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Dr. Niranjala de Silva is a Senior Lecturer in the Department of Veterinary Clinical Sciences (DVCS), Faculty of Veterinary Medicine and Animal Science, University of Peradeniya. She was the Head of DVCS and a member of University Senate. She is specialized in Veterinary Anaesthesia, Surgery and Diagnostic Imaging. She obtained her PhD from University of Cambridge, UK and a winner of Cambridge Commonwealth Trust Scholarship. She was instrumental in establishing the new Veterinary Teaching Hospital since early 2020s and still striving to upgrade the services provided by it. She is a Fellow of Cambridge Commonwealth Trust and Founder Fellow and the present President of the Sri Lanka College of Veterinary Surgeons. She is also a member of the Veterinary Council of Sri Lanka and was the immediate past President of Sri Lanka Veterinary Association (SLVA).

**Prof. Indira Silva**

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**Dr. Deepika Wanninayake (BVSc)**

Dr. Deepika Wanninayake graduated from the Faculty of Veterinary Medicine and Animal Science in 2006 and later obtained a MVM in Biosecurity from Massey University in 2012, New Zealand and year 2016, a PhD in Immunology at the University Putra Malaysia. Presently he is a senior lecturer at the University of Peradeniya. His research interests include characterization and understanding of the aetiological pathogens that directly impact food security and food safety. He collaboratively works with the animal production industry to strengthen sustainable production and distribution of agricultural networks. He has been a resource person for national and international animal disease diagnostics and management workshops. Besides, his research outcomes were published in high impact scientific journals and he obtained presidential awards for his scientific contributions from 2016 onwards. Since 2016, he has been able to secure international and national grants worth 86.4 million and establish a modern laboratory equipped for molecular diagnosis of animal diseases, including Covid-19 in humans. He has been funded by the University Grants Commission to implement one health approach for successful control COVID-19 with the utilization of genetic tools to tracing SARS-CoV-2 transmission, especially when the positive cases could not be traced up to the exposure point, identify epidemiological dynamics and improve the control measures.

**Dr. Tharanga Thoradeniya**

Tharanga is a Senior Lecturer at the Department of Biochemistry and Molecular Biology, Faculty of Medicine, University of Colombo, Sri Lanka. She has a multidisciplinary background and has broad research interests and experiences in nutrition and cardiometabolic health, food environment, one-health and animal welfare. She received the 2020 Global Animal Welfare Award by the World Veterinary Association (WVA) supported by Ceva Santé Animale. WVA Animal Welfare Awards recognizes and rewards veterinarians from all around the world for their contribution to the protection and welfare of animals and for the provision of outstanding and exemplary welfare-related services to animals, animal owners, fellow veterinarians and the public.

**Dr. Erandi Pathirana BVSc, MSc, PhD**

Dr. Erandi Pathirana is a Senior Lecturer at the Faculty of Urban and Aquatic Bioresources, University of Sri Jayewardenepura. After obtaining her first degree from the Faculty of Veterinary Medicine and Animal Science, University Peradeniya, she proceeded with a master’s degree from the Osaka Prefecture University, Japan. Having specialized in Aquatic Animal Health and Microbiology for her PhD, from the School of Veterinary Science, The University of Sydney, Australia, Dr. Pathirana is interested in providing her expertise in maintaining health in commercial aquaculture and in natural aquatic ecosystems.

**Dr. Sylvia Wijayarathna (BVSc)**

Sylvia Wijayarathna, graduated in 1995, and is currently practicing at an Animal rescue organisation. Her passions are Animal Rights and Welfare, Feline Medicine and Sri Lankan Dogs, and also has quite a soft spot for horses. She’s the proud owner of nine rescue dogs and seven cats.
Dear readers,

We are glad to release the second volume of the ‘Your Veterinarian’ quarterly magazine which was launched early this year as a mode of communicating veterinary related subjects to the general public. We could not print the volume for the second quarter of the year due to the lockdown situation in the country because of the 3rd wave of Covid 19. However, we are glad to issue this second volume which contains articles from all the veterinary related fields for the interest of the readers. We have articles spanning from pet animals, farm animals, wildlife & aquatic animals, public health to animal welfare & different articles talking about the human-animal bond in Sri Lankan culture. Therefore, we believe that you will read the articles in this magazine too with great interest.

The Sri Lanka Veterinary Association which was founded in 1940 has passed eight decades for servicing the profession. We believe that there should be a closer communication with the general public for educating and empowering the animal loving people in this country. We are trying to share with you some of our knowledge, experience and views in order to strengthen the link among us. You are invited to write to us or communicate to us by any convenient means about your feelings on this magazine, veterinary service, your experiences or any other views that you have about the veterinary related areas. We welcome your ideas and wish to address them in the upcoming volumes of the magazine and your ideas will be considered as valuable suggestions for the development of the bond among us and our profession in general.

We included articles in all three languages in the magazine giving due consideration to readers conversant with all three languages. Any ideas about the content of the articles or composition of the magazine are important for future improvements of the magazine. In future, we expect to include more articles targeting the school children to make them aware of importance and benefits of having pets, looking after them well, contribution of food of animal origin to maintain healthy life, protection of wild animals etc. Please link-up using any mode of communication with the SLVA in future for the mutual benefit.

Take care and stay safe!

Write to: Editorial Committee, Sri Lanka Veterinary Association, No. 275/75, Prof. Stanley Wijesundara Mawatha, Colombo 7.
Email: secretary@slva.org

Voice of the editorial team

73rd Executive Committee of SLVA

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Kandy Esala Perehera and involvements of elephants

Prof. Ashoka Dangolla

Kandy esala perehera begins from Aluthnuwara devalaya, Mawanella which conducts perehera for 21 consecutive days out of which the last 5 days are colorfully and glamorously held at nights. This happens much earlier compared to perehera held in Kandy each year. During this time in Aluthnuwara, the KAP, a tree with latex (normally Jak) is identified from a clean land and some rituals carried out for 7 consecutive days. A portion of this tree is ceremonially cut, washed with saffron, is brought with utmost respect to Aluthnuwara temple of the god and is venerated until the Aluthnuwara perehera is over. The KAP then is transported on elephant back to Kandy Vishnu temple, after which Kandy esala perehera theoretically begins. The relics, gods ornaments and KAP, are carried on a tusker, if not a male elephant. Thus a tusker is the most culturally valuable animal, followed by non tusker males (aliya, pussa). In any perehera, the Nilame, the lay custodian of the relics (gods ornaments), is given the highest priority and therefore the best talented traditional Kandydan dancing troupe performs immediately in front of the Nilame. In Aluthnuwara however, the Nilame does not walk in the procession, because the attire of Aluthnuwara god is identical to that of costume of the Nilame (Kandydan noble costume) and nobody would dare dress like the god!

