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Chapter 1 : Black mamba - Wikipedia

out of 5 stars Clinical Toxinology of Venomous and Poisonous Animals, Second The 2nd edition would be of great value. Handbook of Clinical Toxicology of.

From health and economic consequences to exposure assessment and detoxification, this reference comprehensively covers the formation, characteristics, and control of various toxins that occur in the production, storage, handling, and preparation of food. The author discusses toxin sources, mechanisms, routes of exposure and absorption, and their chemical and biochemical components to prevent contamination of food products and reduce epidemics of foodborne disease. The book contains more than references to facilitate further research, as well as recent guidelines from the FDA and World Health Organization regarding food hygiene and safety. Covering some of the most important topics in modern toxicology, the Handbook of Human Toxicology is a unique and valuable addition to the current literature. It addresses issues, answers questions, and provides data related to. Within each of these five major sections are several carefully selected topics that reflect the current state of human toxicology. From tissue uptake of mercury to the effects of drugs on immune systems, the text provides much-needed information quickly and easily. Developmental toxicology, an increasingly important area, encompasses the study of toxicant effects on development, from conception through puberty. The Handbook of Developmental Toxicology provides useful insights gained from hands-on experience, as well as a theoretical foundation. In this convenient reference you will find information not previously gathered in one source-including comparative developmental milestones, historical data, and a glossary of terms used in developmental toxicity evaluation. This handbook is a practical guide for individuals who are responsible for testing chemical agents and for regulatory scientists who must evaluate studies, interpret data, and perform risk assessments. Packed with features, the Handbook of Developmental Toxicology is ideal for training students and technicians in developmental toxicology. The Handbook of Toxicology, Third Edition provides an updated practical reference source for practicing toxicologists in the pharmaceutical and chemical industries, contract laboratories, regulatory agencies, and academia. Written by experts in their specific toxicology fields, the chapters provide both fundamental and applied information. New to this edition: Completely rewritten chapters covering immunotoxicology, endocrine toxicology, and reproductive and developmental toxicology, providing a fresh perspective on these topics Addition of new chapters on Chemical Toxicology, Pharmaceutical Toxicology, Juvenile Toxicology, and Safety Pharmacology Updated information dealing with Inhalation Toxicology, Neurotoxicology, and Regulatory Toxicology, which has been consolidated into single chapters for each specialty A separate glossary with toxicological terms presented both alphabetically and by toxicological subspecialty For nearly 20 years, this handbook has remained the only reference book of its kind, designed to facilitate easy access to information related to the various toxicology specialties. This updated edition of a popular reference book reflects current practices and the state of the science of toxicology. Handbook of Toxicology of Chemical Warfare Agents, Second Edition covers every aspect of deadly toxic chemicals used in conflicts, warfare and terrorism. Including findings from experimental as well as clinical studies, this essential reference offers in-depth coverage of individual toxicants, target organ toxicity, major incidents, toxic effects in humans, animals and wildlife, biosensors and biomarkers, on-site and laboratory analytical methods, decontamination and detoxification procedures, and countermeasures. Expanding on the ground-breaking first edition, Handbook of Toxicology of Chemical Warfare Agents has been completely updated, presenting the most recent advances in field. Brand new chapters include a case study of the Iran-Iraq war, an overview of chemical weapons of mass destruction, explosives, ricin, the human respiratory system, alternative testing methods, brain injuries, and more. Unites world-leading experts to present cutting-edge, agent-specific information on chemical warfare agents and their adverse effects on human and animal health and the environment. Covers all aspects of chemical warfare agent modes of action, detection, prevention, therapeutic treatment and countermeasures.

