

April - June 2015



## Identify the tigress



## C. E. PROGRAMME

**PPAM-FASAVA CE** was held on 14-March-2014 in Mumbai. Dr. Mike Shipstone (Australia), BVSc, FANVC was the key. He spoke on Cytology and in house laboratory techniques, approach to itchy dog, investigating feline allergic dermatitis, alopecia, canine demodicosis, selected auto immune disease and otitis.

**PPAM CE** was held on Sunday 15-March-2015 in Mumbai. Dr. Walasinee Moonarmart, DVM, PhD, President Thailand Veterinary Association, Deputy Dean for Education Affairs, Mahidol University, Thailand was the key speaker. She spoke on topics like clinical problem solving: a logical thinking, clinical approach to vomiting, cough, dyspnoea, management of pneumonia, canine chronic bronchitis, update on canine monocytic ehrlichiosis, canine parvo virus, chronic diarrhoea and inflammatory bowel disease.

Both the C. E. Programmes were well attended and highly appreciated by the participants.

### ANSWERS TO VETERINARY CROSSWORD

1	A	L	L	O	P	2	U	R	I	3	O	4	L
G						R				O		A	
5	L	I	N	T		S				D		X	
E						O				E		A	
P						D		6	S			T	
7	R	A	L	E		I			U			I	
I						8	O	T	C			V	
9	S	P	I	N	A	L				C		E	
T										I		S	
10	O	O	C	Y	T	E				M			
N										E			
11	E	P	I	N	E	P	H	R	I	N	E		

### ANSWERS TO QUIZ TIME:

- 1) Hyperthermia
- 2) Algology
- 3) Allergen-specific
- 4) Otodectes cynotis
- 5) Ctenocephalides felis felis
- 6) Immune-mediated

### ANSWERS TO TESTING TIME

1. Body odour is important in species recognition, social interaction and mate selection.
2. Lower urinary tract condition.
3. Any harmful and undesirable phenomenon occurring during treatment of human or animal patient is termed as adverse event (AE). When drug treatment is associated with AE it is termed as adverse drug reaction (ADR).
4. Pneumonyssoides caninum are commonly referred to as nasal mites because they are found in the nasal sinuses of dogs. Clinical signs observed are nasal secretions, chronic sneezing, facial pruritus and epistaxis.
- 5) The Blue Mormon is Maharashtra state official butterfly. It is the second largest butterfly. It has velvet wings with bright blue spots while the body has red spots.

### ANSWER: What is your interpretation?

Luxation of left coxo-femoral joint.

### Answer to identify the tigress:

Machali the tigress. She is the most famous Indian tigress and native of Ranthambore National Park. Machali is so named since she has a fish shaped marking on the left part of her face. Her legendary fight with 14 foot long crocodile is well known.

## BULLETIN OF THE PET PRACTITIONERS ASSOCIATION OF MUMBAI.

(For Circulation amongst PPAM Members)

## Editorial

### Earthquake, Animals and Veterinarians.

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The latest shattering earthquake in Nepal is a reminder of the fragile nature of our existence. It also warns us about the massive strength of Mother Nature. Among the natural calamities that can be predicted, earthquake is a challenging one. However there has been a relationship between earthquake and conduct of animals.

Since the start of recorded history, virtually every single culture in the world has described observations of unusual animal behaviour prior to earthquakes but conventional science has never been able to effectively explain the phenomenon. The Chinese have employed such findings for hundreds of years and at present is an important part of a nationally-orchestrated earthquake warning systems.

We veterinarians are aware that indirect evidence has been observed that some animals have the ability to detect sensory stimuli which humans cannot. That many animals have sensory abilities not currently clarified by traditional science. Companion Animal Veterinarians and pet owners have several times observed how some pets appear to anticipate the coming of their owner. Regardless of the time of day, some animals appear to sense when their human companion is returning, without receiving any known physical signals. The animals usually express this by waiting in the same spot each time such as by the door or window shortly before their owner arrives home.

In 1975, in Haicheng, China, many people spotted snakes emerging from their burrows a month before the city was hit by a large earthquake. This was particularly odd, because it occurred during the winter. The snakes were in the middle of their annual hibernation, and with temperatures well below freezing, venturing outside was suicide for the cold-blooded reptiles.

