

UNDERSTANDING REPTILE PARASITES (ADVANCED VIVARIUM SYSTEMS) pdf

1: Understanding Reptile Parasites | Download eBook PDF/EPUB

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They are found in a wide range of colors and patterns. Some have spots, some have bands or rings around the body, and some have stripes from head to tail. Many are coral snake mimics with bright red, yellow or white, and black bands or rings. This great variety makes the kingsnakes and milksnakes very popular captives. Their bright, sharply contrasting colors and crisp patterns invariably tend to elicit "Oh! Their small size, simple cage requirements, easily supplied diet for most subspecies, adaptability to life in captivity, and great splendor have made them popular with beginning hobbyists as well as more advanced herpetoculturists. In this exciting new book, Applegate clearly promotes his strong belief of "Conservation Through Captive Propagation". Elsevier Health Sciences Format Available: This practical, user-friendly resource provides essential information on the care and treatment of exotic pets. Coverage includes common health and nutritional issues, as well as restraint techniques, lab values, drug dosages, and special equipment needed to treat exotic animals. Volume two covers the twenty-one species of rattlesnakes found in the United States, Canada, and northern Mexico. Current Therapy in Reptile Medicine and Surgery is a valuable reference that emphasizes topics of real clinical relevance in reptile and amphibian medicine. With details on therapeutic regimens, this text also features coverage of infectious diseases, anesthesia, surgery, and advances in biology and conservation. Colorful illustrations showcase exotic animals, and numerous tables and figures provide quick access to essential information. A discussion of the most current theory and practical applications of diagnostic endoscopy in reptiles provides insight into minimally-invasive endoscopic procedures, including biopsy techniques. Expert contributors combine forces to bring you the most cutting-edge information available, offering authoritative and sometimes controversial opinions in particular areas. Expert contributors offer the most current thoughts on diagnosing new and emerging diseases, including a thorough review of molecular diagnostics. The latest therapeutics are discussed, and the most up-to-date formulary and library of normal clinical pathology values is provided. The most current and comprehensive discussion of amphibian medicine in print in the last decade! A quick, concise reference to the drugs and dosages used to treat exotic animals, Exotic Animal Formulary, 4th Edition addresses the most common questions and medical situations you encounter in clinical practice. Species covered include birds, fish, amphibians, reptiles, primates, wildlife, and all kinds of small mammals and "pocket pets. Written by clinical and research veterinarian James Carpenter, this book is the only drug formulary on the market created solely for the treatment of exotic animals. Nearly drug tables provide clear, current recommendations on drugs, indications, and dosages used in treating exotic animals, including biological tables with details on therapies and diets, normal blood parameters of common species, venipuncture sites, differential diagnosis, and medical protocols for common conditions. All drug information is reviewed for accuracy, ensuring that this reference remains authoritative and current. Easy-to-use organization divides drug monographs into quick-reference chapters including: Additional drug topics include antimicrobial, antifungal, and antiparasitic agents. More than 20 expert authors contribute to this edition. References in each chapter provide resources for further research and study. Convenient appendices provide a single source for information such as classes of drugs used to treat specific exotic animal conditions; efficacy of selected agents used to treat exotic animals; location of select laboratories to perform procedures; normal lab values; conversions; and equivalents. New Invertebrates chapter has been added. New two-color design makes information easier to access at a glance, with drug and biological tables shaded differently for fast lookup. Updated information includes coverage of the latest drugs introduced into the market. Electronic access is available via Pageburst, making it easy to search topics and drugs.

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2: Understanding Reptile Parasites by Roger Klingenberg

Understanding Reptile Parasites (Advanced Vivarium Systems) by Roger Klingenberg Parasites are the third leading cause of death in reptiles - use this timely guide to understand the symptoms of external parasites (like ticks and mites) and internal ones.