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Features a full update on the first edition to reflect the most recent advances in the field as well as nine new chapters. Handbook on the Toxicology of Metals, Fourth Edition bridges the gap between established knowledgebase and new advances in metal toxicology to provide one essential reference for all those involved in the field. This book provides comprehensive coverage of basic toxicological data, emphasizing toxic effects primarily in humans, but also those of animals and biological systems in vitro. The fourth edition also contains several new chapters on important topics such as nanotoxicology, metals in prosthetics and dental implants, gene-environment interaction, neurotoxicology, metals in food, renal, cardiovascular, and diabetes effects of metal exposures and more. A multidisciplinary resource with contributions from internationally-recognized experts, the fourth edition of the Handbook on the Toxicology of Metals is a prominent and indispensable reference for toxicologists, physicians, pharmacologists, engineers, and all those involved in the toxicity of metals. Contains 61 peer reviewed chapters dealing with the effects of metallic elements and their compounds on biological systems Includes information on sources, transport and transformation of metals in the environment and on certain aspects of the ecological effects of metals to provide a basis for better understanding of the potential for adverse effects on human health Covers the toxicology of metallic nanomaterials in a new comprehensive chapter Metal toxicology in developing countries is dealt with in another new chapter emphasizing the adverse effects on human health by the inadequate handling of "ewaste Other new chapters in the 4th edition include: Toxic metals in food; Toxicity of metals released from medical devices; Gene-environment interactions; Neurotoxicology of metals; Cardiovascular disease; Renal effects of exposure to metals; Gold and gold mining; Iridium; Lanthanum; Lithium and Rhodium Find Your eBooks Hereâ€¦.

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Chapter 2 : wikitox:wikitox_home [My DokuWiki]

The second edition, now titled Clinical Toxicology of Venomous and Poisonous Animals, incorporates significant enhancements that make the book more valuable than ever.

This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. This article has been cited by other articles in PMC. Abstract Envenomation and poisoning by terrestrial animals both vertebrate and invertebrate are a significant economic problem and health risk for domestic animals in Australia. Australian snakes are some of the most venomous animals in the world and bees, wasps, ants, paralysis ticks, and cane toads are also present as part of the venomous and poisonous fauna. The diagnosis and treatment of envenomation or poisoning in animals is a challenge and can be a traumatic and expensive process for owners. Despite the potency of Australian venoms, there is potential for novel veterinary therapeutics to be modeled on venom toxins, as has been the case with human pharmaceuticals. A comprehensive overview of envenomation and poisoning signs in livestock and companion animals is provided and related to the potential for venom toxins to act as therapeutics. Introduction Australia is justifiably famous as the island continent with the most venomous and poisonous animals. These include native animals like Australian venomous snakes and introduced species like the cane toad. Many of these species pose a significant health risk to companion animals and livestock and thus are of both veterinary and economic importance. Animal venoms are used effectively for defense and predation; poisons are used primarily for protection from predation. Both venoms and poisons are complicated cocktails, consisting of several hundred different components. Venom toxins are the primary actors for toxicity in animal venoms, particularly for invertebrate venoms [1]. Venom toxins are peptides, generally 3â€”6 kDa in size containing between 2 and 4 disulfide bonds, in a highly stable inhibitor cystine knot ICK motif [2]. ICK venom toxins can have a wide range of activities, including ion channel blockers including neurotoxins , hemolytic agents, and antiviral or antibacterial agents. Toxins are distinct from enzymes, larger proteins, and nonpeptidic components like alkaloids and polyamines, and toxins are responsible for much of the biological activity and pharmacological interest around animal venoms and poisons. Further, they are common in both rural and urban areas posing a significant health risk to domestic companion animals and livestock. Snake venoms primarily contain procoagulants, anticoagulants, neurotoxins, myotoxins, and nephrotoxins; however, the locally acting necrotoxins generally found in non-Australian elapid and viper venoms are largely absent [3]. Cane toads are introduced amphibians that have been wreaking havoc on Australian ecosystems since their introduction in [4]. The cane toad has a highly toxic paratoid secretion that is particularly toxic to dogs [5]. Cane toad poison is composed primarily of biogenic amines, bufadienolides, alkaloids, and peptides and proteins [6]. Ontogenic variation in the cane toad poison has been reported, and the eggs contain higher concentrations and a wider range of active compounds than do adult toads [7]. The poison in the parotid glands induces neurologic or respiratory signs in dogs and cats when the toads are mouthed or ingested, and effects of poisoning can be so severe that death results despite treatment [8]. The Australian paralysis tick, Ixodes holocyclus Acari: Ixodidae , contains toxins, particularly holocyclotoxin, in its saliva which can be lethal to companion animals and livestock [9]; an antidote is available for paralysis ticks. For other invertebrate species, anaphylaxis or localized severe reactions are the primary concern for their bites and stings [10]. Insects cause clinical signs related to bites and stings, may cause anaphylaxis, and may be poisonous if ingested in the case of sawfly larvae or caterpillar species with urticating hairs or spines [11]. Theraphosidae are unique in that they have been shown to be lethal to canids, but not to humans [12]. Scorpions are of clinical importance because of their neurotoxic venom, which affects both humans and animals [13], and no scorpion antivenom currently exists. The diverse range of pathophysiological effects of the venoms and toxins from Australian venomous and poisonous animals present a major challenge for

