

The treatment of gastrointestinal and other common disorders affecting wildlife in care using Herbal Medicine, Nutritional supplements and Homeopathy

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Introduction

This presentation will discuss the treatment of common disorders affecting wildlife in care and explore the various alternative treatments that could be used. One of the most frequent health problems affecting Macropods and Marsupials in care is diarrhoea, which can have several origins including incorrect milk formula amounts, stress etc. Diarrhoea can also be caused by one or several pathogens, the most common being *Candida albicans*, *E-coli* and *Salmonella*. It is not always possible or practical for carers to seek Veterinary advice as some carers live remotely or there may not be a wildlife friendly Vet in their area. Herbal and nutritional supplements can be very efficacious if used correctly to treat these illnesses. I will discuss the various herbal and nutritional supplements I have successfully used to treat hundreds of animals in care all over Australia and will present several case histories. I will also discuss the possible role of nutritional and herbal supplements in preventative medicine and in treating other disorders commonly encountered with wildlife in care.

Importance of Obtaining a Veterinary Diagnosis.

If an animal that comes into your care has injuries, it should be assessed by a vet. It may need treatment for shock, dehydration, pain or need surgery. There may be internal injuries that cannot be easily detected. If an animal develops an illness while in your care, it is equally important to have your vet assess it. After visiting your vet and obtaining a diagnosis, you may decide to opt for natural health treatments, or a combination of both natural and orthodox treatments. The reality though is that in a lot of cases many carers live a long way from Veterinary help and animals get sick out of Veterinary Clinic hours. There are many Vets who have an interest in treating wildlife and if you find such a Vet, look after them, ply them with food and drink and hopefully they will always be happy to see you.

Prevention is better than cure

There are some simple steps that wildlife carers can implement to help prevent illness occurring with the animals in care.

- Keep stress levels to a minimum. As carers we need to be aware of the causes of stress and do everything in our power to minimise stress to the animals in our care.
- Excellent hygiene practices
- Regular feeding
- Feeding the correct rates and type of milk formula. Find out about the animals natural diet in the wild and try and provide a diet as close to that as possible, rather than feeding supplements they do not naturally eat
- Please consider the animal's needs for good quality food, fresh clean water, sanitary living conditions, pain relief, room to stretch and groom, time in the sun, privacy, shelter, and quiet. They need an environment conducive to healing – free from pain, stress, hunger thirst and isolation. A quiet, calm restful recuperation is the priority here
- Use supplements to support their immune systems such as Colostrum

Using Wombaroo Impact - a colostrum supplement – most mammals and marsupials are born without immunity and they initially acquire their immunity from colostrum in their mother's milk. Colostrum contains proteins with antimicrobial activity such as Lactoferrin, Lactoperoxidase and Lysozyme. These act to inhibit the colonisation of the intestine by pathogenic micro-organisms. A Joey's immune system is not fully developed until after pouch emergence and beyond. Young animals rely on immune transfer from their mother's milk for an extended period of time. It is common for Joeys to develop diarrhoea around a week to ten days after coming into care when the colostrum immunity they have received from the mother has been completely depleted. The addition of bovine colostrum to the correct milk formula provides protection against a wide variety of pathogens.

Why does stress lead to disease?

- Stress causes a number of physical reactions which disrupt the immune system leading to an inability to cope with infection.
- When stress occurs the pituitary gland reacts by releasing high levels of cortisone which upsets absorption of nutrients and depletes reserves. It can cause small ulcerations of the stomach.
- The thymus and lymph nodes which are key parts of the immune system can shrink leading to an inability to fight further infections
- Prolonged high cortisone levels can cause a leukocytosis which in turn leads to an inability to cope with infection.
- Excess cortisol leads to a rise in blood pressure (at least in humans and some animal models) which can prolong stress

Supplements to help alleviate the damage caused by stress:

Vitamin E – Primary function is as an antioxidant, protects tissues and cells from free radical damage, useful in helping to prevent myopathy. I recommend using a micellised form for enhanced absorption and my preferred brand is Pretorius.