KAP at Vishnu temple in Kandy then, is cut into 5 sections and is ceremonially distributed among the Maligawa and the 4 devalayas (Natha, Vishnu, Kataragma and Pattini) in “KAP planting” ceremony. From that day, the Kandy esala perehera begins firstly on 5 consecutive days within the respective temple premises, secondly Kumbal (less colorful) on the streets for further 5 consecutive nights and thirdly, colorful Randoli Perehera during 5 subsequent and consecutive nights. The Kandy esala perehera each day, is a combination of 5 sections, firstly Maligawa (any color), followed by Natha (light yellow), Vishnu (blue), Kataragama (red) and Pattini (yellow) gods’ temples in that order which can be identified from their respective colors. The first Kumbal perehera is generally witnessed by many children because most parents believe that this could bring their children good luck and gets rid of the “evil eye”. In the first Kumbal perehera, the Diyawadana Nilame, walks as the custodian while the rest of the 4 Kumbal days, one of the four other custodians of temples of gods, walks on behalf of the Diyawadana Nilame. On the 6th consecutive day of the public perehera (Kumbal), it becomes Randoli which are colorful. All 4 Nilames and the Diyawadana Nilame, walk in all Randoli pereheras, in their respective sections. The dress of Nilames, elephants, illuminations and dancing troupes become more colorful during Randoli. Most often, the length of the perehera on each day increases with Randoli, since the number of dancing items and elephants keep increasing. National and international photo-graphers, film producers and writers prefer to witness Randoli for these reasons.

A television recording is done at some point of Randoli, using very powerful lighting and equipment that suddenly move sideways and upwards closer to elephants in parade. Elephant keepers and elephant veterinarians are made aware of such filming beforehand to be prepared for any potential emergency. Health clinics for elephants, elephant keepers, dancers and drummers are also held during one of the Randoli days since...
Most individuals of each of such categories participate on such Randoli days. For elephants, deworming, tetanus toxoid, wound sprays and vitamin and mineral supplements are distributed in such clinics. There had been times that local or foreign institutions/groups and/or individuals have funded such events. If seriously ill elephants are identified by the veterinarians during such clinics, follow up treatments are recommended to the owner and custodian concerned.

Immediately after the last night randoli (15th day), two pereheras begin from Maligawa. Firstly, a perehera with few elephants, goes to Adahana Maluwa, a temple situated about 0.5km away from Maligawa. The tusker carrying the casket with sacred relics, essentially go in this temple situated about 0.5km away from Maligawa. The tusker carrying the casket with sacred relics, essentially go in this temple, until the perehara and casket is deposited at the Maligawa. The tusker carrying the casket carrying the casket and other elephants. This meeting of the two perehera occurs in Kandy town and thereafter it forms the day perehera. This day perehera, after circling 3 rounds on a pre determined route, enters into Maligawa and respective gods temples at an auspicious time signifying the end of Perehera events. The elephants who participate in this day perehera (on the 16th consecutive day), are dressed but not be illuminated. The day perehera, is held on a week day and the afternoon on that day is generally declared a half holiday in most places in Kandy. After the day perehera, the Diyawadana Nilame and all other nilames would participate perehera with a few elephants, report to the President of the Sri Lanka Democratic Republic, at his/her Kandy residence during which time, the President makes donations to different temples, a custom continuing from the days of kings.

Some elephants may stereotype (dance as popularly known), some appear sleepy and some keep yawning during the perehera. The fact that only about half of the elephants show stereotyping needs investigation. Elephants have amok during kumbal, randoli and even day perehera. Though it is beautiful to see an illuminated elephant while carrying people on the back, running amok, is a shocking sene astonishing to witness for a novice. Veterinary surgeons mostly provide help, advice, take precautions to prevent such events, but failing all such attempts, would not hesitate to tranquilize and tether. Until all elephants brought from elsewhere are taken away from Kandy, the veterinarians must be on alert because there were situations in which elephants have run amok even after the 17th day in Kandy, at times refused to be loaded into their lorries to go back home while some have even come into musth. After Kandy Esala Perehera, peripheral temples of Lankathilake, Amabekka,Gadaladeniya, Hanguranketha, Pasgama, Alawathugoda and Morape, devalayas have such pereheras., Ratnapura saman temple, Ruhunu Kataragama and Kelaniya temple also hold their perehera around this time.

The current Chief custodian, Diyawadana Nilame is knowledgeable on Kandyan dancing and drumming, and therefore he pays more attention in selecting dancing troupes. He has also initiated several dancing schools for this purpose under the patronage of Maligawa. Artists prefer such custodians because a competition is created among dancing schools and thereby skills of dancers could be enhanced which help maintaining respective traditions. Elephants in Kandy perehera, which are currently about 80, are kept at musth. After Kandy Esala Perehera, peripheral temples of Lankathilake, Amabekka,Gadaladeniya, Hanguranketha, Pasgama, Alawathugoda and Morape, devalayas have such pereheras., Ratnapura saman temple, Ruhunu Kataragama and Kelaniya temple also hold their perehera around this time.

Special swards used for water cutting ceremony, in Mahaweli river in Getambe, are carried by individual gods temples. During the water cutting ceremony, water from the previous year is released back to the river and new water is collected to all 5 containers. The KAP (5 from each temples) of the previous year, are also brought to Gatambe and are released to Mahaweli river. From this day onwards, citizens expect rain and success in agricultural work and therefore at the ceremony, lots of sweet meets and milk rice is distributed for public and for elephants. After the water cutting ceremony, the perehera with elephants leaves Gatambe around 8 am, to Kandy to meet a perehera coming from Adahana Maluwa with the tusker carrying the casket and other elephants. This meeting of the two perehera occurs in Kandy town and thereafter it forms the day perehera. This day perehera, after circling 3 rounds on a pre determined route, enters into Maligawa and respective gods temples at an auspicious time signifying the end of Perehera events. The elephants who participate in this day perehera (on the 16th consecutive day), are dressed but not be illuminated. The day perehera, is held on a week day and the afternoon on that day is generally declared a half holiday in most places in Kandy. After the day perehera, the Diyawadana Nilame and all other nilames would participate perehera with a few elephants, report to the President of the Sri Lanka Democratic Republic, at his/her Kandy residence during which time, the President makes donations to different temples, a custom continuing from the days of kings.