veterinary treatment. Venom and poison toxins can be a source of novel pharmaceutical agents, which is only recently being explored in humans [14]. The goal of this review is to provide an overview of venom and poison pathogenesis of veterinary import in Australia and discuss the potential for targeted compounds in drug discovery for animal therapeutics. Venom Pathogenesis and Poisoning in Australia 2. Snakebite Snake envenomation is an important presenting problem at veterinary clinics, with previous studies estimating the prevalence at 0. Identifying the snake correctly is difficult in veterinary circumstances, given that the animal may be bitten in isolation or while unsupervised and the snake may not be presented with the animal for correct identification. A commercially available rapid freeze-dried sandwich enzyme immunoassay, the CSL snake venom detection kit CSL Limited, Parkville, Victoria , is available for use in Australian animals. With significant treatment associated costs for hospitalization, often with intensive care and antivenom, most owners are reluctant to pay for the additional cost of a venom detection kit. If a snake venom detection kit is used, it is important to select the most appropriate test: A study of rapid immunoassay snake venom detection kits in an experimental model of tiger and brown snake envenomation in cats demonstrated that if envenomation occurred less than 8 hours previously, blood was the best sample; however, after 8 hours it was essential that urine be sampled [17]. Notably, a horse envenomated by a tiger snake gave a negative result from a serum sample venom detection kit SVDK but was strongly positive when a urine sample was used [18]. Although bite site swabs can be used, bite sites are rarely identified in animals either in life or during a postmortem examination. The three most commonly encountered snakes causing envenomation of veterinary importance are the venomous brown snake, the tiger snake, and the red-bellied black snake. The latter two snakes are mostly localized near the coast, particularly the east coast, but the brown snake is ubiquitous throughout the continent; the tiger snake is the only one recorded in Tasmania Figure 1.

Chapter 3 : clinical toxicology | Download eBook PDF/EPUB

Clinical Toxinology Resources Website provides information on venoms, toxins, antivenoms, diagnosis, treatment and emergency medicine, for snakebite, spiderbite, envenoming and poisoning by animals, plants, mushrooms.

