advertising revenue and mutual favours count. In our own experience journalists have frequently identified with the sentiments reflected in this paper. However unsafe libel laws have prevented a thorough airing of the allegations.

CYBERNETIC HYPOTHESIS OF PERIODONTAL DISEASE IN MAMMALIAN CARNIVORES

The following is part of a paper describing an evolutionary/cybernetic hypothesis. It serves to explain why periodontal and other consequent diseases are not necessarily a blight on animal populations. In fact from a species point of view, it demonstrates how the workings of the animal's immune system at first protects the individual and then subsequently helps to sacrifice that individual in order to protect its gene pool. There remains much to learn but to date every branch implication of this hypothesis traced by us leads to a clear and useful understanding.

That processed foods are unsuitable for lifetime feeding of pet animals is beyond doubt. Both the chemical and physical aspects are damaging with, I believe, the emphasis residing on the physical.

As a theoretician impressed by the delicate cybernetic balance of nature there seems to be the workings of an invisible hand here. A small effort enables the formulation of the cybernetic hypothesis of periodontal disease.

Periodontal disease is the subtle dependable disease which modulates the effects of starvation in wild carnivore population dynamics.

- *A 'feedback loop' ensures daily chewing of raw meaty bones sanitises the oral cavity of the successful carnivore.*
- *Failure of the 'feedback loop' facilitates multiplication of pathogenic bacteria within plaque and development of periodontal disease.*
- *Incremental losses of carnivores and herbivores are thereby facilitated.*
- *The populations of herbivores, carnivores and bacteria are maintained in dynamic equilibrium.*

An Hypothetical Example

Now let's consider the hypothetical case of a pack of wolves and a flock of sheep within a finite environment. The sole crude determinant of success of the wolves or the sheep is starvation. If sheep numbers increase they eat out the herbage and proceed to die. At the same time the wolf numbers increase at a great rate to achieve maximum concentration just as the sheep are dying of starvation. The wolves die of starvation. The violent fluctuations suit neither the environment, the sheep nor the wolves. Now introduce periodontal disease and wolf sensitivity to starvation increases several fold. On day one ten wolves dine on sheep. On day two nine wolves dine on sheep and the tenth wolf goes hungry. On day three our hungry wolf has to contend with three additional problems.

- a. *Nine contented, well-fed wolves.*
- b. *His own twenty-four hour starvation*
- c. *Increased plaque accumulation.*

The unequal struggle begins as his 'appointed part in keeping down numbers' is made redundant. The pathogens benefit. Their numbers sharply increase by day fourteen. The sheep gain since only nine wolves now give chase.

It is inconceivable that the stench would not communicate powerful signals to other wolves and prey alike. Wolf number ten, aware of his condition, would probably prefer to remove himself from contention and slink away to die. Each wolf in turn will occupy the number ten position and an abbreviated period of dying is highly desirable.

Periodontal Disease Allows Immense Flexibility of Control.

If she-wolf finds hunting easy then she will return chewy food to the litter on a daily basis. It could be anticipated that wolf cubs cutting their teeth are highly vulnerable to the periodontal disease organisms. However, if sheep numbers are high then more cubs need to be reared in order to perform their regulatory role.

The next phase of increased sensitivity to periodontal disease is the four to six month age range. Periodontal disease organisms can surge in numbers in the inflamed mouth of the cub whose secondary dentition is erupting. If sheep numbers are extremely high even the blundering efforts of the adolescent wolf will be rewarded with adequate food supplies. Consequently the gums will be massaged, the periodontal disease kept at bay and the wolf will mature to become an effective killer of sheep.

Bacteria

Bacteria, particularly anaerobes, were the earliest inhabitants of the planet. Their evolving interest is on a par with the interests of wolves. The vigorous chewing on raw bones render the mouth of the carnivore an inhospitable place, except for the enamel sulcus of upper, pre-molar four. It is usual to find a bead of calculus immune from the abrasive forces and containing a full complement of plaque bacteria lodged in this sulcus. It is easy to understand that once the feeding function of the host declines the complete colony of plaque organisms can readily colonise the gingival sulcus.

Sheep

The sheep in our example benefit from a balance of wolf and bacteria numbers.

- All bacteria and no wolves leads to over multiplication of sheep, mass starvation and population destruction.
- All wolves and no bacteria leads to intense predation pressure and population destruction.