Selenium – Antioxidant, maintenance of cellular membranes, works synergistically with vitamin E to carry out antioxidising and immunostimulating actions. Vitamin E and Selenium function better together rather than individually; however their functions are not the same

Both Vitamin E and Selenium can be toxic at high doses

Rescue Remedy

Will help to relieve fear and restore calm. Use 1-3 drops depending on size of animal. It is also available as a spray. I also recommended it to relieve carers stress. Dilute in spring water before giving as these are in an alcohol base and palatability is poor.

There are several herbs that can be effectively combined to decrease stress levels. Adaptogenic herbs such as *Withania somnifera* ii and *Eleutherococcus senticosus* iii reduce the effects of physical, emotional and mental stress whilst nervine tonics including *Valeriana officinalis*, iv *Passiflora incarnata*, v *Matricaria chamomila* vi and *Piper methysticum* vii support the nervous system

Diarrhoea and digestive upsets

Diarrhoea is commonly caused by an overgrowth of *Candida albicans*, E-Coli and other pathogens which are present in the gut in low numbers but will quickly multiply when conditions are favourable.

Since 2001 I have successfully used herbal formulas and nutritional supplements to treat animals in my care who have presented with various digestive disorders. I have also successfully treated hundreds of other carer's animals, particularly for thrush (*Candida albicans*) and E-Coli. It has been my experience that wildlife respond very well to herbal treatment. Eastern Grey Kangaroos in particular, who are very easily stressed, are prone to digestive disorders. I advise carers to get a faecal sample analysed by their Vet or pathology dept at the onset and end of treatment in order to identify the pathogens we are dealing with. This information ensures that I use the most appropriate herbs and the follow up faecal test confirms the success of the treatment. Carers call me every second day or sometimes daily in order for me to review the animal's symptoms and herbal dose rates. This service helps many carers who do not have easy access to Vets with wildlife experience and many carers who live in remote areas where reaching a Vet is not always practical or possible.

Herbalists commonly blend six or seven herbs in a formula and the synergistic effects increase its potency and effectiveness. I like to tailor the formula according to individual need, but I also make standard Thrush, E-coli and Immune formulas that carers can have on hand rather than waiting for herbs to be posted to them. Early treatment is important as it can quickly limit the growth of pathogens and lessen damage to the gut mucosa.

By far the most common conditions I prescribe for are *Candida*, (commonly referred to as Thrush) and E-Coli. The herbal formulas I prescribe are effective against these and other pathogens. These herbal extracts are practitioner only products and cannot be bought over the counter. Herbs can be toxic if used incorrectly.

A selection of herbal extracts I commonly use in various combinations in my formulas

Allium sativum is anti-septic, anti-microbial, and anti-spasmodic. It is one of the most effective anti-microbial plants available which supports the development of natural bacterial flora whilst killing pathogenic organisms. viii

Andrographis paniculata is a bitter tonic with anti-inflammatory and immunostimulant action and has traditionally been used to treat digestive disorders. It also has anthelmintic actions which help to prevent an overburden of parasites. ix

Citrus paradisi is broadly active against both fungi and bacteria (and research has also suggested protozoa). Hence, it will not create favourable conditions for fungal growth, unlike conventional antibiotics which have selective antibacterial activity and can lead to fungal overgrowth. By lowering the total count of harmful organisms in the gastrointestinal tract, re-growth of beneficial flora will be enhanced provided other conditions are favourable.

Some of the Bacteria and Fungi found to be susceptible to *Citrus paradisi* are as follows.

Bacteria *Escherichia coli* *Salmonella typhi* *Salmonella anatum*

Salmonella choleraesuis *Staphylococcus aureus* *Staphylococcus pyogenes* *Streptococcus faecalis*
Corynebacterium spp.