The phenomenon of Earthquake as known today has two types of waves. The Seismic P wave which is followed by a devastating S wave. The P wave travels faster than S wave roughly by 2-4 km/second. Certain animals if they are able to pick up or sense these P waves they can react by undertaking a lifesaving

response. Certain aquatic animals like shark or the ray fish have specialised organs that can detect electrical signals which are used for communication and prey location. These organs may also be helping them in detecting changes taking place in the earths crust.

Physical or chemical stimuli coming out of the earth prior to an earthquake could be sensed by animals. Dogs may be able to hear the micro fracturing of rocks a few milliseconds before a quake shock reaches the surface. Electromagnetic changes in the earth prior to an earthquake may be sensed by such animals as sharks and catfish which have low or high frequency receptors and sense such changes actively or passively. Also such electromagnetic field changes could be affecting migrating birds and the navigational ability of fish.

A research team working over a data from a major earthquake in Peru concluded that wild animals especially rodents know when the ground is about to buckle.

Days before the seven magnitude Contamana earthquake struck Andean village in 2011 motion triggered cameras revealed that most wildlife in the Yanachaga-Chemillen national park had already fled the area returning only after the quake had run its course. Prior to earthquake the rocks begin to shift underground, generating electrical charges that reached surface water and released positive ions into the lower atmosphere. It is this ionised particles that probably send signals to aquatic life and wild life.

The big question is can animal behaviour be incorporated into earthquake forecasting. The best person observing animal behaviour would be the veterinarian. However recording the unusual behaviour and conduct of animals could be one of a number of linked happenings that might forecast an earthquake



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## ECHOCARDIOGRAPHY – A GOLD STANDARD TEST IN DIAGNOSIS OF HEART DISEASES.



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Parel and "Distinguished Visiting Faculty"  
in "Veterinary Cardiology"- MAFSU, Nagpur

Heart diseases are commonly encountered in pet practice and veterinarian is faced with the challenge of its diagnosis and appropriate therapeutic management. The pet is considered as a family member and no stone is left unturned to seek the best possible medical help during its illness. It is therefore imperative on our part as a veterinarian to meet this challenge of the time.

Heart is a hollow muscular-membranous organ that pumps the blood to the entire body with the help of network of blood vessels - without any interruption or rest. This pumping action of the heart is very regular, rhythmic and synchronized. Therefore, for the optimal efficiency of the heart, it's all four chambers, AV and semilunar valves must be anatomically (structurally) and functionally normal to yield a single synchronized, co-ordinated forceful contraction during each beat. Any anatomical or functional alteration or rhythm or conduction disturbance will seriously affect the co-ordinated smooth working of the heart leading to hemodynamic catastrophe.

The heart, like a pump, has only two ways to fail: It either cannot pump enough blood in to aorta and pulmonary artery to maintain SBP (low output heart failure) or it cannot adequately empty the venous reservoirs (CHF). Heart Failure (HF) can be recognized on the basis of signs of low cardiac output (depression, lethargy and hypotension) or congestion (ascites, pleural effusion, pulmonary oedema). HF can be classified on the side that is failing. Right sided failure associated with signs of congestion of systemic circulation (peripheral oedema and ascites) and left sided with signs of pulmonary circuit congestion (pulmonary oedema, dyspnoea). While in bilateral heart failure - combination of signs of right and left failure are present. (Ettinger and Feldman, 2005).

Cardiomyopathy is defined as a primary disease of the heart muscle of unknown etiology. The most common form of canine cardiomyopathy is Dilated Cardiomyopathy (DCM), which is characterized by progressive ventricular dilatation and loss of myocardial contractility. Other form of cardiomyopathy, such as hypertrophic cardiomyopathy (HCM) is rare in dogs. DCM is most common in adult large breed dogs and in particular the Doberman pinscher, Irish wolfhound, Scottish deerhound, and Great Dane. (Oyama, 2008). While Sleeper et al. (2006) reported DCM in puppyhood (Juvenile) (2-4 months) in Portuguese water dogs. The prevalence of Cardiovascular diseases in the dog as recorded by Detweiler and Patterson (1965) and Fioretti and Carri (1988) is at 11% in 5000 and 7148 dogs respectively, whereas the overall prevalence of DCM in dogs is between 0.5 – 1.1 % – as per Tilley and Smith Jr. (2000).