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The Maligawa currently owns 5 tuskers trained to carry the casket which includes one local, one Indian, a Thai and two from Myanmar. There are 4 other tuskers and 2 non tuskers belonging to Maligawa which are not trained to carry the casket yet. Asgiriya and Malwatta, the two main chapters of buddhist temples in Kandy own one tusker each who are still young and have not been fully trained to carry the casket as yet. Private elephant owners and other temples in Sri Lanka own 2 local tuskers (Kataragama Wasana, Gampaha Eka danta), one Indian (Nedungamuwa), two Thai (Kelaniya, Kandevihare) and two from Myanmar (Bellanvila, Kotte), 8 in total. The few captive elephants gifted from India, Thailand and Myanmar have been trained to participate in the perehera. This involved teaching local language in the presence of different new people for the elephant and new surroundings.

Firstly, they are trained to our surrounding for about 3 months mostly by keeping them tied with both hind legs to a tree, stump or to concrete poles in the temple in a public place. Elephant keepers get used to them during this period and while feeding, providing water and bathing, they speak a few words to elephants. Once such elephants are used to a few words in Sri Lankan elephant language, which has less than 50 words in total, he is taken for small walks with several other keepers (for additional safety). Until this time, the keepers and veterinarians from their respective countries of importation, stay in Sri Lanka with the elephant concerned. Such elephants are taken for baths usually in a tank, stream or a pond by the new keepers while the original keepers are around. I have interestingly encountered a situation in which a smart Sri Lankan keeper learnt elephant language of Myanmar and used Myanmar elephant language to get to know a tusker gifted from Myanmar! It has also been noticed that most senior experienced elephant keepers are left unemployed because their elephants have died and new captive elephants are scarce.

Surprisingly, most owners, keepers and therefore the custodians or chief organizers of elephant events know the time of the year and also approximate duration of musth periods in most male elephants. Information on the time and duration of occurrence of musth is also important if the owners want to sell such male elephants. There had been a situation where a male was proven to be culturally useless due to his musth overlapping with Esala Perehera. He was exchanged to a different male elephant from Pinnawela orphanage who currently serves the purpose better. The vehicles for elephant transportation and their drivers have no documented standards set by those owners or by the state. Lives of several important elephants had been lost because such vehicles were not up to the standard and/or the drivers were inexperienced and/or were reckless. The elephants, at times even tuskers, have died due to such accidents. Our observations have never shown evidence of thermal distress due to ear flaps in elephants in perehera possibly because it moves extremely slowly at a speed inadequate to disturb thermo regulatory system. Furthermore, perehera is held at night when the environment is relatively cold and Kandy is located in the central hill country of Sri Lanka which is anyway colder compared to most other areas in Sri Lanka.

A few employees during perehera, carry spray cans hanging on their back who keep spraying water on to pieces of Kopra with fire which have been accidently fallen on the ground from the torches. This prevents likely accidents of burns to elephants. It must be remembered that noise and fire are used to chase wild elephants away from human habitat while the captive elephants are supposed to walk with such disturbances in a Perehera! Most keepers believe that their elephant, once allowed to let loose, may not want to be obedient or may prefer to enjoy freedom thereafter. Therefore, allowing elephants to be loose without chains for short periods, providing longer chains or allowing them to be free with other elephants are not acceptable to them. This situation must be carefully analysed, studied and attended if captive elephants are to be given a proper leisure time. It is appropriate to mention here that using specially prepared coir straps to prevent chain cuts can be made popular in Sri Lanka despite the initiative to adopt novel innovative methods of elephant management by keepers and owners.
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37 MJ හා 37 MJ එක්ක අංකයේ මුද්‍රාවක් ගනිමින්. 150 MJ එක්ක අංකයේ මුද්‍රාවක් ගනිමින්. (Maize plant - 9.5MJ/Kg, Maize seeds - 12 MJ/Kg) එක්ක අංකයේ මුද්‍රාවක් ගනිමින්. 

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"37 MJ හා 37 MJ එක්ක අංකයේ මුද්‍රාවක් ගනිමින්?"
**Dr. C. Roopkumar** (BVSc, MVSc in Animal Science)

Dr. Roopkumar is an expert in animal science with a specialization in synthetic breeds. In the context of the document, he discusses the use of synthetic breeds in agriculture.

**New Method of Breeding**

The document mentions a new method of breeding that involves using synthetic breeds. This method is designed to improve the productivity and adaptability of livestock. Synthetic breeds are created by cross-breeding various species or strains to achieve desired traits.

**Purpose**

The purpose of this method is to create breeds that are better suited to the local environment and market conditions. This can lead to increased efficiency and profitability in the agricultural sector.

**Implementation**

Dr. Roopkumar elaborates on the implementation of this method, highlighting its potential benefits and challenges. He discusses the selection process, improved health and productivity, and the role of genetic diversity in the development of new breeds.

**Conclusion**

The document concludes by emphasizing the importance of continued research and collaboration in the field of synthetic breed development. It encourages further exploration of this method to address the ever-changing needs of the agricultural sector.

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**Image Caption**

The image shows a group of sheep, with Dr. Roopkumar standing among them. The context is likely related to his work in animal science and the promotion of new methods in breeding.
(Extensive management) என்பது வல்லப்பாதுகை பல்கலைக்கழகம் (Semi-Intensive management) வரிசையாகும் இந்த மாதிரியில் மாற்றுப் பயிற்சி நடத்தப்படும். இது மூன்று வகைகள் இரண்டு வகையாகவும் பல்கலைக்கழகத்திற்கு தோற்றம் அளிக்கிறது. இவைகள் என்பது பொழுதுபோக்கு மூலம் இரண்டு வகைகளில் அடையலாம்: 1. நிலையிட்டு விளக்கும் மறைமாரிகள் அல்லது நிலையிட்டு விளக்கப்பட்டு மறைமாரிகள் 2. நிலையிட்டு விளக்கப்பட்டு மறைமாரிகள் (F2) என்பது தனியான மராத்திய மராத்திகளைப் பிரித்துவிட்டு மறைமாரிகள் அடையலாம். இந்த எண்ணிக்கையான மறைமாரிகள் ஏற்றுக்கொள்ளப்பட்டு நூறு வருடங்கள் முற்பின்று பிரித்துவிட்டு மறைமாரிகள் அடையலாம். 2° வருடம் (F2) என்று சொன்று பம்பான நூறையுலக விளக்கும் (Seasonal mating) காலகாலப்படி மூழ்கல் நூறு வருடங்கள்.
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definitely intussusception can cause severe clinical signs and symptoms. Early diagnosis and appropriate treatment are crucial to prevent complications. Signs of intussusception may include vomiting, fever, abdominal pain, and bloody stools. X-ray and ultrasound may be used to confirm the diagnosis. Treatment typically involves surgical intervention or a series of barium enemas to reduce the intussusception. If not treated, intussusception can lead to necrosis and perforation of the bowel, which is a medical emergency.