Proteus Vulgaris *Bacillus subtilis* *Mycobacterium* spp. *Pasterurell multicoda*

Fungi *Aspergillus flaves* *Aspergillus niger* *Aspergillus orzae*

Penicillium citrium *Penicillum* spp. x

chinacea angustifolia has a long history of use amongst Native Americans, particularly the root, which was used for toothache, sore throat, fits, stomach cramps, septic conditions, rabies and as an antidote for venomous bites including snakebite. The roots of *Echinacea* have been shown to possess immune-enhancing activity, as measured by increase in phagocytic activity in vitro and after oral administration in an experimental model. *Echinacea* has shown antiviral activity against several viruses. Internal and external use of *Echinacea* reduces inflammation, oedema, subcutaneous haemorrhage and improves healing of damaged tissues. xi

Glycyrrhiza glabra or Licorice as it is commonly called is a useful herb for numerous reasons. Its sweet taste makes the formulas more palatable. One of the key constituents of dried licorice root includes triterpenoid saponins and a wide range of flavonoids and sterols. Animal studies have shown that the mucoprotective action of licorice prevented ulcer development and protects the gastric mucosa from damage from bile and aspirin based drugs. It has demonstrated anti-inflammatory effects in numerous trials and is comparable to prednisolone and dexamethasone in animal trials. It has a powerful effect on steroid hormone function and inhibits the activity and production of the enzyme that converts cortisol into its inactive metabolites, thereby decreasing cortisone levels and stress. xii

Hydrastis canadensis is anti-microbial and anti-inflammatory. It is useful for all conditions affecting mucous membranes e.g. from mouth to anus. There is now a worldwide shortage of *Hydrastis* due to overharvesting in the wild. An alternative herb is *Berberis vulgaris* which also has good levels of berberine one of the key constituents valued for its antimicrobial effect. xiii

Hypericum perforatum is an excellent herb for supporting the nervous system. It has a sedative effect therefore reducing stress levels especially if combined with *Valeriana*. It is also strongly antiviral and is one of the herbs I use in my immune formula. It is useful in treating enveloped viruses such as Pox in Macropods and birds. Traditional prescribing has seen its use in treating wounds both topically and internally.

Hypericum is bactericidal against a number of Gram positive and Gram negative bacteria including

Staphylococcus aureus *Proteus vulgaris* *Escherichia Coli*

Pseudomonas aeruginosa. xiv

Leptospermum scoparium commonly known as Manuka. Various parts of the common Manuka plant were used by Maori for a large number of medicinal complaints. It is from the same family as Tea Tree which is the Myrtaceae family. Along with its anti-fungal, anti-inflammatory and anti-ulcerogenic effects it also has an anxiolytic and sedative effects. All of these actions are very useful in treating digestive upsets. It has proven a very effective treatment against *Candida* as it helps to kill the pathogens, ease gut inflammation, protect from ulcers while keeping your patient calm and relaxed which allows the immune system to work more efficiently. xv

Pseudowintera colorata commonly known as Horopito has long been used by the indigenous Maori population of New Zealand both internally and externally for many purposes. This evergreen plant is continually exposed to attack by various insects and parasites and its occurrence in high rainfall areas make it particularly susceptible to attack by fungi. This has led to efficient built in defence mechanisms to counter these attacks which give the plant its healing and antimicrobial attributes. This herb has been used traditionally to treat diarrhoea and painful inflammations, wounds infections and burns. It also has analgesic properties xvi

Matricaria chamomilla is anti-inflammatory, carminative, mild sedative, antiulcer. It is a very useful herb for any inflammatory condition of the gut. xvii

Tabebuia avellanedae commonly known as Pau D'Arco - A traditional South American medicine.
Actions

– Immune enhancing, antitumor, antibacterial, antifungal, antiparasitic, depurative. It is one of the main herbs in my thrush formula. xviii

Other treatment options for digestive upsets

Saccharomyces boulardii. If diarrhoea has only just commenced and there is no smell associated with it, I recommend a product called SB FlorActiv or SB Pro: a biotherapeutic supplement featuring *Saccharomyces boulardii* – a clinically proven agent that competitively inhibits *Candida albicans* and stimulates secretory IgA production. *Saccharomyces boulardii* is a non-colonising yeast species which is not related to the *Candida* spp. SB quickly establishes itself in the gastrointestinal tract. On cessation of therapy it is no longer detectable after 2-4 days. SB produces lactic acid and B vitamins, and as it becomes established, crowds out unfriendly strains of yeast. When given along with probiotic bacteria such as protexin, SB provides a symbiotic treatment regime for the gastrointestinal tract xix

Bentonite for diarrhoea in mammals

Bentonite is not a mineral but a commercial name for montmorillonite, the active mineral in many medicinal clays which come from weathered volcanic ash. This name derives from Montmorillon, France, where the medicinal mineral was first identified. Sometimes mineralogists also use the term smectite.