DCM is a progressive disease that can be managed with medication but cannot be cured. Patients with DCM often experience progressive weakness and lethargy, progressive weight loss, and are at risk of congestive heart failure. In addition, they could die suddenly secondary to cardiac arrhythmias. Therefore, diagnosis of DCM in early stage (overt stage) is more important as treatment can be initiated promptly. Early in the disease process, no clinical sign are detectable, or pet may show reduced exercise tolerance. In some cases, a heart murmur (usually soft), other abnormal heart sounds, and/or irregular heart rhythm is detected by physical examination. Such findings are more pronounced as the disease progresses.

More advanced signs of heart failure (occult stage) include laboured breathing, reluctance to lie down, inability to rest comfortably, worsened cough, reduced activity, loss of appetite, cachexia, ascites, cyanosis and collapse. Signs of severe heart failure develop quickly with DCM, but the development of underlying heart muscle

abnormalities and progression to overt heart failure probably takes months to years. (Israel, 2003)

### Diagnosis of Heart diseases:

a) A careful history and thorough physical examination is mandatory. Cardiac auscultation is still a costeffective and reliable examination capable of identifying many serious heart diseases. The rhythm disturbances - irregularities, arrhythmias, and murmurs can be appreciated during auscultation. Clinical signs observed in cardiac patients like lethargy, weakness, respiratory distress, coughing, ascites can be seen in other disease conditions also. Rule out those non-cardiac causes during physical examination by using other diagnostic modalities mentioned below.

b) Basic thoracic radiography is important particularly critical in patients with acute or chronic respiratory signs, to rule out differential diagnosis of cough, abnormal ventilation, and hypoxemia. X ray gives an idea about the gross size of the heart. It is measured by vertebral heart score (VHS) method (Buchanan and Bucheler, 1995). It requires a left lateral thoracic radiograph. Normal VHS for a dog is  $9.7 \pm 0.5$  vertebrae.

c) Electrocardiogram is recorded (as per Tilley, 1992) to identify the PQRST complex abnormalities, conduction and rhythm disturbances (arrhythmias) – if any.

d) Routine hemato-biochemical examinations like CBC, LFT and KFT, serum electrolytes, thyroid profile are necessary to rule out any other organic involvement. The heartworm tests, and circulating cardiac biomarkers (ANP, BNP, NT-pro BNP, Troponin I) are more sensitive and specific and often aid to the diagnosis or to patient management.

All these diagnostic modalities have their own scope and limitations and none of them is a panacea. These tests are guiding for diagnosis of heart diseases, as they are not 100% sensitive and specific for it. Therefore these patients are subjected to a cardiac ultrasound examination called as Echocardiography. It is a "Gold standard test" for diagnosis of cardiac diseases particularly - DCM in dog. According to Dukes-McEwan et al. (2003), who reported its sensitivity at 98% and specificity 100% in a study of 70 DCM affected dogs. Similarly Calvert and Brown (1986) reported

M-mode echocardiography as a gold standard test to diagnose the changes in the heart of DCM affected Doberman pinschers. Velhankar (2013) also recommended Echocardiography as a Gold standard test for DCM in dogs with 100% sensitivity and 100% specificity in a study of 23 dogs with DCM screened from 2881 dogs presented at TVCC Parel, BVC.

Echocardiography is widely used non-invasive modality for evaluation of cardiovascular (CV) diseases in dogs and cats, and complement auscultation, electrocardiography, and thoracic radiography, and represent the clinical gold standard for the diagnosis and staging of most congenital and acquired heart diseases. (Nyland and Mattoon, 2000). Thus, the results of any echocardiographic study contribute to a definitive cardiac diagnosis, delineate the severity of disease, inform the prognosis, and guide medical, interventional, or surgical treatments.

Echocardiography is an application of US imaging to the heart and those blood vessels contiguous with the heart. In current primary and referral practices, virtually all examinations are completed via transthoracic echocardiography (TTE).

### Who can perform Echocardiography?

Echocardiography should be performed and interpreted by examiners with appropriate technical training and with thorough understanding of landscape of cardiovascular disease, appreciate the issues pertinent to the specific patient, and recognize the limitations of the study. Furthermore, an individual capable of integrating information from all sources, including the history, physical examination, and laboratory studies, should ultimately direct patient management. Decisions about patient care should not be relegated to a sonographer unless that person has a full understanding of the clinical situation and sufficient expertise in veterinary cardiology. (Nyland and Mattoon, 2000).