Reptiles Nematode Parasites Treatment: Fenbendazole Reptiles Nematode Parasites Treatment: Fenbendazole By Roger J. Larval forms migrate through the body. Adult nematodes are typically thought of as worms. Because of their ubiquitous nature, several drugs have been adapted to treat them. Fenbendazole is a member of the benzimidazole group of anthelmintics, which also includes thiabendazole TBZ , mebendazole Telmin , and albendazole Valbazen. This group of anthelmintics has been widely used in veterinary medicine because of their effect not only on mature worms but also on larval and even encysted stages. In addition to killing mature worms, the benzimidazoles exert an ovicidal effect, immediately decreasing egg production by effectively sterilizing the worm. Although literally hundreds of benzimidazole derivatives have been formulated, fenbendazole is easily the drug of choice among the variations. While all medications in this group are considered to be very safe, fenbendazole is the safest of all of them. It was difficult to establish an LD50 lethal dose at which 50 percent of test population will perish in rodents. Even a dose greater than ten thousand times a normal dose would not consistently kill mice or rats. In addition to its excellent safety record, fenbendazole does not cause birth defects, unlike most of the other drugs of this group. The only contraindications for the use of fenbendazole are its uses in horses to be used for food and in lactating cattle. There are no proven reptile contraindications or known drug interactions. Fenbendazole functions by inhibiting the uptake of glucose sugar in the nematode parasite. This block of glucose uptake is slow, so fenbendazole works better when given over a course of several days than in single or multiple doses that are given at spaced time intervals. Upon oral administration, fenbendazole is minimally metabolized, and the majority of the drug is excreted unchanged. This helps explain why the cloacal administration of fenbendazole Innis is effective only with parasites found in the cloaca and will do nothing for parasites in the remainder of the GI tract. He reported better results with dosing the fenbendazole with a syringe into the cloaca. We now know that had Innis administered the fenbendazole orally over a course of three to five days, it would have produced even better results as a result of the constant blockage of glucose uptake in the worms. The technique that Innis employed was to place the tortoise in dorsal recumbency upside down and, with the drug inside a tuberculin 1 mL syringe with a lubricated tip, introduce the syringe into the cloaca. Although it is beneficial to place the medication as far into the rectum as possible, care should be taken to advance no more than half of the syringe and to stop immediately if resistance is noted. Leakage is prevented by manual pressure on each side of the cloaca. Innis further reported an almost immediate expulsion of pinworms due to the enema effect. He also suggested using a red rubber urethral catheter in larger specimens to prevent depositing the drug into the bladder. Regardless of the route chosen for administration, the drug is best given over consecutive days, rather than in individual, spaced doses. Some reptile veterinarians believe that albendazole is more effective in single doses than fenbendazole is. Even if single dose effectiveness is conceded, fenbendazole is preferable for several reasons. Although albendazole is considered to be safe, it is better absorbed than the other benzimidazoles are, which increases side effects with the liver and hematologic organ systems. Both drugs are more effective when administered daily for several days rather than in one dose, so single-dose effectiveness is a moot point. Albendazole is also teratogenic causing birth defects and embryotoxic causing damage or death to the embryo , which would pose an undue risk for potentially gravid animals. Finally, albendazole interacts with praziquantel Droncit and dexamethasone, which would limit concurrent treatment of cestodes. Fenbendazole is simply safer than albendazole. This author has been jokingly accused of owning stock in Panacur as a result of such enthusiastic promoting of fenbendazole. Stein and Wynne G. The author has noted that bearded dragons can go off food dramatically when put through

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consecutive day dosing, with the longest period of anorexia being two weeks. As bearded dragons often have both pinworms and coccidia, it is not unusual for them to be treated with both sulfadimethoxine Albon and fenbendazole at the same time, leading to questions about which drug could be causing the appetite to be suppressed. In any case, both drugs have caused appetite suppression when used separately, so perhaps a noncritical bearded dragon should be treated in stages to minimize appetite disruption. Employ force-feeding early and continue force-feeding until the dragons feed on their own. In some rare cases, parasites appear to be resistant to fenbendazole. In this situation, the author suggests using ivermectin, which may require more doses over time. A small study Klingenberg demonstrated this in ball pythons. Fenbendazole eliminated nematodes in fewer doses than ivermectin did see appendix III. Purchase Understanding Reptile Parasites [here](#).