**Surgical Intervention**

Surgical intervention is the gold standard for treating intussusception. The most common surgical procedure is an open reduction, which involves making an incision in the abdomen and manually reducing the intussusception. This procedure is usually successful and has a high success rate. However, complications such as bowel perforation or obstruction may occur. In some cases, a bowel resection may be necessary. The decision to perform surgery depends on the age of the patient, the duration of symptoms, and the severity of the intussusception.

**Barium Enemas**

Barium enemas are another treatment option for intussusception. This procedure involves injecting barium into the bowel through the rectum and then using X-ray imaging to monitor the passage of the barium. If the intussusception resolves, the barium will pass through the bowel. However, barium enemas are less effective than surgical intervention and may not be suitable for all patients.

**Other Treatments**

Other treatments may be used in combination with surgical intervention or barium enemas. These may include medications to reduce inflammation or to reduce the size of the intussusception. However, these treatments are not as effective as surgical intervention or barium enemas and are typically used as a last resort.

**Prevention**

Preventing intussusception is challenging, as the exact cause is not always known. However, certain factors may increase the risk of intussusception, such as a family history of the condition, prior surgery, or underlying gastrointestinal disorders. Regular physical examinations and health screenings can help detect intussusception early and reduce the risk of complications.

**Conclusion**

Intussusception is a serious condition that requires prompt medical attention. Early diagnosis and appropriate treatment are crucial to prevent complications and ensure a successful outcome. Surgical intervention is the gold standard for treating intussusception, but other treatments may be used in combination with surgical intervention or barium enemas.

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**References**

intussusception

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Nutritional Idiosyncrasies of Cats

Dr. Silvia Wijayarathna

Cats are not small dogs. They bear quite a few obligatory nutritional requirements that no other mammal possess. Here are a few nutrition and feeding related facts that show how cats are different from dogs.

1. They are obligate carnivores.

Unlike humans, who can lead a perfectly healthy life devoid of consuming any animal products, cats simply would not survive on a plant based diet. This however, does not mean that they should be fed on a purely meat based diet. Cats can digest and utilize nutrients from plants. Moreover, a very high or all meat diet could be dangerous for cats!

2. They may be allergic to certain carbohydrates

They could be allergic to certain carbohydrates; rice being one of the most commonly seen allergen fed to cats in Sri Lanka. If your cat is suffering from an incurable chronic gastroenteritis, possibly carbohydrate allergy is behind it.

3. Taurine- Source- Raw fish and meat

Taurine, is an amino acid that can be synthesized in the body of most species. Cats however have a limited ability to manufacture it, and therefore, it is considered an essential nutrient to be in a cats’ diet. Feline taurine retinopathy, more commonly known as, feline central retinal degeneration (FCRD), is a condition which develop as a result of long term Taurine deficiency, and could impair your cat’s vision. Dilated cardiomyopathy, which is caused by weakened muscle cells of the heart is another condition that could result from Taurine deficiency. Although Taurine is commonly available in meats and fish, it is destroyed easily when cooked. Therefore, unless your cat is a hunter and has access to raw prey, it is advisable to treat your cat to the occasional raw fish or two.

4. They should not be fed certain types of raw fish

"However, it’s also to be noted that many types of fish, in their raw form, contain Thiaminase, which is an enzyme that destroys Thiamine (Vitamin B1). This could in turn cause a Thiamine deficiency in your cat. This could lead to anorexia and vomiting followed by neurological signs such as loss of balance and unsteady gait in cats.

The following fish have been reported to contain thiaminase:

- Anchovy (Anchoa hepsetus) Related to “Haalmassa” and “Handalla”.
- Barb, Olive (Puntius sarana) “Mas Pethiya”
- Carp, Common (Cyprinus carpio)
- Catfish, Amieurus melas, (Amieurus nebulosus), (Ictalurus punctatus)
- Cod, Black (species undetermined)
- Dolphinfish, Common (Coryphaena hippurus)
- Goldfish (Carassius auratus)
- Herring, Atlantic (Clupea harrellun) - Related to Sardinelllas such as, “Hurulla”, “Salaya”, “Sudaya”, Keeramin which also belong to Order: Clupeiformes. Family: Clupeidae

- Lamprey, Sea (Petromyzon marinus)
- Mackerel, Chub (Scomber japonicus)
- Moray Eel, Southern Ocellated (Gymnothorax ocellatus)
- Mullet, Flathead Mugil cephalus) Godaya
- Parrot, Regal (Scarus dubius) Girawaa
- Sardine, Razorbelly, Scaled Sardine (Harengula jaguana)
- Scad, Bigeye (Selar crumenophthalmus)
- Shiner, Emerald (Notropis atherinoides)
- Shiner, Spottail (Notropis hudsonius)
- Smelt, Rainbow (Osmerus mordax)
- Snapper, Ruby (Etelis mordax)
- Swordfish (Xiphias gladius) – “Thalapath”
- Threadfin, Sixfinger (Polydactylus sexfili)
- Trevally, Giant (Caranx ignobilis) – Related to “Parawa”
- Tuna, Skipjack (Katsuwonus pelamis) – “Balayaa”
- Tuna, Yellowfin (Neothunnus macrumpetorand) - “Kelawallaa”
Whitefish, Lake (*Coregonus clupeaformis*)

Whitefish, Round (*Prosopium cylindraceum*)

Some shrimp, mussels, clams have also been reported to contain thiaminase; (see the Nutrient Requirements of Warmwater Fishes & Shellfishes by the NRC for more information).

The following fish have been reported free of Thiaminase:

- Amberjack, Greater (*Seriola dumerilii*)
- Barracuda, Great (*Sphyraena barracuda* “Jeelawa”)
- Bass, Largemouth (*Micropterus salmoides*)
- Bass, Northern Rock (*Ambloplites rupestris*)
- Bass, Northern Smallmouth (*Micropterus dolomieu*)
- Bloater (*Coregonus hoyi*)
- Cisco / Lake Herring (*Coregonus artedi*)
- Cod, Atlantic (*Gadus morhua*)
- Eel, American (*Anguilla rostrata*)
- Eel, Common (*Anguilla anguilla*)
- Flounder, Winter / Lemon Sole (*Pseudopleuronectes americanus*)
- Flounder, Yellowtail (*Limanda ferruginea*)
- Haddock (*Melanogrammus aeglefinus*)
- Halibut, Atlantic (*Hippoglossus hippoglossus*)
- Kawakawa (*Euthynnus affinis*)
- Mackerel, Atlantic (*Scomber scombrus*)
- Mullet (*Mugil “Godayaa”*)
- Perch, European (*Perca fluviatilis*)
- Perch, Ocean / Redfish (*Sebastes marinus*)
- Perch, Yellow (*Perca flavescens*)
- Pike, Northern (*Esox lucius*)
- Plaice, American (*Hippoglossoides platessoides*)
- Pollock / Saithe (*Pollachius*)
- Salmon, Atlantic (*Salmo salar*)
- Salmon, Coho (*Oncorhynchus kisutch*)
- Scad, Mackeral (*Decapterus pinnulatus*) Related to “Linna” and “Bolla”
- Scad, Yellowtail (*Atule mate*) Related to “Linna” and “Bolla”
- Sea Catfish, Hardhead (*Ariopsis felis*)
- Seabass, Black (*Centropristis striata*)
- Seatrout, Sand (*Cynoscion arenarius*)
- Seatrout, Silver (*Cynoscion nothus*)
- Skate (*Raja*)
- Sprat, European (*Sprattus sprattus*)
- Surgeonfish, Eyestripe (*Acanthurus dussumieri*)
- Tilapia (various species)
- Trout, Brown (*Salmo trutta*)
- Trout, Lake (*Salvelinus namaycush*)
- Trout, Rainbow (*Oncorhynchus mykiss*)
- Trout, Sea (*Salmo trutta*)