Each item will be dated, with the most recent at the top. These will be added to on a regular basis. In particular the new species Acanthophis cryptamydros has been added. In addition, for subscribers we have provided a new Diagnostic Algorithm to assist diagnosis in mushroom poisoning. Also common names have been added for 30 species of scorpions. Descriptions, biological and clinical information are available for many species, and will be added to regularly, together with photos. Changes have been made to the poisonous mushrooms and marine invertebrates databases to reflect updated information on existing records. The first aid database has been updated. Distribution Maps have been added for 27 genera of snakes. Species Distribution Maps have been added for 28 genera of scorpions. Species Distribution Maps have been added for 75 genera of scorpions. Species Distribution Maps have been added for 6 genera of scorpions. Species Distribution Maps have been added for 16 genera of scorpions. Species Distribution Maps have been added for five genera of scorpions. Species Distribution Maps have been added for seven genera of scorpions. This should be in place within the next two months, and then we will be embarking on some some major updates to the content. The pages giving information on the Clinical Toxinology Courses have been updated. Rhabdophis 29 January 20 species of snakes have been added to the snakes database, for the following Colubrid genera: Chilomeniscus, Crotaphopeltis, Hologerrhum, Pythonodipsas, Trimorphodon. A number of photographs of snakes have been added. A number of photographs of snakes, spiders and scorpions have been added. Simoselaps and Suta, and for the New Guinea Elapidae genus: Acanthophis, Austrelaps, Demansia, Drysdalia and Vermicella. African snake common names and local names listed by Pitman "Snakes of Uganda" have been added, and the record for the African viper Causus maculatus has been completed. Vipera darevski, eriwanensis, lotievi, pontica 18 additional species of Colubrid snakes in the genera Dipsina, Drymarchon, Geophis, Hydromorphus, Scaphiophis, Urotheca have been added to the snakes database 8 May Changes have been made to the snakes database to reflect revision of the taxonomy of existing and new species for the following genus: Vipera anatolica, ebneri, renardi, ursinii 1 May Changes have been made to the snakes database to reflect revision of the taxonomy of existing and new species for the following genera: Micrurus altirostris, baliocoryphus, brasiliensis, frontalis, fulvius, pyrrhocryptus, tener, tricolor Naja nubaie 24 April 41 additional species of Colubrid snakes in the genus Geophis have been added to the snakes database 17 April 27 additional species of Colubrid snakes in the genus Thamnophis have been added to the snakes database 10 April 35 additional species of Colubrid snakes in the genus Rhadinaea have been added to the snakes database 27 March 14 additional species of Atractaspid snakes in the genera Amblyodipsas and Xenocalamus, and 2 Colubrid snakes in the genus Symphimus, have been added to the snakes database 20 March Changes have been made to the snakes database to reflect revision of the taxonomy of existing and new species for the following genera: Bothriopsis bilineata , medusa, oligolepsis, peruviana, pulchra, punctata, taeniata - previously Bothrops Hemibungarus hatori, japonicus, sauteri Psammophis biseriatus, tanganicus 28 February Changes have been made to the snakes database to reflect revision of the taxonomy of existing and new species for the following genera: Agkistrodon bilineatus lemosespinali, bilineatus taylori Bothrocophias campbelli , hyoprora , microphthalmus, myersi Thelotornis capensis, kirtlandii, mossambicus, usambaricus Trimeresurus malcolmi , sumatranus Vipera kaznakovi, magnifica, orlovi. In addition another 14 species of Colubrid snakes in the genera Chironius and Omoadiphas have been incorporated. The Taxonomy and Species Maps data for Spiders have been updated, in particular for North American species in the genus Loxosceles 19 September The Taxonomy data for Spiders have been updated, in particular for the genus Loxosceles. Scorpions, Spiders, Marine Invertebrates. In addition the Venom Research data for the following sections have been updated in the Subscriber Section of the site: In addition the following has been updated in the Subscriber Section of the site:

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Scorpions Venom Research data 9 July 18 additional species of Colubrid snakes in the Topdonophis genus have been added to the snakes database. Scorpions Venom Research data. Chironex fleckeri Australian box jellyfish and Carukia barnesi Irukandji. In addition the following have been updated in the Subscriber Section of the site:

Chapter 4 : WCH Clinical Toxinology Resources

venomous animals and their venoms venomous vertebrates Download Venomous Animals And Their Venoms Venomous Vertebrates ebook PDF or Read Online books in PDF, EPUB, and Mobi Format. Click Download or Read Online button to VENOMOUS ANIMALS AND THEIR VENOMS VENOMOUS VERTEBRATES book pdf for free now.

The black mamba has a wide range within sub-Saharan Africa. These gaps may lead physicians to misidentify black mamba bites and administer an inappropriate antivenom. In the black mamba was recorded in, in the Dakar region of Senegal. It moves on the ground with its head and neck raised and typically uses termite mounds, abandoned burrows, rock crevices and tree cracks as shelter. It may share its lair with other snake species like the Egyptian cobra. Black mambas are diurnal and in South Africa, they are recorded to bask from 7â€”10 am and again from 2â€”4 pm. They may return to the same basking site daily. It is agile and can move quickly. The threat display may be accompanied by hissing. Opponents attempt to subdue each other by intertwining their bodies and wrestling with their necks. Some observers have mistaken this for courtship. The female will signal she is ready to mate by lifting her tail and staying still. The male will then coil around the posterior end of the female and align his tail with hers ventrolaterally. Intermission may last longer than two hours and the pair would stay motionless apart from occasional spasms from the male. Like the adults, juvenile mambas can be deadly. It mostly preys on birds, particularly nestlings and fledglings, and small mammals like rodents, bats, hyraxes and bushbabies. They generally prefer warm-blooded prey but will consume other snakes. The black mamba does not typically hold onto prey after biting, instead releasing its quarry and waiting for it to succumb to paralysis and die. It has a potent digestive system and has been recorded to fully digest prey between eight and ten hours. Young snakes have been recorded as prey of the Cape file snake. Out of more than bites, only 21 ended in fatalities, including all seven black mamba bites.

Chapter 5 : [PDF] Venomous Animals And Their Venoms Venomous Vertebrates Download eBook for Free

The editors are internationally recognized authorities in the biology and clinical aspects of venomous and poisonous animals, and the chapter authors are world leaders in their respective fields of toxicology.