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3: Parasites in pet reptiles

Free 2-day shipping on qualified orders over \$ Buy *Understanding Reptile Parasites (Advanced Vivarium Systems)* at www.enganchecubano.com

This article has been cited by other articles in PMC. Abstract Exotic reptiles originating from the wild can be carriers of many different pathogens and some of them can infect humans. Reptiles imported into Slovenia from to , specimens of native species taken from the wild and captive bred species were investigated. A total of reptiles 55 snakes, lizards and turtles , belonging to 68 different species, were examined for the presence of endoparasites and ectoparasites. Twelve different groups Nematoda 5 , Trematoda 1 , Acanthocephala 1 , Pentastomida 1 and Protozoa 4 of endoparasites were determined in 26 In snakes two different species of ectoparasites were also found. Among the tested lizards eighteen different groups Nematoda 8 , Cestoda 1 , Trematoda 1 , Acanthocephala 1 , Pentastomida 1 and Protozoa 6 of endoparasites in One Trombiculid ectoparasite was determined. In of examined turtles eight different groups Nematoda 4 , Cestoda 1 , Trematoda 1 and Protozoa 2 of endoparasites were determined in In examined turtles three different species of ectoparasites were seen. The established prevalence of various parasites in reptiles used as pet animals indicates the need for examination on specific pathogens prior to introduction to owners. Background Reptiles have become increasingly common domestic pets. While several reptile species sold as pet animals are bred in captivity, most of them are taken from the wild or are the offspring of wild-caught parents. Wildlife smuggling is on the increase. At the beginning of this century, illegal trade in endangered species had become the third in the world regarding to profit, close behind drugs and arms smuggling. Business may be even more remunerative for other two reasons: Further more, non-indigenous species can be found in our environment, upsetting delicate ecosystems eventually leading to the extinction of native species. Reptiles can also be interesting for their potential use in bioterrorism. Poor capture techniques, compounded by poor or inadequate shipping can kill many reptiles before they reach the pet stores. Reptiles are among the most inhumanely treated animals in the pet trade, because of their special needs for diets and habitats. For many species, the basic requirements for nutrition and housing are unknown, so pet reptiles are highly susceptible to metabolic diseases. In the wild, reptiles rarely come into contact with their own waste or uneaten food, which is a common occurrence in the captivity. The infestation with parasites plays an important role. Stressful life, concentration of animals and the presence of different species in a small living space actuate development, multiplication and spreading of parasites, which in nature live in cohabitation with their hosts. All these factors suppress the immune response in reptiles and increase the opportunity for viruses, bacteria, yeast and funguses to cause infections and consequent diseases. Reptiles may carry diseases, which can be spread to other animals, other animal species and even to humans [1]. Reptiles can carry viruses e. West Nile virus [2], Western Equine Encephalitis [3], bacteria e. The reptile can be a subclinical carrier of pathogens, for which ticks or other insects are the carriers. Therefore, ticks can play a role in maintaining a rickettsial reservoir *Borrelia burgdorferi* [15], *Cowdria ruminantium* [16], *Coxiella burnetti* [13], while mosquitoes can play a role in maintaining the West Nile virus in reptile populations [2]. *Trichinella papuae* and *Trichinella zimbabwensis* are able to complete their entire life-cycle in both poikilothermic experimentally infected monitors, caimans, pythons and turtles and homoeothermic animals [17]. The aim of this study was to establish the prevalence of parasites in populations of reptiles, intended to be pet animals in close contact with people. Reptiles imported into Slovenia, specimens of native species taken from the wild, and captive breed species were investigated. Materials and methods A total of reptiles 55 snakes, lizards and turtles , belonging to 68 different species, were examined for the presence of endo and ectoparasites. Among 21 different species of snakes 55 specimens , five species 11 specimens originated from Slovenia, seven species 23 specimens were imported from different EU countries and nine species 21 specimens from Pakistan. Among 32 different species of lizards specimens , eight species specimens were from Slovenia specimens were from breeding

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farms and one was from nature , eight species 55 specimens were imported from different EU countries, eleven species 59 specimens originated from Pakistan, two species 8 specimens from the Solomon Islands, two species three specimens from the Canary Islands, one species 26 specimens from Mali, one species one specimen from El Salvador and three species 15 specimens were of unknown origin. Among 13 different species of turtles specimens , eleven species specimens originated from Slovenian breeding farms, one species specimens from Lebanon and one species 18 specimens from Pakistan. Only 17 aquatic turtles belonging to three different species were included in our investigation.