A VOLCANIC DETOXIFIER – Bentonite, a medicinal powdered clay is one of the most effective natural intestinal detoxifying agents available and has been recognized as such for centuries by native peoples around the world. Liquid clay contains minerals that, once inside the gastrointestinal tract, are able to absorb toxins and deliver mineral nutrients to an impressive degree. Liquid clay is inert which means it passes through the body undigested.

A medicinal study by Frederic Damrau, M.D., in 1961 (Medical Annals of the District of Columbia) established clearly that bentonite can end bouts of diarrhoea. When 35 individuals (average age 51) suffering from diarrhoea took two tablespoons of bentonite in distilled water daily, the diarrhoea was relieved in 97% of the patients in 3.8 days, regardless of the original cause of the problem (allergies, virus infection, spastic colitis, or food poisoning). According to Dr. Damrau, bentonite is “safe and highly effective” in treating acute diarrhoea.

Technically, the clay first adsorbs toxins (heavy metals, free radicals, pesticides), attracting them to its extensive surface area where they adhere like flies to sticky paper; it then absorbs the toxins, taking them in the way a sponge mops up a kitchen counter mess.

Bentonite is available from stock feed shops as a powder or granule and also available at health shops and some veterinary clinics.

Instructions for use:

Mix 1 tsp in a cup of hot water and let steep for 5 minutes. The grey water on top is what you want and you add 1 to 5ml per 100ml milk formula depending on severity of diarrhoea.

Charcoal powder. Can be added to milk formula just before feeding to calm the stomach and remove pathogens.

Slippery elm: for inflammatory conditions of the digestive system, including diarrhoea. This herb puts a soothing coat on inflamed mucous membranes from mouth to anus. It can also be made into a paste and can also be used for bites, boils, abscesses, and ulcers.

Chamomile can be given as a tea for an inflamed digestive system. You can make an infusion and use this water to make up milk formula.

Parsley can be used for flatulence and colic. Make an infusion and encourage the animal to lap the strained and cooled infusion.

Joey with typical Candida symptoms, yellow, bubbly, mustard coloured sweet smelling faeces.

Case 1

Billie a 2kg Red Kangaroo Joey found on roadside beside dead mum Carer Chelsea Renton

Problem: Diarrhoea – Bubbly sloppy pale coloured faeces

Treatment Protocol: Thrush Formula 1.5ml diluted in 3ml water 3 times daily after feeding for two days

Reassessment: As there was no change in symptoms I increased the dosage to five times daily with the addition of ¼ capsule of SB Pro, (active ingredient *Saccharomyces boulardii*) twice daily.

Treatment was reviewed every two days and no changes were made to the treatment regime until the seventh day when I reduced the dose to four times daily. Faeces were now formed and dark in colour.

Outcome: On the ninth day I advised ceasing treatment as the Joey was now producing normal pellets. There has been no reoccurrence of symptoms

Thrush Formula

Pau D'Arco

Matricaria chamomilla Hydrastis Canadensis Glycyrrhiza glabra Echinacea, angustifolia Allium sativum Pseudowintera colorata

Case 2

Jasmin an 800g Herbert's Rock Wallaby Carer Corna Viljoen

Problem: Diarrhoea – A week after coming into care this Joey developed uncontrolled, watery, sour smelling faeces.

Treatment Protocol: add Impact to milk formula Herbal Formula Thrush Formula 0.5ml diluted in 1.5ml water 5 times daily after feeding

Reassessment: On day five the Joey was producing normal pellets and treatment was discontinued.

Two days later the Joey began scouring again and treatment was resumed. The next day the diarrhoea was controlled and of a toothpaste consistency. Treatment continued for another five days but was reduced down to four times daily and with the addition of ¼ capsule *Saccharomyces boulardii*.

Outcome: All treatment was stopped three days later as Joey was producing normal pellets.