Further Implications

We can see the supreme efficacy of the negative/positive feedback loop. Nature has struck the perfect balance ensuring that the wolf's very strength carries with it its inherent weakness.

Paradoxically it is the susceptibility to periodontal disease of the individual carnivore which confers a survival advantage on the species. The carnivore susceptibility to periodontal disease as opposed to the omnivore and herbivore can be explained thus - in the extreme, herbivores (e.g. sheep), can all be at the brink of death by starvation and then, with the next shower of rain, their feeding fortunes recover. No particular advantages would accrue to the flock which reduced its numbers dramatically at the onset of a drought.

Human omnivores appear to withstand a level of periodontal disease more readily than carnivores. As a cooperative species even periodontal disease affected individuals could be of benefit to the survivability of the group.

Conventional wisdom has it that the immune system is necessary to protect the host. This is a simple, linear 'cause and effect' concept that takes little account of degree or time within the holistic framework. The 'Cybernetic Hypothesis of Periodontal Disease' allows a range of options depending on degree and time. This can be summarised as two functions thus:

- a. In a short time, and with minor challenge, the immune system will provide a minor degree of protection sufficient to protect the host genes and therefore the gene pool.

- b. *As either the time frame or the degree of challenge increases the immune system will provide a major response. This major response will serve to expedite the demise of the host genes. The concomitant of this being that the host gene pool (the critical issue) will be protected.*

It is important to note that this graduated response facilitates the shaping of populations. ie the animal which employs the immune system least will be the best adapted to its environmental niche and therefore have the greatest breeding potential.'

(Part of paper submitted for publication, Tom Lonsdale 1992)

Symbiogenesis, the mutual evolutionary adaptation of species, is gaining in scientific significance. (Sir Crispin Tickell, ABC Radio National Science Show, 28 August, 1993) I am prepared to venture an opinion that we can expect similar developments in veterinary science.

BENEFICIAL CONSEQUENCES OF THE VETERINARY SNAFU

'Truth emerges more readily from error than from confusion' (Francis Bacon)

If Bacon is right then the giant insidious error of processed pet foods should give rise to some major insights. Redoing the work that has passed for 'science' should occupy researchers for a considerable time and elucidation of some of the pathways prove interesting. Practitioners should be kept busy correcting the wrongs of previous advice until firm preventative protocols are in place.

'If you are not part of the answer, you are part of the problem.' (JFK)

There can be no doubt that there are people in authority, and those who have built their careers, teaching the processed pet foods mythology. That individual careers and future exam results may depend on the bias of authority figures requires careful negotiation.

In order to become part of the answer I suggest you need to forge a pact with those employers and teachers previously associated with the problem. This will enable a safe passage across the transitional landscape.

CONCLUSION

Processed pet foods seem to be an inescapable part of modern consumerist society. Despite the complacent belief that all is well, a closer look reveals the opposite. That an industry could grow so large and be so lacking in redeeming features is the more outstanding. One's consolation must be in the knowledge that it will not always be thus. The truth must finally out leaving the manufacturers and their collaborators as the final casualties of pet foods' insidious consequences.

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SPECIAL REPORT

PET HEALTH ALERT!

Important new information revealing why pets are increasingly suffering from heart disease, arthritis, dental disease, diabetes, cancer, auto-immunities, food allergies, obesity and a host of skin, coat, eye, ear, and digestive afflictions. This special report can arm you with the knowledge necessary to keep your pet from being a victim.

You'll learn:

1. Why the "complete and balanced" claim on pet foods has resulted in deadly disease
2. About a grocery store food which can prevent the present dental disease epidemic
3. How the advice "don't feed table scraps" has killed thousands
4. Why laboratory testing and fat diets, such as rice and meat, seldom solve food allergies
5. That premium diets thoroughly tested, have doomed untold numbers of pets
6. The ignored dangers of pet foods with shelf life guarantees of six months or more
7. A simple guiding principle to help you make your own best decisions not only for your pet's health, but your own.