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4: SNAKES: Nix as a Snake Mite Treatment - BambooZoo

Understanding Reptile Parasites (Advanced Vivarium Systems) - Kindle edition by Roger Klingenberg. Download it once and read it on your Kindle device, PC, phones or tablets. Use features like bookmarks, note taking and highlighting while reading Understanding Reptile Parasites (Advanced Vivarium Systems).

Wednesday evenings, February 21 and 28; 9: This course is designed to help the veterinary technician understand the basics of reptilian parasitology. The course will have two minute online sessions covering reptile parasites, online quizzes and suggested reading. All veterinary technicians and assistants interested in reptile parasitology are welcome to take this course and join in on the online discussions. Upon completion of this class, the participant should be able to: There are no required texts for this course; however, the instructor has supplied a list of suggested references below: Applied Clinical Nonhemic Parasitology of Reptiles. An Atlas of Diseases and Treatment, Vol. Veterinary Guide to the Parasites of Reptiles - Vol 1 and 2. Veterinary Clinical Parasitology, 7th ed. This text can be purchased from the VIN Store at: Reptile Medicine and Surgery. Amphibian Medicine and Captive Husbandry. The Color Atlas of Intestinal Parasites, 2nd ed. Sample collection, preparation and identification. This session will include sample collection stool samples vs. We will also cover the basic staining techniques for identification of protozoan parasites. Week one will also cover identification of common protozoan, nematode, trematode, and cestodes of different species of snakes. This session will pick up from the previous week and cover identification of common ectoparasites of snake species. Also covered this week will include identification of common protozoan, nematode, trematode, cestode and ectoparasites of turtles, tortoises and different lizard species Iguanas, Bearded Dragons, Anoles, Agamas, etc. This session also covers non-pathogenic or commensal organisms commonly found in reptiles as well as common parasites found in prey items. Amphibian parasitology will be covered as time allows. Library materials will be made available prior to the topic week so participants will have plenty of time to prepare for the real time sessions and discussion. Message board discussions regarding the topic presented will begin on the day the course opens and continue for one week following the last real time session. You must include the following information in the comments section of the CE enrollment form in order to be eligible for this discount: Registration will be closed when the maximum number of participants is reached or at 5pm ET the day of the first real time session. This is our major form of communication with participants. Please have the staff member register through VSPN. Withdrawal prior to the listed start date of a course entitles the registrant to a complete refund or a credit toward a future VIN CE course, whichever is preferred. Withdrawal within 1 week after the listed start date i. Does not apply to courses with only one real-time session. After the first real-time session, a registrant may withdraw due to special circumstances and receive prorated credit towards a future VIN course. These requests will be handled on an individual basis. It is not possible to withdrawal retroactively.

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5: Understanding Reptile Parasites

Get this from a library! Understanding reptile parasites: from the experts at Advanced Vivarium Systems. [Roger J Klingenberg; Advanced Vivarium Systems, Inc.].