Case 3

Woody a Redneck Wallaby 431g (approx 200g underweight)

Woody was passed to me from another carer in August 2015 in very poor condition. He had been in care for one month and was on five feeds daily.

Problem: Dehydration, skin infection - inflamed, crusty, brown coloured rash on front of torso, both legs and cloaca. Foul, drain smelling watery green diarrhoea, refusing milk feeds, urine was a concentrated yellow colour.

Treatment Protocol: As the Joey was dehydrated I administered 25ml sub-cutaneous fluids of Hartman's solution. Milk was withdrawn for twenty four hours and Lactade was substituted.

Woody was given 0.4ml Thrush formula, 0.3 Immune formula and 1 drop Citrus paradisi diluted in 3ml water four times daily. 20ml Sub-cutaneous fluids were repeated every twelve hours for two days.

Immune Formula

Andrographis paniculata Leptospermum scoparium Hypericum perforatum Glycyrrhiza glabra

Milk formula with the addition of Impact was resumed after twenty four hours at six feeds per day and Woody drank well.

Reassessment: The herbal regime was continued for a further two days. The drain smell was gone and the faeces were now a toothpaste consistency and brown in colour. Herbal formula was reduced to twice daily after a further four days and then once daily for four days when herbs were discontinued as Woody was producing normal toothpaste consistency, mustard coloured faeces with no odour. Woody's skin infection was treated with an ointment applied three times a day containing:

Anti-Fungal ointment

Beeswax Olive Oil Almond Oil Pau D'Arco

Commiphora molmol

Essential oils of T-tree, Cloves and Peppermint

Woody's skin infection resolved after ten days treatment

Woody was transitioned from Divitelact formula to Wombaroo .6 formula and within a month he gained 300g in weight.

Outcome: By March 2016 Woody weighed 5kg and to date is in very good health and due to be released in a couple of months.

Other treatment regimes for ailments using natural therapies

Colloidal Silver is a bacterostatic useful for treating many kinds of infections. Use at a rate of 4-5 drops to 250ml water and let stand for 30 minutes before using. It can be added to water bowls. It

can also be used as an adjunct with other treatments for bacterial disease and also as a preventative agent. It is important to use a commercial and not a homemade brand as the home-made one will have a particle size large enough to possibly cause kidney damage.

Bites

Homeopathic *Ledum*, pillules or liquid. I use this remedy for any bites including ticks.

Pox Virus

Pox virus is a self limiting ailment that does not need to be treated unless it is causing lameness or pain. I have successfully treated this virus using an ointment that I make containing antiviral herbs in an olive oil and beeswax base. It can be applied 3-4 times daily to the pox lesions. If the infection is severe and disabling I also prescribe a formula to be dosed orally.

MACROPOD WITH POX VIRUS

Case 4

Eastern Grey Kangaroos. Carer Annie

Problem: Severe pox lesions on feet of animals which made hopping and walking painful.

Treatment Protocol: Pox Herbal ointment to be applied to pox lesions at least three times daily. Herbal formula to be dosed twice daily diluted in water. Individual dose rates were calculated according to each animal's weight.

Outcome: Within a week the pox were drying up and falling off and completely resolved by ten days.

Pox Ointment ingredients

Olive oil Beeswax

Hypericum infused oil,

Fluid extracts of *Hypericum perforatum*, *Thuja occidentalis*, *Melissa officinalis* and *Citrus paradisi*.

Pox Herbal formula

Hypericum perforatum *Thuja occidentalis* *Melissa officinalis* *Glycyrrhiza glabra*

Soft tissue injury including sprains, strains and inflammation

Many animals come into care as a result of road trauma and often present with soft tissue injury including bruising which can be extensive.

Traumeel S: Is a homotoxicological preparation for any soft tissue trauma including bruising, sprains and strains. It contains *Arnica* and many other anti-inflammatory substances and is more effective than using *arnica* alone. It is available as tablets or cream.

Traumeel is supported by over two dozen scientific and clinical studies and has proven to be an effective alternative to NSAIDS without the side effects. 1

The cream can be used topically and the crushed tablets can be mixed with milk formula for oral administration.