 Abstract Envenomation and poisoning by terrestrial animals both vertebrate and invertebrate are a significant economic problem and health risk for domestic animals in Australia. Australian snakes are some of the most venomous animals in the world and bees, wasps, ants, paralysis ticks, and cane toads are also present as part of the venomous and poisonous fauna. The diagnosis and treatment of envenomation or poisoning in animals is a challenge and can be a traumatic and expensive process for owners. Despite the potency of Australian venoms, there is potential for novel veterinary therapeutics to be modeled on venom toxins, as has been the case with human pharmaceuticals. A comprehensive overview of envenomation and poisoning signs in livestock and companion animals is provided and related to the potential for venom toxins to act as therapeutics. Introduction Australia is justifiably famous as the island continent with the most venomous and poisonous animals. These include native animals like Australian venomous snakes and introduced species like the cane toad. Many of these species pose a significant health risk to companion animals and livestock and thus are of both veterinary and economic importance. Animal venoms are used effectively for defense and predation; poisons are used primarily for protection from predation. Both venoms and poisons are complicated cocktails, consisting of several hundred different components. Venom toxins are the primary actors for toxicity in animal venoms, particularly for invertebrate venoms [1]. Venom toxins are peptides, generally 3â€”6 kDa in size containing between 2 and 4 disulfide bonds, in a highly stable inhibitor cystine knot ICK motif [2]. ICK venom toxins can have a wide range of activities, including ion channel blockers including neurotoxins , hemolytic agents, and antiviral or antibacterial agents. Toxins are distinct from enzymes, larger proteins, and nonpeptidic components like alkaloids and polyamines, and toxins are responsible for much of the biological activity and pharmacological interest around animal venoms and poisons. Further, they are common in both rural and urban areas posing a significant health risk to domestic companion animals and livestock. Snake venoms primarily contain procoagulants, anticoagulants, neurotoxins, myotoxins, and nephrotoxins; however, the locally acting necrotoxins generally found in non-Australian elapid and viper venoms are largely absent [3]. Cane toads are introduced amphibians that have been wreaking havoc on Australian ecosystems since their introduction in [4]. The cane toad has a highly toxic paratoid secretion that is particularly toxic to dogs [5]. Cane toad poison is composed primarily of biogenic amines, bufadienolides, alkaloids, and peptides and proteins [6]. Ontogenic variation in the cane toad poison has been reported, and the eggs contain higher concentrations and a wider range of active compounds than do adult toads [7]. The poison in the parotid glands induces neurologic or respiratory signs in dogs and cats when the toads are mouthed or ingested, and effects of poisoning can be so severe that death results despite treatment [8]. The Australian paralysis tick, Ixodes holocyclus Acari: Ixodidae , contains toxins, particularly holocyclotoxin, in its saliva which can be lethal to companion animals and livestock [9]; an antidote is available for paralysis ticks. For other invertebrate species, anaphylaxis or localized severe reactions are the primary concern for their bites and stings [10]. Insects cause clinical signs related to bites and stings, may cause anaphylaxis, and may be poisonous if ingested in the case of sawfly larvae or caterpillar species with urticating hairs or spines [11]. Theraphosidae are unique in that they have been shown to be lethal to canids, but not to humans [12]. Scorpions are of clinical importance because of their neurotoxic venom, which affects both humans and animals [13], and no scorpion antivenom currently exists. The diverse range of pathophysiological effects of the venoms and toxins from Australian venomous and poisonous animals present a major challenge for veterinary treatment. Venom and poison toxins can be a source of novel pharmaceutical agents, which is only