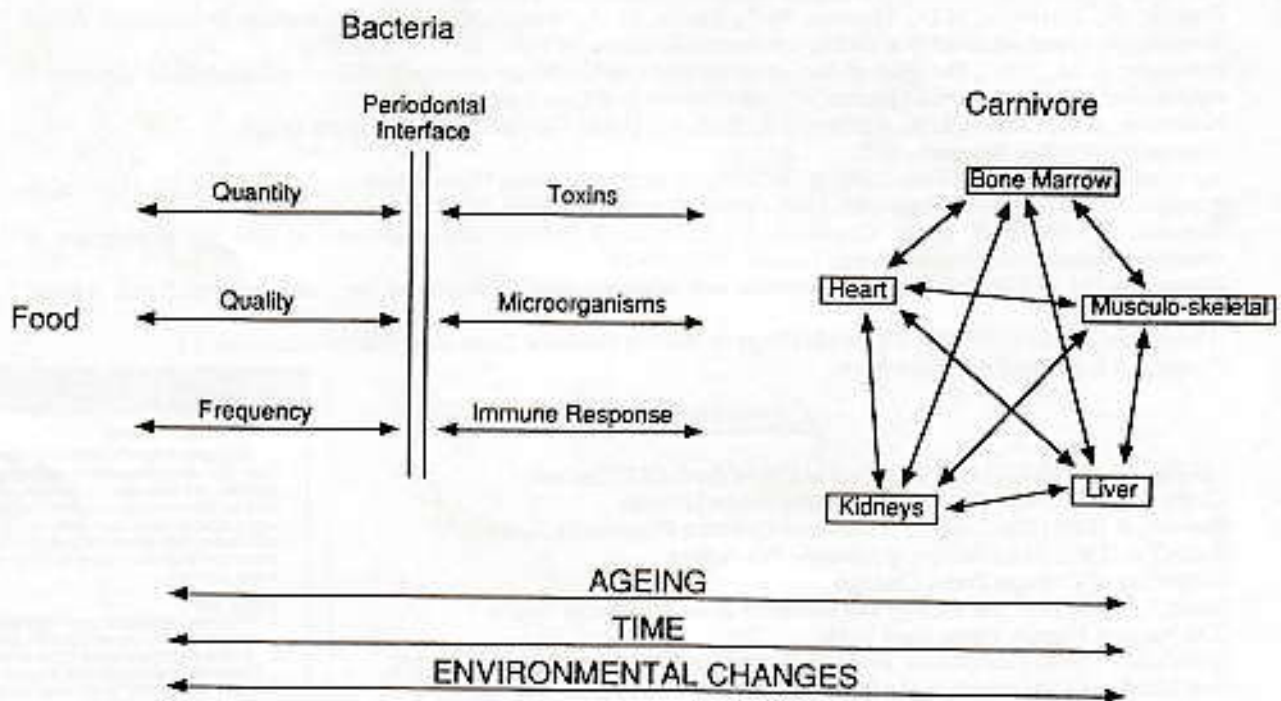
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Dr. R. L. Wysong
1880 North Eastman Road
Midland, MI 48640-5896



This is a cartoon.

Diagram of Cybernetic Hypothesis of Periodontal Disease in Mammalian Carnivores



Oral Disease in Cats and Dogs

No. 3128 Tom Lonsdale, Riverstone Veterinary Hospital, Garfield Road, Riverstone, NSW 2765

Tel: (02) 627 4011 29.08.91

The stench of stale blood, dung and pus emanating from the mouths of so many of my patients has finally provoked this eruption of dissent.

The sheer numbers passing through the practice, when extrapolated to the world situation, tells me that oral disease is the source of the greatest intractable pain and discomfort experienced by our companion animals.

This is a great and mindless cruelty we visit upon our animals from the whelping box to the grave. Just imagine having a mouth ulcer or toothache for a lifetime.

The internal factors are these:

Puppies and kittens cut their deciduous teeth between 2 and 6 weeks of age. An inevitable consequence of this is gingivitis. A diet of processed food ensures lack of gum massage and the gingivitis persists. The growing animal develops grooming behaviour and adds hair and faecal materials to the accumulated food scraps clogging the interdental spaces.

Between four and six months of age the permanent teeth erupt into a soup of blood, pus and saliva. The gingivitis is now well established and not infrequently one finds a young kitten or puppy with a complete set of deciduous teeth hanging from inflamed gingival shreds.

Even on a diet of processed food the deciduous teeth must eventually fall out. The permanent teeth come to occupy a diseased mouth and by this time the animal has learned not to chew on anything because of the pain involved.