CAUTION: Do not use on broken skin.

Case 5

Teenie a 200g Redneck Wallaby came into my care late one winter night.

Problem: She had been thrown from the pouch and sustained massive bruising over most of her body including the palms of her hands. She was very cold on arrival.

Treatment protocol: Once she had been warmed in the incubator for a few hours I administered a small amount of a crushed Traumeel tablet with glucose and water. I added a pinch of Traumeel in every feed for a few days. I also used the ointment topically on areas of bruising on her tiny body.

Outcome: Within days there was no sign of bruising. Teenie was in care until her successful release and has since had many Joeys of her own.

Teenie at 8 months old

1 Peer Review of Studies on use- International Journal of General Medicine 2011:4 225-234

Case 6

Bobuck Possum in care for a couple of months

Problem: presented with a badly sprained front limb. His right arm was very swollen, hot, and obviously painful to the touch.

Treatment Protocol: ¼ of a crushed Traumeel tablet was administered three times daily dissolved in milk formula.

Outcome: The swelling was considerably lessened within twenty four hours. He began using the limb after two days and by day three the swelling had completely subsided.

Burns

Require Veterinary attention but small amounts orally of Vit A, Vit E, Vit C speed up healing.

Ear Mites

Case 7

A Redneck Wallaby came into my care for pre-release

Problem: swollen, red itchy ears. This animal had been in care with another carer for some time and had scratched her ears so much they were bleeding. My local vet took a skin scraping from the ear and diagnosed a mite infestation along with a dry fungal infection. I declined the recommended Steroid cream treatment.

Treatment Protocol: Anti-fungal anti-mite Herbal cream containing - Aqueous base cream

Herbal extracts of *Azadirachta indica* -for its insecticide and antifungal qualities

Pau D'Arco for its anti-fungal properties

Essential oils of Lavender and Clove for anti-fungal effects

The cream was applied three times daily to the outside and inside of the ears. The Wallaby was very cooperative as the cream was cool and soothing for her very hot and reddened ears.

Outcome: The next day the redness and swelling has considerably lessened. I continued to use the cream for another ten days to ensure that all mites and eggs were killed. There was no reoccurrence of the condition and the Wallaby was released several months later.

Ticks

Case 8

Female Eastern Grey Kangaroo 20kg.

Problem: One morning my husband alerted me that Ash the Kangaroo was out in the paddock and he thought she had a broken leg. When I examined her I couldn't see any physical damage but Ash appeared to be suffering from paralysis of the legs, she could not hop or walk and was crawling along the ground. She displayed some respiratory distress and an abnormally fast heart rate.

Treatment Protocol: I administered 4ml Pamlin by intramuscular injection and after about fifteen minutes when the pamlin had begun to take effect I rolled her onto a blanket and we carried her back to the enclosure. Once I was able to examine her more closely I discovered she was covered in ticks. I treated her with the following:

Homeopathic *Ledum* orally, which is used for any bites or stings. Vitamin E/Selenium intramuscular injection

Vit C sub-cutaneous injection

I hand-picked all the ticks off and applied a few drops of Frontline (an animal treatment for ticks) to the back of her neck. She was kept cool and quiet. By late afternoon she was back on her feet and grazing.

Outcome: The next day she appeared to be fully recovered, but I kept her in the enclosure for a few more days to make sure she was in good health. Ash was reared with a Whiptail Wallaby named Fern, and Fern came back into care with Ash where she lavished attention on her, grooming and gently licking her. I am sure the love that Ash received from her best friend helped her to heal quickly. Ash and Fern were re-released and continue to be great friends

Urinary Tract Infection:

Case 9

Redneck Wallaby in care

Problem: A carer contacted me regarding a 2.5kg. Redneck Wallaby in her care with cystitis diagnosed at local vet The Vet suggested antibiotic treatment. The carer sought my advice as she was reluctant to use antibiotics since this animal had a long history of Candida (thrush) infection.