recently being explored in humans [14]. The goal of this review is to provide an overview of venom and poison pathogenesis of veterinary import in Australia and discuss the potential for targeted compounds in drug discovery for animal therapeutics. Venom Pathogenesis and Poisoning in Australia 2. Snakebite Snake envenomation is an important presenting problem at veterinary clinics, with previous studies estimating the prevalence at 0. Identifying the snake correctly is difficult in veterinary circumstances, given that the animal may be bitten in isolation or while unsupervised and the snake may not be presented with the animal for correct identification. A commercially available rapid freeze-dried sandwich enzyme immunoassay, the CSL snake venom detection kit CSL Limited, Parkville, Victoria , is available for use in Australian animals. With significant treatment associated costs for hospitalization, often with intensive care and antivenom, most owners are reluctant to pay for the additional cost of a venom detection kit. If a snake venom detection kit is used, it is important to select the most appropriate test: A study of rapid immunoassay snake venom detection kits in an experimental model of tiger and brown snake envenomation in cats demonstrated that if envenomation occurred less than 8 hours previously, blood was the best sample; however, after 8 hours it was essential that urine be sampled [17]. Notably, a horse envenomated by a tiger snake gave a negative result from a serum sample venom detection kit SVDK but was strongly positive when a urine sample was used [18]. Although bite site swabs can be used, bite sites are rarely identified in animals either in life or during a postmortem examination. The three most commonly encountered snakes causing envenomation of veterinary importance are the venomous brown snake, the tiger snake, and the red-bellied black snake. The latter two snakes are mostly localized near the coast, particularly the east coast, but the brown snake is ubiquitous throughout the continent; the tiger snake is the only one recorded in Tasmania Figure 1. A map of the distribution of the three most commonly encountered Australian snakes of veterinary importance: Relative density is indicated by the legend to the right of each map. Maps from [20 â€” 22]. Venomous Brown Snakes Pseudonaja spp. Brown snake envenomation is characterized by a severe lower motor neuron paralysis with hypocoagulation [23]. Animals suffer an initial haemodynamic collapse with severe systemic hypotension and thrombocytopenia [23 , 24]. In an experimental model using anaesthetized dogs hemodynamic effects of brown snake Pseudonaja spp. Hematological effects consistent with significant derangement of coagulation included marked thrombocytopenia, depletion of serum fibrinogen, prolonged prothrombin, and activated partial thromboplastin time [24]. The group C prothrombin activators in brown snake venom closely resemble mammalian prothrombinase Xa: Va which converts prothrombin into thrombin; thus the venom activates coagulation resulting in a consumptive coagulopathy termed venominduced consumptive coagulopathy [26]. Pseudonaja venom also contains several neurotoxins: The clinical signs resulting from these toxins appear to be highly variable amongst envenomated species. Tiger Snake Notechis scutatus, Elapidae Tiger snake venom contains a number of neurotoxins, procoagulant factors, and a weak haemolysin, resulting in a primarily neurological, myolytic and coagulopathic clinical syndrome [18 , 28]. The complex presentation of tiger snake envenomation has been classified into three categories of clinical signs: During the preparalytic stage collapse, vomiting, salivation, defecation, trembling, and tachypnea are observed. Skeletal muscle paralysis, coagulopathy, and oliguria which may include either myoglobinuria or haemoglobinuria are noted in the paralytic stage and dilated pupils with absent pupillary light reflex, stiffness, and ataxia, inability to close the jaws, and renal failure are noted in the sublethal phase. The principle neurotoxin, notexin, is a toxic phospholipase A2 that depletes acetylcholine [18]. Notexin is also a potent myotoxin and can cause extensive skeletal muscle degeneration, though with rapid death insufficient time may elapse for significant skeletal muscle changes to occur [18 , 29]. A procoagulant with factor Xa-like activity is present and histopathological studies on a dog and cat which died for tiger snake envenomation demonstrated extensive thrombus formation [18 , 29]. Clinical features of a horse diagnosed with tiger snake envenomation by sandwich ELISA included muscle fasciculation, reluctance to move, profuse sweating, tachycardia, tachypnea, and localized hot painful swelling on the muzzle presumed to be the bite site though punctures were not visible [18]. Significant hematologic abnormalities in this horse included mild neutrophilia with a left shift