### Echocardiographic Formats

The commonly used formats in day to day clinical practice are

- 1) two-dimensional echocardiography (2DE)
- 2) motion-mode echocardiography (M-mode Echo);
- 3) 2D colour Doppler imaging (CDI); and
- 4) Spectral Doppler echocardiography [Pulsed



wave Doppler (PWD) and Continuous wave Doppler (CWD) echocardiography].

5) Tissue Doppler imaging (TDI).

6) Advanced image processing techniques: Three-dimensional (3D) reconstruction and real-time 3D (so-called 4D) echocardiography. These are used to quantify tissue velocities, displacement, deformation (strain), as well as cardiac rotation, torsion, and twist. Other available advanced diagnostic modalities are beyond the scope of this article.

#### Diagnostic Information

A complete echocardiographic study- complementing modalities like 2D echo, M Mode, color and spectral Doppler - yields complete and detailed information about the heart including its morphology and pathology, size and motion, systolic and diastolic ventricular function, atrial function, blood flow (trans-valvular blood flow velocities, regurgitation), valvular function

(closing and opening pattern, restrictive lesions, vegetative growths), pericardial effusions, intra-cavitary masses and hemodynamics. This properly gathered and interpreted information generates a definitive cardiac diagnosis in most cases and illustrates the functional and hemodynamic consequences of cardiac lesions noninvasively.

#### Limitations of Echocardiography

A) Many echocardiographic measurements can change by 10% or more due to biologic variability, differences in operator technique, and inter-observer / intra observer factors during imaging.

B) Echocardiographic measurements and Doppler findings are also influenced by heart rate, ventricular filling pressures, and by the forces opposing the ejection of blood (collectively termed "afterload").

C) Echocardiographic studies can be misinterpreted when normal physiologic findings are mistaken for evidence of disease.

#### When to refer patient for Echocardiography examination:

- Any patient (irrespective of age) with the complaint of lethargy, weakness, coughing, exercise intolerance and or cyanosis (after ruling out non-cardiac causes)
- Patients with radiographic and electro-cardiographic evidence of cardiac enlargement.
- Patients with complaint of syncope and arrhythmias (brady/tachy).

iv) Epilepsy.

**Conclusions:** Echocardiography is a non-invasive diagnostic tool for real time assessment of structural and functional status of the patient's heart and helps Veterinary Physician to propose therapeutic plan for it, periodic evaluation thereof and to offer prognostic remarks.

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# Learning from experience of other Veterinarians.

(Make Experience your teacher)

A) Sero epidemiological study of viral gastro-enteritis in dogs by using indirect ELISA has been studied at Department of Veterinary medicine, public health and hygiene, college of veterinary science, Assam Agriculture University, Khanapara, Guwahati, Assam. A total of 178 diarrhoeic dogs, 41.57% and 20.22% were sero positive to canine parvovirus (CPV) and canine coronavirus (CCV) respectively by indirect ELISA. CPV was more common in 4-6 months of age and found more in pre monsoon season while CCV was more common in 0-3 months of age and in winter season. German Spitz was found to be most susceptible to CPV and CCV. The test was very sensitive in detecting CPV and CCV antibodies.

Devajani Deka *et al* reported in The Indian Veterinary Journal March 2015 issue.

B) Comparative evaluation of Qualitative Troponin-I and Troponin-T with that of echocardiography in canine cardiomyopathy was carried out at laboratory of comparative system of medicine, division of medicine, Indian Veterinary Research Institute, Izatnagar, Bareilly, UP. They studied the diagnostic capabilities of qualitative cardiac troponins (cTnI and Ctn T) in comparison with echocardiography. They reported that the sensitivity of Ctn T and cTnI was 18.8% and 25% with specificity 100% for both the tests in comparison with echocardiography. They concluded that echocardiography is the most suitable non-invasive tool for definitive diagnosis of cardiomyopathy and qualitative tests may not be suitable for screening of canine myocardial damage.

Akhilesh Kumar *et al* reported in The Indian Veterinary Journal March 2015 issue.