5. Arginine

Taurine and arginine are synthesized at a lower rate as a consequence of low activities of two enzymes in the pathways of synthesis.

Cats also have obligatory dietary requirements for vitamin D and Niacin as the result of high activities of enzymes that catabolise precursors of these vitamins to other compounds. The dietary requirement for pre-formed vitamin A is said to be a result of the lack of enzymes required for cleavage and oxidation of carotenoids. Low activities of desaturase enzymes indicate that cats may have a dietary need for pre-formed PUFA (Poly Unsaturated Fatty Acids) too in addition to those needed by other animals to maintain normal plasma concentrations.
Dr. Oswin Perera (BVSc Ceylon, PhD Glasgow, FSLCVS) was Professor of Farm Animal Production and Health at the Faculty of Veterinary Medicine and Animal Science, University of Peradeniya, is now retired, but continues to assist with teaching and research. Previously, he worked for the United Nations at the Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture in Vienna, Austria. His teaching and research have focused on reproduction of cattle, buffaloes and elephants, human – wildlife conflicts, and risks from zoonotic diseases. He is a past President of the Sri Lanka Veterinary Association, Founder President of the Sri Lanka College of Veterinary Surgeons and current President of the Veterinary Alumni Association of Peradeniya. His hobbies include travel, hiking and wildlife photography.

A Selection of 'Elephantine Friends' Captured by the Lens of a 'Large Animal Vet'

There are three species of elephants existing today: Asian elephant (*Elephas maximus*), African savannah elephant (*Loxodonta africana*) and African forest elephant (*Loxodonta cyclotis*). The Asian elephant has four sub-species: the Sri Lankan (*E. maximus maximus*), the Indian or Mainland (*E. maximus indicus*), the Sumatran (*E. maximus sumatranus*), and the recently recognized Bornean (*E. maximus borneensis*). Wild Asian elephants are currently present in only 13 countries ('range states'), and their population as estimated by the Asian Elephant Specialist Group (AsESG) of IUCN is 48,000 – 51,000 (for range map and country populations see: https://www.iucnredlist.org/species/7140/45818198).

*Elephas maximus maximus* – prime adult tusker @ Udawalawe NP:
Sri Lanka has ~ 6,000 wild elephants, the second highest among the 13 range states. The incidence of tuskers in Sri Lanka is very low, being only about 7% of the males. This tusker was an orphan, rehabilitated at the Elephant Transit Home in Udawalawe and released back to the wild as a juvenile in 1992.

*Elephas maximus maximus* – herd of adult females with calves and juveniles @ Minneriya NP:
This is part of the now world-famous ‘Gathering’ that occurs annually during July to September in Minneriya and Kaudulla NPs. On the day this photo was taken over 300 elephants were sighted during one afternoon. There were many calves and juveniles, indicating a good reproductive rate.

*Elephas maximus indicus* – prime adult tusker @ Nagarhole NP, India:
India has ~29,000 wild elephants, the highest among the 13 range states. There are 29 elephant reserves spread over 14 States covering 65,000 km² (the size of Sri Lanka). The proportion of tuskers among males in different populations within India range from 40 - 90%.

*Elephas maximus indicus* – female with calf @ Khao-Yai NP, Thailand:
The wild elephant population in Thailand has declined from over 6,000 several decades ago to ~ 3,200 at present, distributed in 69 protected areas. The number of captive elephants is over 3,500.
**Elephas maximus indicus** - herd with a juvenile tusker @ Elephant Conservation Centre (ECC) in Sayabouri, Laos:

Laos was historically called the ‘land of a million elephants’, but now has only 500 – 600 in the wild, plus ~ 450 in captivity. The ECC rescues elephants that are kept under sub-standard conditions, provides veterinary care, promotes development of herd behaviours, and where possible releases them back to the wild.

**Elephas maximus sumatranus** – prime adult tusker and two females @ Elephant Conservation Centre (ECC) in Lampung, Sumatra, Indonesia:

The Sumatran elephant is categorized as ‘critically endangered’ by IUCN, with less than 1,700 in the wild and ~ 450 in captivity. The ECC is part of the Way Kambas National Park system in Lampung and has captive elephants that are used for ecotourism, breeding, and patrolling to prevent human-elephant conflict.

**Elephas maximus borneensis** – prime adult tusker and two females @ Kota Kinabalu Zoo in Sabah, East Malaysia:

The status of elephants on Borneo (called ‘pygmy elephants’) has been the subject of much debate, but results of genetic studies by Fernando et al. (2003) and Sharma et al. (2018) (see: https://www.nature.com/articles/s41598-017-17042-5.pdf) have resulted in their being recognized as a separate sub-species. The population is estimated to be ~2,000 in the north-eastern regions of Borneo (Sabah, East Malaysia), and 60 – 80 in southern regions (Kalimantan, Indonesia).

**Loxodonta africana** – senior adult male @ Savute NP, Botswana:

The population of both species of African elephants is ~ 415,000, with Botswana having the highest population of the savannah species at ~ 130,000. The forest species (Loxodonta cyclotis) is found only in Central Africa and is categorized as critically endangered, with an estimated population below 30,000.

**Loxodonta africana** – herd of females and calves @ Chobe NP, Botswana

The river system of Okavango, Savute and Chobe in northern Botswana is said to support ~ 100,000 elephants. Last year over 330 elephants died from an illness that was later confirmed as being due to a toxin from Cyanobacteria found in water.