but no toxic changes and mild elevations in fibrinogen. For clinical chemistry, the horse exhibited a range of hematologic abnormalities with the most notable being increased creatinine kinase and aspartate aminotransferase likely due to muscle damage, and the animal had a significant myoglobinuria. Red-Bellied Black Snake Pseudechis porphyriacus, Elapidae Red-bellied black snake venom is reported to be strongly haemolytic and weakly neurotoxic; however few reports of envenomation by Pc. Poisoning by Cane Toads Bufo marinus, Anura: Bufonidae Cane toads have been an invasive pest in Australia for nearly 80 years and in that time have decimated native animal populations and destroyed pristine habitat [4 , 32]. The Australian Government Department of the Environment has identified 15 biodiversity hotspots in Australia Figure 2 a ; the cane toad is already in five of those locations and has the potential to invade at least three more. The 15th biodiversity hotspot is in Tasmania, where no cane toads have been recorded. To give a clearer picture of the danger cane toads pose to native Australian fauna, the level of species richness has been overlaid with the cane toad population map Figure 2 b. The cane toad population data is overlaid with species richness data; blue indicates higher and yellow lower levels of species diversity, respectively b. Maps created from [33]. Cane toad poison induces neurological and cardiovascular effects and exposure to cane toad poison can be lethal to both dogs and cats [5 , 8]. Bufonidae contains high concentrations of orally active compounds and is the main reason their toxicity in predatory animals is so high. Contaminated drinking water and food is a particularly insidious exposure route and good hygiene can go a long way towards reducing that risk for pet and livestock caretakers. Cane toad poison consists in large part of bufadienolides, a steroid that is a type of cardiac glycoside. Interestingly, compared to other life stages, cane toad eggs contain both the highest number of individual bufadienolides and the highest concentration of those compounds compared to later-stage juveniles [7]. These compounds act by inhibiting the sodium-potassium pump and increasing the force of contraction by the heart, thus increasing cardiac output. Cane toad poisoning is not just an Australian problem. Dogs are more commonly poisoned than cats and terriers are disproportionately represented in the demographics [8 , 34]. Exposure to cane toad poison produces some or all of the following signs: Electrocardiographic findings were most commonly sinus arrhythmia, sinus tachycardia, and normal sinus rhythm [34]. Stings, Bites, and Poisoning 2. Hymenoptera The insect order Hymenoptera includes the Apoidea bees , Formicidae ants , Vespoidea wasps, hornets, and yellow jackets , and Symphyta sawflies. Bees lose their stinger after stinging and die, but vespids can sting multiple times and also bite. Ants bite and some secrete venom that travels through the wound created at the bite site. Although anaphylaxis due to rapid hypersensitivity is the primary concern with Hymenoptera venom [10], ant bites and stings have long been known to cause severe pain and irritation [36]. No antivenom is available for bites and stings by Hymenoptera; in most cases, management of clinical signs including anaphylaxis is the only recourse. This can generally be achieved through administration of fluids, corticosteroids, and supportive care [37]. Recently, the first account of survival after bumblebee-sting induced anaphylaxis in a dog was reported: The dog was discharged after seven days with ongoing polyuria, polydipsia, and behavioral changes. Although not currently present in Australia, Africanized bee stings present a significant threat of veterinary concern should they colonize. A retrospective study of dogs envenomated by Africanized bees in Brazil demonstrated dark-colored kidneys, dark red urine, dark red lungs, and splenomegaly as the major gross changes [40]. After a red blood cell transfusion, immunosuppressive dexamethasone, and gastroprotectant therapy, the dog stabilized and platelet count returned to normal within a week. In another case of bee sting envenomation, immune-mediated hemolytic anemia developed in two dogs; one dog died and the hemolysis in the other was resolved following prolonged administration of corticosteroids [42]. Sawfly poisoning in Australia is largely due to Lophotoma spp. Livestock, particularly sheep and cattle, are exposed to sawfly poisoning when leaves on the ground have sawflies on them and are ingested [37]. After removing animals from the sawfly source, the recommended management of poisoning consists of administration of silymarin and penicillin and glucose to prevent toxicosis and significant changes to liver enzymes [37]. Lepidoptera In addition to the Hymenoptera, caterpillars of many Lepidoptera butterflies and moths contain urticating hairs and spines.

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Chapter 6 : (EPUB) 50 Poisonous Questions download

Australian snakes are some of the most venomous animals in the world and bees, wasps, ants, paralysis ticks, and cane toads are also present as part of the venomous and poisonous fauna. The diagnosis and treatment of envenomation or poisoning in animals is a challenge and can be a traumatic and expensive process for owners.

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It contains taxonomic, distribution, venom, clinical effects, first aid, treatment and antidote information on a growing range of venomous and poisonous animals. The list of species covered is planned to cover all significant animal, plant and mushroom species worldwide.

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The Clinical Toxinology Resources Website is a web-based site for information on venomous animals and poisonous animals, plants and mushrooms. It covers the whole World, with both general information and information about particular organisms, located through a searchable database, that allows users to look for an animal, plant or mushroom.