Treatment Protocol:

Herbal Formula

Barosma betulina - Buchu – Urinary antiseptic, mild diuretic xx

Uva-ursi – Bearberry – Urinary antiseptic, astringent, anti-inflammatory xxi Agropyron repens – Couch Grass – soothing diuretic, urinary demulcent xxii Crateva – Bladder tonic, anti-inflammatory, antilithic xxiii

Echinacea angustifolia – Immune stimulant, anti-inflammatory

Glycyrrhiza glabra – Licorice - which has proven to be very successful in treating the urinary tract infections by reducing the irritation of mucous surfaces of the urinary tract

I prescribed an acute dose rate of 2ml three times a day for the first day to be diluted in 4ml water.

I also prescribed a Homeopathic product called Reneel for kidney and bladder problems at a rate of 10 drops three times daily along with half a Cranberry capsules three times daily

I advised the carer to make up an infusion with corn silks and couch grass to soothe the urinary tract and to make up the milk formula with the strained infusion.

Reassessment: On day two the dose was reduced to 1.5ml diluted in 3ml water for a further five days. The carer reported the Joey was no longer showing signs of straining on urination.

Outcome: Several days later the Wallaby was taken back to the vet and the urine test was clear indicating the infection was resolved.

Multistix can be used to detect blood or protein urine and can be purchased in most chemist shops.

Wounds

Superficial wounds can be treated at home but deep wounds should be assessed by your Vet. It is important to clean and cover the wound as soon as possible. I use saline to clean wounds and generally use Manuka Honey as it is very effective. I place the honey on a non-adherent dressing such as Interpose with enough honey to cover the size of the wound. I then secure the dressing with vetwrap. Change the dressing every day. Manuka honey has amazing healing properties and the higher the Manuka rating the more effective the honey, although you can use any honey if you do not have Manuka at hand.

I have treated many wounds this way with amazing results.

Case 10

Rufous Bettong

Early one morning my husband told me there was a strange looking little animal at the front door. I immediately went to have a look and was very surprised to see a full grown Rufous Bettong sitting on the front step.

Problem: I detected a putrid smell and saw a large gaping wound on the animal's side. I fetched a couple of pouches and grabbing the animal by the base of the tail I bundled her into the pouches.

Treatment Protocol: I gave her an I/M injection of Pamlin after weighing her to ensure the correct dose rate. I phoned the Australia Zoo Vet hospital to ask for advice and let them know it would be difficult for me to undertake the two hour drive as I had several tiny Joeys in care. I also e-mailed photos of the wound to the Vet at the hospital and she was happy for me to clean and dress the wound as she told me they would not stitch such an infected wound. I was advised by the vet to administer Benacillin (a long acting penicillin) by injection every two days.

I cleaned the wound with saline and packed it with Manuka honey before covering it with a interpose non- adherent dressing and fixing it in place with elastoplasts. I live in a rural area a long way from the nearest Veterinary Clinic and I have developed a good relationship with a couple of Vets over the years. I was intending to wrap a bandage around the animal's body but when I looked in her pouch I discovered a tiny Joey there so settled instead with Elastoplasts to secure the dressing. The Bettong was placed in a straw lined box which I put into our completely enclosed veggie patch. There were plenty of hiding places for her and natural food but I supplemented with macropod pellets and some Critta care.

Reassessment:

Her wound was cleaned, packed with Manuka honey and dressed every day for almost a month and she had a total of five Benacillin injections two days apart.

Outcome: Her wound healed very rapidly and began to shrink in size as new pink tissue covered it. It took a month of treatment before the wound was fully closed and I was able to release her by leaving the veggie patch door open so she could come and go. My reward was seeing her each evening and watching her Joey emerge from the pouch and hop after his mum. I am still amazed

that a completely wild animal turned up on my doorstep looking for help. Animals are much smarter than we give them credit for.

Case 11

Cody an Eastern Grey Kangaroo came into care at approximately six months old weighing 800g. While in care he suffered several bouts of severe diarrhoea. He was treated with herbal formulas and antibiotics and recovered.

Problem: After release he returned one day with a badly cut foot. The cut ran the width of the underside of his foot and was quite deep.