**Loxodonta africana** – female with calf @ Kruger NP, South Africa

South Africa’s elephant population is estimated at ~ 17,000, with almost half of this number located in the Kruger NP and the adjacent game reserves. This is one of the largest protected areas for wildlife in Africa, where the ‘Big Five’ can be sighted regularly, and extends over 20,000 km² (one third the size of Sri Lanka).
SARS-CoV-2 infection

SARS-CoV-2 (Coronaviridae) belongs to the subfamily Coronavirinae, which includes four genera: alpha-CoV, beta-CoV, gamma-CoV, and delta-CoV. The most significantivirus in this group is SARS-CoV (severe acute respiratory syndrome coronavirus), which caused the SARS outbreak in 2003. Another coronavirus, MERS-CoV (Middle East respiratory syndrome coronavirus), emerged in 2012, causing a significant outbreak in the Middle East.

PD-19, 2021: From people to Panthera (Natural SARS-CoV-2 infection in tigers and lions at the Bronx Zoo). MBio 11(5), e02220-2020


SARS-CoV-2 and the Risk of Viral Cross-Host Transmissions

In order to predict the potential risk of viral cross-host transmissions, it is important to understand the role of ACE2 in viral entry. ACE2 is a transmembrane protein that is expressed in various cell types, including epithelial cells, which facilitate the entry of SARS-CoV-2. However, the expression of ACE2 is not limited to humans; it is also found in various animal species, including non-human primates and some marine mammals.


Western lowland gorilla (Gorilla gorilla), Sumatran orangutan (Pongo abelii), and Northern white-cheeked gibbon (Nomascus leucogenys) are examples of non-human primates that express ACE2, and thus are potential intermediate hosts for SARS-CoV-2. Similarly, marine mammals such as bottlenose dolphins (Tursiops truncatus) and Chinese hamsters (Mesocricetus auratus) also express ACE2 and are therefore at risk of viral transmission.

These findings highlight the importance of understanding the role of ACE2 in viral entry and the potential for viral cross-host transmissions. Further research is needed to better understand the dynamics of viral transmission and to develop effective strategies to prevent the spread of SARS-CoV-2.
SARS-CoV-2  

Zoonotic diseases are infections that can spread from animals to humans. One such disease, SARS-CoV-2, emerged in China in 2019. The virus is thought to have jumped from animals to humans, possibly through a market in Wuhan. The World Organization for Animal Health (OIE) has classified SARS-CoV-2 as an emerging disease (Emerging). The OIE has also identified it as a zoonotic disease (Zoonotic).
Sedating or tranquilizing, and medically attending to wild animals require the services of qualified and skilled veterinarians who have adequate experience in attending to wild animal cases. Handling an injured animal should be done in a manner which will protect both the animal and the attending people. This is because an injured wild animal is aware of its immobility and the risk of predator attack, and will experience extreme fear when it is approached by humans. Therefore, approaching and injured animal must be done by those who are aware of the above facts. What we normally see in Sri Lanka is people gathering around the animal in masses, shouting and laughing, sometimes followed by household dogs too. All those sounds and the smell/odour of the humans will aggravate the fear in the animal making it difficult to be saved due to psychological trauma in addition to physical trauma. Only a minimum number of persons, appropriately attired, must approach the animal with first-aid boxes and a collapsible stretcher or a box cage.

Internal injuries may not be immediately detectable and deeper injuries may not be apparent through the animal’s fur. If the animal is released (eg: a non-target animal), it may die later-on from injuries. Animals that escape or are released may subsequently die from their injuries or from exertional myopathy (muscle damage) over a period of days or weeks. Animals left in snares for hours get exposed to the elements, to thirst, hunger, further injury and attack by predators. Therefore, it is difficult to assess the severity of injury in an animal caught in a snare or trap.

Facilities for wild animals – Since the presence and severity of injuries of a frightened and/or injured/stressed wild animal cannot be adequately assessed in the wild, unless it is moribund, only an experienced Veterinarian can judge the clinical condition and decide on the drug dosages for sedation, based on his or her working experiences with wild animals in the wild. Veterinarians do not treat only one species of animals (like medical doctors) or even ten species of animals, rather many different species. As such, one veterinarian cannot have expertise on all species on land, air and water. Therefore, Wildlife Veterinarians need to be specialized or trained on different animal groups which require an enhancement of veterinary personnel in the Department of Wildlife Conservation (DWLC). Such trained veterinarians together with a small team of able assistants and a dependable transport facility can attend to the sick anywhere in the country, depending on the type of animal that needs medical attention.

Furthermore, wildlife shelters and rehabilitation centres that are geared to receive sick, injured or orphaned wild animal species are essential in the DWLC to ensure that the animals receive accurate diagnoses and the best possible treatment options. Also, when treating animals, certain species of animals cannot be housed close to each other. Therefore, centers to treat injured or otherwise incapacitated wild animals, post-treatment rehabilitation and returning them back to the wild, need to be established in locations with relatively easy access.
Why are marine turtles dying on our shores?

Dr. Erandi Pathirana

Never have we been so unfortunate to observe and experience a chain of marine turtle deaths in our seas. At the time of this writing, more than 170 dead marine turtles were reported to have washed ashore. This article looks at the global picture of marine turtles in the face of human impacts on the marine environment and how we should systematically investigate into the cause of death of an individual turtle or a population of marine turtles.

Why are marine turtles unique?

Marine turtles are a fascinating group of marine reptiles. Unlike most other turtles and tortoises, marine turtles cannot retract their head and limbs into their shells, in threatened situations. They can be found in all oceans except those in the polar regions. During their nesting season, female turtles swim ashore to lay their eggs on sandy beaches. After an incubation period of 50-60 days, baby turtles hatch out, dig through the sand, and crawl to the sea. This is a magical sight which needs to be witnessed by anyone who loves the sea and its wonderful creatures! Being a country, which is globally recognised as one of the few places in the world where marine turtles can be observed in their natural habitat, numerous foreign tourists visit Sri Lanka each year to witness this fascinating behaviour of this special marine creature.

At present, seven species of sea turtles have been reported to exist in our blue planet and Sri Lankan marine waters are home to five out of these seven species, the green turtle, olive ridley turtle, hawksbill turtle, loggerhead turtle and leatherback turtle. Claimed to be the largest out of these five species, the leatherback turtle is critically endangered and is reported to be rare in Sri Lankan waters. Overall, six out of seven species of sea turtles in our world, are listed as vulnerable, endangered, or critically endangered on the International Union for Conservation of Nature (IUCN) Red List of Threatened Species. It is important and timely to look at how the existence of these amazing creatures are being threatened and what we can do to prevent them getting extinct from this planet.