Jason Juchems of Poisonfrogs. As you would prepare for the needs of your family, it is just as important to be prepared to help your animal collections too. While there are several items that can be included in a medical kit, I will discuss the items I keep on hand or readily available to treat my collection. My herpetocultural collection primarily consists of amphibians, while I also work with geckos and chelonian. In addition to preparing a medical kit, you also need to establish a working relationship with a veterinarian. A trusted veterinarian will guide and direct you in dosages and treatment levels for over the counter remedies in addition to other pharmaceuticals on the market available by prescription only. To find a veterinarian with a background in reptiles and amphibians in your area please visit: The Reptile Report Vet Directory. Click pic for full-sized image. Symptoms that require attention include decreased or lethargic movement, lowered body posture, soaking in water, inability to feed correctly, unusual behavior examples: Other issues to be aware of that typically require fecal exams, or fecals, are reduced to discontinued feeding, decreased body weight, or inability to gain weight. One of the first items to have on hand is a hospital tank set up as a quarantine area. Any new animals added to your collection should spend time in quarantine before they are introduced to your general collection. Animals showing signs of distress may also need to be quarantined for treatment. You can use an extra aquarium with a lid, a modified storage tote, a Kritter Keeper container, or a oz. If a specimen needs treatment they should be isolated from the rest of the population and housed in your quarantine area. For some health concerns you may find yourself breaking down an entire vivarium to sanitize and rebuild it, treating all the inhabitants. Your quarantine area should be in a separate room of your home or facility, use separate materials, and be the last area you work in for the day when working with animals. Sterilization should be done daily to prevent retransmission of disease. Keep the set up simple, such as using damp paper towel substrate and a baked leaf or two as hiding areas. Vinyl or Nitrile gloves should be worn while treating animals in quarantine. When treating more than one quarantine area, dispose of gloves and put on a new pair between working with each quarantine container. All equipment should be sanitized using a cup of bleach to a gallon of water mixture, or by using a commercially available product. For animals with signs of health issues, fecal samples should be taken immediately. For newly acquired specimens, the second to third week of quarantine is a good time to collect fresh stool samples since many freshly imported specimens may not show signs of imbalances or infection in the first week. A good stool should look like a little sausage and be brown to dark brown in coloration. To collect a sample, use a plastic spoon to extract feces from the terrarium. It is best to find a freshly defecated sample. Once collected, place the feces on a damp paper towel and place it in a plastic zipping sandwich bag. Samples need to arrive at a facility to be tested within 48 hours. Fecals are best examined by those who are trained to prepare the sample and find pathogens. I use commercially available sodium nitrate flotation solution, and have used home produced saturated sugar solution when examining samples myself. A high quality microscope is needed to examine fecals. Batrachochytrium dendrobatidis Bd is a type of chytrid fungus that infects the skin of amphibians. It is easily transmitted to other amphibians through spores. The spread of Bd is one the largest environmental crises in amphibian population decline. Diagnoses are completed through a polymerase chain reaction PCR test completed though a laboratory, although visible symptoms can be present such as discolored skin, excessive shedding, abnormal posture, or unnatural behaviors such as a nocturnal species that is active during the day. Testing and treatment is extremely important. Wearing gloves and using a single sterile swab, gently swab the ventral bottom surfaces of the skin. Swab the following area by rubbing the swab 5 times on each area: Once completed the swab should have swipes across the amphibian. I send my labs to Research Associates Laboratory www.iaclab.com. I also have them test for Ranavirus, an incurable infection. Bd is only transmitted to other amphibians while

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Ranavirus affects amphibians and chelonian. Fenbendazole Panacur is used in a granule form to treat gastrointestinal parasites of Amoebas, Ciliates, and Flagellates Protozoan along with Nematodes Metazoan. Diagnosis of the parasites is found through a fecal exam. It is considered a very safe drug to use. Sulfadimethoxine Albon is an antibiotic that can be used to treat coccidia. Liquid suspension given orally is commonly prescribed, with an alternative of granules dusted on food. Metronidazole Flagyl is an antibiotic used to treat bacteria and protozoal infections Amoebas, Ciliates, and Flagellates with diagnosis through a fecal exam. Animals that are eating little to nothing have used this drug as an appetite stimulant. Silver Sulfadiazine Cream is an antifungal and antibacterial topical treatment originally designed for burns and to prevent bacterial infections. It is my drug of choice when treating open wounds. Triple Action Antibacterial Neosporin without pain relief can be used on open sores for amphibians just as it is for humans. It is important to treat open wounds as quickly as possible to avoid infection and this topical can be purchased over the counter. Before treating any amphibian in a bath, allow liquid to warm to room temperature. Enrofloxacin Baytril is a broad spectrum antibacterial. Typically it is administered by a drop on the back or diluted in amphibian safe water for a 5 minute soak. Care needs to taken when using as it can be easily overdosed. This was taken off the market for a short time, but has reappeared online and in stores. Treatment is 1mL to mL of amphibian safe water, soaking the amphibian for 5 minutes. Use a pipette to make sure the solution covers the entire body of the animal. Methylene Blue has a few options for use as an antifungal and antibacterial treatment. The most common use is 2 drops to a gallon of water for tadpole use. This fish medication can also be used to add a drop to eggs to prevent molding or can be applied using a cotton swab to treat amphibians with rub nose. Amphibians typically have seizures when they have low calcium levels which can be fatal without intervention. Amphibian Ringers Solution is the ideal soaking solution for weak, dehydrated amphibians. It can be purchased online through Carolina Biological Supply or formulations can be found online. If you need a solution quickly Pedialyte can be used diluted in amphibian safe water, however it is not safe in hypocalcemia low plasma calcium levels amphibians. If ringers solution is needed quickly, a compounding pharmacy may be able to provide assistance. If used with paper towels in a quarantine setup, paper towels and solution must be changed daily as the solution quickly grows bacteria. There are times when hard choices need to be made. Certainly euthanasia is not something to be taken lightly, but the suffering of the animal cannot go on. Placing the animal in the freezer is not a humane or acceptable choice. Placing Oraljel on the belly of the amphibian and then soaking in vodka is the humane treatment. If you choose to keep supplies on hand, I recommend storing items in a locked tool box or cabinet kept at room temperature. This will prevent children or guests from gaining access to dangerous items. Being prepared is the most important part of keeping a collection. While you cannot be prepared for all situations, it is important to know how to protect your collection and what resources are available. Amphibian Husbandry Resource Guide 2. Association of Zoos and Aquariums. Understanding Reptile Parasites 2 ed. A Guide to Care and Breeding. Herpetological Publishing Pessier, A. Amphibian Medicine and Captive Husbandry. Journal of Herpetological Medicine and Surgery, 20 1 , Caudata Culture Articles- Caudata. How I Treat Nematodes in Frogs. Proceedings of the North American Veterinary Conference, How I Manage Wounds in Frogs. Permission granted for distribution through The Reptile Report.