Treatment Protocol: I gave him a tetanus injection and washed the wound thoroughly using a 60ml syringe and warm saline. I initially used a healing ointment containing Hypericum, Calendula and Lavendula. The wound was quite deep but not infected. We were flooded in on our property at the time so there was no way to get Cody to the Vet but as he was about eighteen kilos I doubt that I would have tried.

Reassessment: Within a few days I changed over from my herbal ointment to Manuka Honey. Cody healed rapidly and was kept inside while the foot healed. He was a model patient, very calm and quiet.

Outcome: Cody was successfully re-released after three weeks as the wound was calloused and well healed.

LOOKING AFTER THE CARER – NUTRIENTS AND HERBS THAT HELP KEEP US SANE AND HEALTHY

- Stress increases Magnesium excretion necessitating increased supplementation during stressful periods. Magnesium is a natural tranquilizer, and is considered the “anti-stress” mineral.
- Magnesium is depleted by sweating as well as a variety of other causes including drinking coffee and alcohol.
- Taking a daily multivitamin supplement can be used as a preventative approach to maintain or improve health.
- Eating a plant based organic diet is the mainstay of good health.
- Meditation and Yoga help to decrease stress levels.
- There are a wide variety of herbal preparations that can be helpful in times of stress, including: Chamomile, Passionflower, Skullcap, Valeriana, Oats, Damiana, Kava, Hypericum, Withania somnifera, Eleutherococcus senticosus.

Glossary of terms

Infusion: An infusion is made in a very similar way to tea, using fresh or dried herbs. The water should be just off the boil, as vigorously boiling water disperses valuable volatile oils in the steam. Infusions can be made from a single herb or from a combination of herbs. It is best to make them fresh each day

Decoction: A decoction is used for tough plant materials, such as bark, berries or roots. Decoction involves heating the plant material in cold water, bringing it to the boil and simmering for 20-40 minutes. Should be made fresh each day

Before using any herbal plants it is vitally important that you can correctly identify the species. Some herbs can be dangerous if used incorrectly, and some can cause death.

Herbal extract is generally the way that Practitioner only products are prepared using a blend of alcohol and water with the ratio depending on the type of herb and its active constituents.

References

- i Reiter,B. (1985). Protective proteins in milk: Biological significance and exploitation. IDF Bulletin, 191. 2-35
- ii Bone,K. 1997. Clinical Applications of Ayurvedic and Chinese Herbs. –Monograph for the Western Herbal Practitioner Phytotherapy Press pp 137-141
- iii Ibid pp-137-141
- iv Bone K. 2003 A Clinical guide to blending liquid herbs. Churchill Livingstone pp 447
- v Ibid pp 362 vi Ibid pp 137 vii Ibid pp291
- viii Hoffman,D, 1995 Element Books Ltd pp 202
- ix Bone,K. 1997. Clinical Applications of Ayurvedic and Chinese Herbs. –Monographs for the Western Herbal Practitioner Phytotherapy Press pp 13-19
- x Bone.K, Developments in Herbal Medicine – The Modern Phytotherapist Vol 1 No 2.
- xi Bone K. 2003 A Clinical guide to blending liquid herbs. Churchill Livingstone pp 185-190 xii Mills.S 1989 The Complete Guide to Modern Herbalism pp 138-139 Harper Collins 1989 xiii Ibid pp108-109
- xiv Mediherb Professional Newsletter 45. May 1995
- xv Rasmussen. P, Phytomed Medicinal Herbs. Phytonews issue 7. September 2000
- xvi Rasmussen. P, New Zealand Native Herbs seminar2012
- xvii Williams. Cheryl, 2013 Medicinal Plants in Australia Volume 4 An Antipodean Apothecary. Rosenberg Publishing
- xviii Bone.K, Pengelly. A, 1997 Mediherb Professional Review number 58 part 2
- xix Zanello. G, Meurens,F,Berri, M. And Salmon, H. (2009) Saccharomyces boulardii effects on gastrointestinal diseases, Curr. Issues Mol. Biol. 11:47-58
- xx Hoffman,D, 1995 Element Books Ltd pp 185

xxi Idib pp 179

xxii Idib pp 193

xxiii Bone K. 2003 A Clinical guide to blending liquid herbs. Churchill Livingstone pp 168-170