Threats to marine turtle life

To date, several threats have been identified for the existence of marine turtles. Different coastal communities of the world hunt sea-turtles as a source of food, adding more pressure on the numbers of this threatened creature. The use of turtle shell in the production of ornaments and the use of turtle-oil in the production of cosmetics and medicine have added to this threat. Many countries have banned the collection of eggs of this animal, however illegal harvest is not rare. According to research carried out by the National Aquatic Resources Research and Development Agency (NARA), Sri Lanka, collection of marine turtle eggs from the rookeries for human consumption and marketing eggs to marine turtle hatcheries have been identified as major threats to the existence of marine turtles in Sri Lanka. Globally, longline and trawl fishing have long been accused for accidental capture of marine turtles. Thousands of turtles (covering all species) get killed in shrimp trawls, longline fisheries, and great numbers get drowned in Gill nets.

Mass mortalities of marine turtles in our beaches

Unlike the individual stranding of marine turtles reported in various beaches of the world, mass mortality outbreaks of marine turtles are more alarming and catch the attention of various parties. The recent occurrence of mass stranding of marine turtles in our beaches which caused so much concern, triggered this article. According to the reports of the Department of Wildlife Conservation (DWLC), Sri Lanka, an annual average of 5 turtle deaths are usually reported in our shores, excluding the death of baby turtles. In the year 2020, three deaths...
turtles were reported before the fire of the vessel MT New Diamond which caught fire in our seas. Fifteen dead turtles were reported on our shores, following this fire. To date, more than 170 dead turtles have been reported on our shores following the devastation of the MV X-Press Pearl vessel. The mystery of dead marine turtles washed ashore, still remains. Is it an aftermath of the fire in X-Press Pearl? If so, what actually has happened to the turtles? What can be the cause of this mass mortality outbreak? What should be our plan to investigate into this matter? It is important to find solid, scientific answers to these questions. After all, it is our marine turtle population that is dying.

**Harmful algal blooms (HABs)**

Toxic or harmful algal blooms (HAB) have been reported to cause mass mortalities in marine turtles in various parts of the world including Florida, USA, and in the Gulf of Mexico. HABs are thought to have a great impact on marine turtles. A mass stranding of 318 marine turtles was reported in one such outbreak that occurred in the west coast of Florida, USA, during the period from 2005-2006. More than 90% of both live and dead stranded animals tested positive for the toxin produced by the single-celled algae Karenia brevis. High concentrations of the algal toxin were recorded in the stomach contents of affected turtles. It was also thought that the turtles inhaled this toxin when they came to the surface for breathing, which was present in the air by the action of wind and waves. Presence of suspected toxic algal blooms around the fire-stricken X-Press Pearl, has been suggested by scientists. However, up to now this has not been confirmed and has not been proved to be associated with the mass turtle stranding in our shores.

**Impact of chemical pollution in the marine environment**

Besides the possibility of a toxic algal bloom, the X-Press Pearl which was reported to carry loads of hazardous toxic substances and plastic nurdles may have created direct impacts on these already threatened creatures. A variety of fish species, dolphins and whales were also reported dead on our shores following this tragic incident of X-Press Pearl. Can there be an adverse impact of these hazardous chemicals on our marine turtles? If so, how are we going to investigate this impact? While the impacts of chemical pollution on marine life such as that of whales, seals and fish are well-studied, the threats of chemical contamination of the marine environment on marine turtles are mostly understudied. With the increasing interest and attention in the potential association between seawater contamination and mortality in marine turtle populations, it is of particularly importance to follow correct procedures and collect standard samples from stranded turtles, for toxicologic analysis. Apart from potential, short-term toxicities, bioaccumulation of hormone-mimicking chemicals such as atrazine, lead, zinc and copper have been proposed to alter reproductive hormones (oestrogens and testosterone) in turtles, potentially reducing the reproductive capacity in nesting turtles. Studies on heavy metals such as copper, cadmium, lead, and mercury in marine turtle populations have shown varying levels of these heavy metals depending on the species, region, stage of life cycle and tissue type sampled. Considering the concentration of toxic substances such as heavy metals in the top-level predators (carnivorous fish such as tuna) in the marine food web, the different levels in the marine food web occupied by marine turtles and the long life span of marine turtles, there is a high risk of chemical contaminants present in the marine environment to get accumulated in the body of turtles. This can lead to long-term impacts on marine turtles, such as reduced reproductive performances. This will further aggravate the existing threats experienced by these animals. Some research has also shown passing down of chemical contaminants to younger generations of turtles, through eggs.

**Legal protection to marine turtle life**

With all this background, what measures have been taken to protect this threatened animal population? Marine turtles are protected by law in most countries, including Sri Lanka. Relevant permits should be obtained before carrying out any investigation including post-mortem examinations, on these animals. In Sri Lanka, marine turtles are protected under the Fauna and Flora Protection Ordinance administered by the Department of Wildlife Conservation since March 1, 1938 (amended in July 20, 1972) and the Fisheries and Aquatic Resources Act of 1996. Independent organizations such as the Turtle Conservation Project (TCP) are actively working on marine turtle conservation strategies through education, research and community participation. Considering the threats faced by marine turtles, it is a challenging task for veterinarians, marine scientists and other responsible parties to investigate the cause or causes of the recent mass mortality outbreaks in marine turtles, within a legal framework.

**Post-mortem examinations**

One of the main approaches taken towards solving the mystery of the mass stranding of marine turtles in our beaches, was post-mortem examinations of turtles which is being followed up by various laboratory examinations for further diagnosis. Unfortunately, the diagnosis of the cause of death through post-mortem examinations is hampered by numerous factors. By the time the dead turtles are found ashore, most had undergone severe post-mortem changes, making it difficult to identify and assess the damages that are related to the true cause of death. This makes it difficult to assess the carcass both by gross
examination and microscopic examination of body tissues of the dead turtles. Nevertheless, the degree of decomposition can be grossly assessed from the external appearance of the shell, corneal opacity in the eyes of turtles, colour changes/darkening and sloughing of the skin, pooling of blood in lower parts (dependent parts) of the body of the turtle, degree of swelling, and odour. While the eyes of a marine turtle can be sunken due to dehydration in a fresh carcass, bulged out eyes were noted in almost all turtle carcases that washed ashore in the past few days, indicating post-mortem changes. It should be noted that veterinarians face practical limitations and difficulties in examining these large marine creatures in the coastal environment. However, all possible investigations were carried out and is being continued, to determine the cause of death of these poor creatures.

**Ingestion of marine plastics**

In the past, what observations have been made by veterinarians and marine biologists during post-mortem examinations of dead marine turtles? Accidental capture of marine turtles in capture fisheries results in damages to the gut following fishing line ingestion which is visibly evident even without opening up the gut. However, deaths caused by ingestion of marine plastic debris require thorough post-mortem examination before confirming the cause of death. Sometimes, plastic bags protruding from the cloaca/back of the turtle can be observed during preliminary examination of the carcases. Both the structure of the marine turtle gut and the composition of debris that have been ingested by the turtle play a part in mortality caused by plastic ingestion. Unlike most other animals that we know, marine turtles cannot vomit the food/debris that they ingest. As a result, the gut of marine turtle is prone to retain accumulated debris. On the other hand, rather than passing out the ingested plastic item as it is, pieces of soft plastic that were ingested at different times, can get assorted and pass as a single compacted item, leading to obstruction and damage of the gut. While small plastic particles can remain in the gut of a marine turtle up to four months, a plastic sheet can even remain up to six months. Thus, the results of plastic ingestion may be seen long after the plastic item has been ingested.