C) Surgical management of Fibromatous Epulis in a dog has been reported from Department of Veterinary surgery and radiology, college of veterinary science and animal husbandry, Odisha University of Agriculture and Technology, Bhubaneswar, Odisha. A mixed breed male dog had a cauliflower like growth near the upper left canine tooth covering the first and second premolar teeth. The mass was excised under anaesthesia by premedication with atropine sulphate 0.04mg/kg body weight and xylazine hydrochloride 1mg/kg body weight intra muscular and anaesthesia with ketamine hydrochloride 10mg/kg body weight intra muscular. Microscopically the growth was diagnosed to be fibromatous epulis. Bleeding

during surgery was controlled by finger pressure and sprinkling of adrenaline. The dog recovered in ten days.

Jayakrushna Das *et al* reported in The Indian Veterinary Journal March 2015 issue.

D) Surgical treatment of antrochoanal sinonasal polyps in five year old mongrel bitch has been reported from emergency and critical care unit of veterinary clinic, West Bengal University of Animal and Fishery Sciences, Kolkata, West Bengal. The dog had a chronic swelling on nasal and maxillary bones on the right side of the face. Symptoms observed were lacrimation, epistaxis, sneezing, coughing and facial asymmetry. Tentative diagnosis was carried out by radiology and tissue biopsy. Rhinotomy was carried out under General anaesthesia induced with xylazine 0.5mg/kg BW and maintained by ketamine 5mg/kg BW and diazepam 0.5mg/kg BW combination intravenously. Erythromycin was prescribed post operatively. Dog recovered without any complication.

Mousam Das and Sabyasachi Konar reported in The Indian Veterinary Journal March 2015 issue.

E) A study of Effect of extenders on motility and liveability of Labrador retriever spermatozoa during preservation has been carried out at College of Veterinary Science, Khanapara, Guwahati, Assam. Out of the sixteen samples they studied they concluded that dog semen can be better preserved in Tris-egg yolk citric acid glucose (TEYCAG) and Tris-egg yolk citric acid fructose (TEYCAF) extenders during 120 hours of preservation at 5°C which was suitable for artificial insemination.

Das *et al* reported in The Indian Veterinary Journal April 2015 issue.

F) A study on macroscopic comparison of strip and pinch skin autografts in management of canine limb wounds was carried out COVS, Assam Agricultural University, Guwahati, Assam. Out of the twelve cases they studied they found that in pinch graft cosmetic appearance was better as compared to strip graft.

M. Choudhury *et al* reported in The Indian Veterinary Journal April 2015 issue.

G) A case of therapeutic management of feline dystocia due to primary complete uterine inertia has been reported from IVRI, Izatnagar. This case has been reported in a primiparous queen cat aged 15 months



with a history of gestation period of 72 days and signs of complete uterine inertia. Per vaginal examination had revealed presence of foetal head in the birth canal. Therapeutic management consisted of normal saline 100ml i/v, dexamethasone 0.5mg i/m, enrofloxacin 10mg i/m, calcium Sandoz 1.5ml slow i/v and oxytocin 2.5 IU i/m. After twenty minutes uterine contraction were noticed and foetus removed manually. Similar treatment was repeated later and three dead and putrefied foetus were removed manually.

Sunil Kumar *et al* reported in The Indian Veterinary Journal April 2015 issue.

H) Mycoplasmosis has been reported in a Moluccan Cockatoo from Madras Veterinary College, Chennai. A carcass of Moluccan Cockatoo presented for post mortem revealed the presence of *Mycoplasma sp.*

S. Ramesh *et al* reported in The Indian Veterinary Journal April 2015 issue.

I) Isolation of pathogenic Aeroallergic fungi from Blue Rock pigeon droppings has been reported from Veterinary College, G. B. Pant University of Agriculture and Technology, Pantnagar, Uttarakhand. All the eighteen samples processed were found to be positive for one or more species of fungi and a total of 44 fungal isolates were recovered. Principally *Rhizopus* spp (29.55%), yeast like fungi (25%), *Aspergillus* spp (20.45%), *Absidia* spp (13.64%), *Alternaria* spp (9.9%) and *Penicillium* spp (2.27%) was observed. They concluded that pigeons harbour a significant number of fungal species which are a potential health hazard to humans.

Sumit Joshi *et al* reported in The Indian Veterinary Journal May 2015 issue.

J) A case of Pilomatrixoma of the loin in a Pomeranian has been reported from veterinary college, Shimoga, Karnataka. This tumour was recorded in an eight year old female Pomeranian. The dog was operated, premedicated with atropine 0.4mg/kg s/q, and xylazine 1mg/kg i/m. Anaesthesia was induced with diazepam 0.5mg/kg followed by ketamine 5mg/kg i/v. Pilomatrixoma is uncommon in dogs and is a benign skin tumour and is derived from follicular matrix.