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6: Reptiles Nematode Parasites Treatment: Fenbendazole

Understanding reptile parasites (eBook,) [www.enganchecubano.com] Understanding Reptile Parasites is one reptile care book from the highly acclaimed Advanced Vivarium Systems series. The AVS series, founded and guided by herpetocultural pioneer Philippe de Vosjoli, is the #1 series on reptile care.

They are host-specific, which means that they only feed on one type of animal. Snake mites will not affect lizards, nor will they affect humans or other household pets like cats and dogs. Mites can be identified as tiny black dots, much like a speck of dirt. However, unlike dirt, mites MOVE and will burst with a small red smear when squished against a hard surface the remnants of their last meal. These resilient parasites are commonly known as the "plague of snake keepers". Snake mites have been known to transfer disease in snakes, much like mosquitoes can with humans malaria and with dogs heartworm. If unchecked, mites on just one snake in one terrarium can multiply geometrically and establish themselves in an entire collection of several terrariums and dozens of snakes in a matter of a week or two. This is a problem that is unique to snakes in captivity. Wild snakes are able to keep these parasites in check through shedding their skin and leaving most mites behind. On the other hand, captive snakes are forced in close quarters with their shed skin and mites, thereby facilitating reinfestation. Mites will eventually over run a snake in captivity to the point that their host becomes irritated, mildly anemic and therefore lethargic. Infested snakes are often found to soak for extended periods in water in a vain effort to drown the mites on its body, only to be reinfested once it emerges. Snakes in this situation will seldom eat, or even refuse to eat altogether, due to stress and discomfort. Nix was designed to treat human head lice and their nits eggs. The one characteristic that separates the Nix method for treating snake mites from other mite remedies is its effectiveness at killing live mites AND mite eggs. All other mite remedies to my knowledge do not destroy mite eggs. As such, I have found the Nix method to be extremely effective at eradicating serious mite infestations. I even know of a pet store manager who sells several commercially produced mite remedies, yet uses the Nix method on imported snakes arriving at his store. Another pro to using Nix is economics. There exists a popular reptile care site on the Internet that discusses the toxicity of Nix, but in the two cases cited, Nix was spread over the infested snakes in full concentration. Common sense should dictate that reptiles and amphibians coming into direct contact with any fully concentrated chemical that does not occur in their natural environment would yield deleterious, if not downright fatal, results. The use of Nix discussed below involves a diluted solution 1 part Nix to 68 parts water that has never produced adverse reactions in any python or boa in my collection over the course of 6 years. In fact, some snakes in my collection are proactively treated every 6 months as they make appearances at semi-annual reptile shows and I am not willing to risk the chance of mites from other exhibitors making their way into my collection. Even routine treatments on these boas and pythons over the course of several years have yet to result in any negative effects. Preferably one that has never been used, or at the very least, on that has never contained harsh chemicals and has been thoroughly rinsed. Distilled water should be used to extend the shelf life of the solution. Although, with one treatment and sound quarantine practices, the first treatment should be all that is necessary. Nix is a fairly thick cream substance, so it may take a couple of minutes to transfer as much of the cream into the jug of distilled water as possible. Again, this may take a few minutes due to the thick consistency of Nix. Pour the Nix solution into a spray bottle. Mites may have also transferred to snakes housed in another room by "hitchhiking" on your hands or clothes. Spray the snake liberally with the Nix solution. Do not avoid spraying this solution on their head, eyes and heat pits - in fact, this is where mites commonly hide so spraying the head area is essential. Remove all substrate from the terrarium and throw away. Do not leave the garbage bag containing this old substrate anywhere in the house. Spray the entire enclosure, inside and out, including all cage furniture branches, hide boxes, water bowl, etc. Make sure that all corners and crevices are well covered with Nix solution, as this is where mites and their eggs are often hiding. Even spray the outside back of the cage and a 2-foot perimeter around the cage on the