When attempting to study the gut contents to find out the cause of death of a marine turtle, the contents of the gut can be sieved to extract any plastic present. Marine turtles of different age groups can be exposed to different types of debris. Adults turtles living in the coast might come across larger plastic debris that has recently washed into the ocean. On the other hand, young turtles living in the open sea (pelagic region) might get exposed to smaller fragments that have degraded.

**Routine post-mortem observations**

In addition to the observations made on ingested plastics and their damage, marine turtles can exhibit changes in skin colour resulting by infections (red/purple colour skin or bleeding in the scutes (bony plates of the shell of a turtle), burns (dead, sloughing or black skin) and in toxicities (reddening or disc-oloration of the skin). Marine turtles, like other reptiles may show black spots in their liver when their liver cells take in foreign substances. This black colouration may increase when the amount of foreign materials increases. Tissues taken from freshly dead turtles can be subjected to microscopic examinations in the laboratory (histopathology). Samples from liver, kidneys and lungs are good candidates for identifying any suspected toxicities. These microscopic examinations should be coupled with laboratory testing for any suspected toxins. At the moment, several responsible parties have got involved in carrying out investigations, to identify the real cause of mortality in our marine turtles.

**Way forward**

With the ever-increasing amount of pollution and frequent accidents happening in our marine environments, there is an increasing role for veterinarians to play in diagnosing the contribution of various environmental factors to marine aquatic life including marine turtles. Yet there are numerous knowledge gaps that needs to be bridged in order to better understand the impacts of the present-day marine environment, on the health of marine turtles. Overall, a holistic approach involving collaborative research studies is mandatory to solve this riddle of mass mortality of marine turtles. The marine biologists, environmental scientists, oceanographers and chemical scientists should join hands with the veterinary diagnosticians performing post-mortem examinations in marine turtles, to improve our knowledge and to combat the multiple threats faced by this amazing marine creature to ensure their sustainability and preventing their extinction from this blue planet.

Globally, it has been estimated that about 52% of all marine turtles have ingested plastic debris in their gut. However, research shows that the amount of plastics that can be recovered from the gut would be greater in animals that have died due to plastic ingestion. On the other hand, turtles can die due to the impacts of plastic ingestion, even when they have ingested a single item of plastic. This results when the animal’s gut gets perforated or obstructed due to the plastic item that it had ingested. Both the structure of the marine turtle gut and the composition of debris that have been ingested by the turtle play a part in mortality caused by plastic ingestion. Unlike most other animals that we know, marine turtles cannot vomit the food/debris that they ingest. As a result, the gut of marine turtle is prone to retain accumulated debris. On the other hand, rather than passing out the ingested plastic item as it is, pieces of soft plastic that were ingested at different times, can get assorted and pass as a single compacted item, leading to obstruction and damage of the gut. While small plastic particles can remain in the gut of a marine turtle up to four months, a plastic sheet can even remain up to six months. Thus, the results of plastic ingestion may be seen long after the plastic item has been ingested.

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Like us, animals too are 'happy' when they are provided with all that is essential for their well-being and when they have the opportunities to express their natural behaviour.

We can say that an animal is in good state of welfare, when they are provided with the correct nutrition, comfortable safe housing, proper veterinary care for disease prevention and treatment so that they are healthy, and when they are in an environment suitable to express their natural behaviour. All animals should be handled with love and care and they should also be free from fear, pain and distress. Their physical and mental needs according to their species should be provided. Whether it is a pet animal or a farm animal or a wild animal, ensuring animal welfare is a top responsibility of all of us. Ultimately, animal welfare is enriched by our own ethical and social values and experiences, hence how we treat animals will be a reflection of our own-selves.

This column focuses on different welfare needs of different animals who are close to us. We are starting this column with an animal loved by people of all ages...Rabbit!

Rabbits are known as a symbol of good luck, cleverness, elegance and beauty.

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“කොහොමද ඔබ අද පිළිගේ විට මෙම විශේෂයෙන් කොහපු?” පෙන්වා විශේෂයෙන්මත් විකීර්ණතාව මෙහෙය විශේෂයෙන්මත් මෙහෙය අතුරින් ආරම්භ පිළිතුරු ලබා ගත්තේ පිළිතුරු පිළිතුරු පිළිතුරු විශේෂයෙන්මත් සැදුන සැදුන්නේ කුරුණින්නේ. විශේෂයෙන්මත් කිහිපයක් බොහෝ ලෙස, දිරිගල, දිරිගල, පොළොකුගේ අතුරින් අතුරින් දකුණු කර ගනන්නේ පුරානුව පිළිතුරු විශේෂයෙන්මත්.

“පුංචි නොදා.” මෙමවන අතුරින් අතුරින් සහ පුරානුව පුරානුව පිළිතුරු විශේෂයෙන්මත්.

මර ඔබ අවශ්‍යවත් මෙම පිළිතුරු පිළිතුරු මෙම පිළිතුරු පිළිතුරු පිළිතුරු ගැනීමෙන් පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු කියාදමින් පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු පිළිතුරු
“උතුරේ මෙහෙය මෙම ඉංගිරිය ඉදිරිපට දෙන අත විශේෂ අතර මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගිරිය ඉදිරිපට මෙම ඉංගී
The Bastet (Aka cat World )

Once upon a time there was a cat world. People in this world can turn into cats. One day they decided to spy on earth. So they sent their secret agents.

Famous !!! Friendly !!! Singer $$$ as an orange cat

Very fair shy and calm king send as a white cat......

Fashionable and arrogant lady stylist send here as a tortotiseshell cat

Fastest clever Fighter as a black cat.

After they came to the earth..... They got their old personalities in their cat lives too. But irrespective to their behavior human in earth love them unconditionally. So they surrendered to the greatest weapon called "LOVE".

Reference:
* for data about cat personalities according to their color https://news.berkeley.edu/2012/10/23/cat-color/

by Ms. P.R. Danthanarayana (Student), Faculty of Veterinary Medicine & Animal Science, University of Peradeniya.
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-REHABILITATIONS PRODUCTS.

-ALL TYPES OF INJECTIONS.

-ISLAND WIDE DELIVERY SERVICES AND CREDIT FACILITIES