The exquisite mechanism of teeth and gums, designed by nature to be cleaned, massaged and stressed daily, is left to rot. Compare mining machinery properly maintained which can excavate a mountain but by disuse can be rendered useless.

A lifetime of inescapable pain is bad enough. The sequelae of endocarditis, iliac thrombosis, nephritis and all those other entities attributable to a permanent septic focus finally condemn this situation as being intolerable.

The external factors are these:

Foremost are the pet foods which are promoted as "complete diets only water needed". Along with petroleum and coffee, pet food is one of the biggest industries world wide.

Reacting to the now universal dental needs of our animals the dental instrument, the dental machine and even the imitation bone industries have flourished.

I believe many veterinary practitioners have reacted passively, perhaps providing some dental care as an after thought and virtually no advice. Since cats and dogs don't complain, owners don't realize and don't seek advice. Many vets just don't seem to be proactive in this vital area.

As vets we need to provide more than palliative care. Brushing teeth and regular prophys are not enough when advice on diet and food to massage the gums is so vitally important.

What's to be done?

a. The internal system

Simple, give our cats and dogs their basic rights of a healthy functioning mouth. Supply raw chicken wings, chicken necks or oxtail to young/small kittens and puppies when they most want to chew and explore.

Help them to control their two bouts of physiological gingivitis before it becomes pathological. Older larger dogs need raw bones and cats need raw meat on the bone.

b. The external system

The external commerce driven system did not exist before the 50's and now it seems such an inescapable part of life. It may take a while to alter course.

The profession can do much to re-educate itself and in turn the public. A few practice surveys and university based research projects would set the tone.

The pet food manufacturers will need advice on the problems caused by processed food. One pet food company gives bi-annual "prophys" to its research animals. (personal communication)

However, they may be persuaded to voluntarily print cautionary advice on their packaging.

What benefits can we expect?

Innumerable. Pets will be fed on cheap unprocessed bi-products some of the time. The environment will benefit, clients will be an average \$1000 per animal/per lifetime better off. Certainly the pets can be expected to live longer as they enjoy their lives seeking to "steal bones out of the freezer".

As vets we will be happy to see more pain free, healthier pets and grateful owners.

Tom Lonsdale and Associates

Veterinary Surgeons

Riverstone Veterinary Hospital
Garfield Road
Riverstone NSW 2765

Phone: (02) 627-4011

Fax: (02) 627-4285

Diet is the Cornerstone of Good Health

The article overleaf was written to alert the veterinary profession to some of the dangers encountered by feeding processed pet food.

Dingoes and feral cats keep themselves healthy by eating whole carcasses. The closer you come to this ideal for pet dog or cat the better. The recommendations provided are proving to be economical and practical for most people. The pets fed this diet glow with health as compared with the processed food-fed majority.

It is simple, it is cheap, and they enjoy it.

Dogs

1. Fresh water constantly available
2. Raw meaty bone/chicken wings/whole fish/rabbit or similar should form the bulk of the diet
3. Table scraps both cooked and raw (discard cooked bones)
4. As the last resort convenience processed 'all in one' dry foods.

Cats

1. Fresh water constantly available
2. Raw meaty bone/chicken wing/quail/rabbit leg whole fish or similar should form the bulk of the diet
3. Table scraps both cooked and raw (grate vegies, discard cooked bones)
4. As the last resort convenience processed canned food.

Puppies and kittens can be fed basically the same way – just mash or grate their food and feed little and often. Soon they will be gnawing and chewing.

Adult dogs and cats benefit from one day of fasting each week. Old dogs and cats addicted to a laxative diet may experience initial difficulty when changed onto a natural diet.

Create variety. Any nutrients fed to excess can be harmful.

Avoid:

Milk – Associated with diarrhoea. Animals drink it whether thirsty or not and consequently get fat. Milk sludge sticks to teeth and gums.

Exclusively lean meat – Not balanced.

Exclusively vegetable – Not balanced.

Cooked bones – Get stuck.

Mineral & vitamin additives – Create imbalance.

Exclusively processed food – Can create dental and other diseases.

There are no prizes for the fattest dog on the block nor the fastest. Feed pets for a lifetime of health. **Prevention is better than cure.**

IMPORTANT: Please note that individual animals and circumstances may vary. We are always happy to discuss your specific needs.