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floor. The Nix residue that forms after drying is thought to even be effective at killing mites hiding out elsewhere in the room that may attempt to re-enter the snake cage. Replace the substrate with paper, preferably paper towel, as it is easy to spot mites on this. It is essential to use paper until you are absolutely certain that full eradication has been accomplished. I suggest waiting 3 weeks after the last live mite is spotted before using non-paper substrate. Remove water bowl from cage and replace, filled with water, 24 hours later. This ensures that the Nix solution is not washed off the snake by soaking in the water bowl before the active ingredient has had a chance to destroy all mites hiding under its scales. Return the snake to its enclosure and spray it, the cage, furniture and paper one more time. When the snake defecates during treatment, removed the messed paper area as usual, but be sure to re-spray the cleaned area and new paper with Nix solution. Repeat in days twice, for a total of 3 treatments. With all likelihood, the last live mite will perish within a few hours of the first treatment, but repeating treatment is good practice in case the outbreak is severe and mites are able to re-enter cages. It should be assumed that any new snake has mites, regardless of how well respected the previous owner or pet store is. I have personally been let down on several occasions by leading breeders in our hobby, and from personal friends. It is my experience that employing the "better safe than sorry" approach is of paramount importance in ensuring mite breakouts never occur. Given the above assumption new acquisitions, in addition to their cage and cage furniture, should be treated with Nix solution 3 times one full treatment every 5 - 7 days. Same should hold true when a snake enters your colony for a breeding loan, even if it is your own specimen that was lent out and is returning. As previously mentioned, it is also wise to treat snakes that attend shows, where other exhibitors and spectators may have mite infestations. With the large number of people that handled your animals, or even just touch the enclosure in which your snakes are housed, the chance that a mite is hitchhiking on at least one of these snake enthusiasts at the show is good. Cage furniture and substrate purchased at pet stores can also serve as mite vectors and should be treated with caution. Mite-free substrate can be purchased from pet stores that do not carry reptiles, from a livestock feed stores, or landscape centres. Newly purchased cage furniture should be sprayed liberally with Nix solution. Highly porous cage furniture wood hide boxes, branches, etc. I would like to give thanks to Giovanni and Paula F. Agioli at the Bean Farm, a reptile dry goods mail order business in Washington State, for enlightening me to the Nix snake mite treatment. When I frantically contacted them several years ago, Giovanni suggested that I not purchase any of the commercially produced mite remedies that they stock, but to go out and buy a bottle of Nix and a jug of distilled water locally. They had used this method with outstanding results for a number of years back then and even mentioned that Roger J. Advanced Vivarium Systems, California. The Bean Farm can be reached via:

7: Amphibian Emergency Care and Supplies | The Reptile Report

Excerpt from the book Understanding Reptile Parasites by Roger Klingenberg with permission from its publisher, Advanced Vivarium Systems, an imprint of BowTie Press. Purchase Understanding Reptile Parasites here.

8: - Understanding Reptile Parasites (Advanced Vivarium Systems) by Roger Klingenberg

Parasites are the third leading cause of death in reptiles - use this timely guide to understand the symptoms of external parasites (like ticks and mites) and internal ones. Full of helpful lists and charts for the responsible herp keeper.

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