Ravi Raidurg *et al* reported in The Indian Veterinary Journal May 2015 issue.

K) Intussusception in dogs its diagnosis and surgical management in fourteen clinical cases has been studied at COVS, GADVASU, Ludhiana. Symptoms they observed were of anorexia, depression, dehydration, diarrhoea, lack of defecation, vomiting and abdominal pain. More number of cases were (78.57%) in pups below five months of age. Faecal samples in 50% cases were positive for worms while 64.28% had history of gastro enteritis. Clinically palpation of cord like structure in the abdomen was

observed, radiograph showed soft tissue mass along with gas filled dilated intestinal loops. They opined that sonography was more reliable tool in diagnosis of intussusception. Sonography showed target like lesions comprised of multiple hyperechoic and hypoechoic concentric rings with hyperechoic mesenteric fat in the centre (bull's eye pattern), on transverse scan multiple hyperechoic and hypoechoic parallel lines in longitudinal scan were suggestive of intussusception. They opined that early presentation, timely diagnosis and surgical intervention improved the outcome. Delay in surgery increased the chances of adhesions formation. They further opined that good surgical technique, adequate post-operative care and fluid therapy are useful in dealing with dogs with intussusception.

Tarunbir Singh *et al* reported in The Indian Veterinary Journal May 2015 issue.

L) Microscopic characteristic of canine filariasis in Thrissur district of Kerala has been studied at College of Veterinary and Animal Sciences, Mannuthy, Kerala. A total of 1600 samples were screened out of which 130 were positive for microfilariasis. Histochemical staining revealed that unsheathed microfilariae were *Dirofilaria repens* and sheathed microfilariae were *Brugia malayi*. They opined that identification of filarial species is clinically important because of zoonotic concerns and therapeutic implications.

Deepa Chirayath *et al* reported in The Indian Veterinary Journal May 2015 issue.

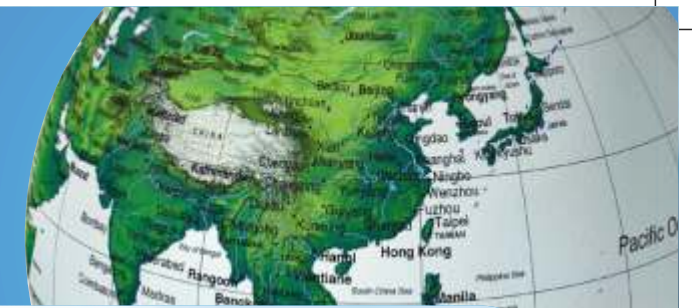
M) Marek's disease has been reported in an Amazon Parrot from Madras Veterinary College, Chennai. The disease was confirmed with PCR carried out using Meq gene primers with liver.

S. Ramesh *et al* reported in The Indian Veterinary Journal May 2015 issue.

N) A case of benign prostatic hyperplasia in a Labrador has been reported from Veterinary College and research institute, Orathanadu, Thanjavur, Tamilnadu. The dog had a history of inappetence, dullness, blood tinged urethral discharge, tenesmus and dribbling of urine. On rectal examination prostate gland was symmetrically enlarged and not painful. Ultrasound scanning of the prostate gland revealed an intraparenchymal cyst of about 0.5mm in diameter. Prostatic fluid was collected by passing the urethral catheter under the guidance of ultrasound scanning with a syringe attached to the end of the catheter and aspirated while simultaneously massaging the prostate through the rectum. Cytological examination revealed cluster of epithelial cells with acinar pattern, nuclear chromatin arrangement, cytoplasmic vacuolation, basophilic cytoplasm with indistinct borders.

N. Babu Prasath *et al* reported in The Indian Veterinary Journal May 2015 issue.

## News from around the world



Kazakh villagers are turning to wolf cubs to guard their land. Hunters say if treated well the wild animal can be tamed. But Almas Zhaparov a wolf expert says such move can have deadly consequences.



World's most polluted bird has been discovered in Canada. The bird a Cooper's hawk whose liver was full of flame retardant chemical. The bird has been dubbed flameproof.

Secret of Chameleons colour change is out. Light reflecting cells in the skin provide chameleons their uncanny colour changing abilities that help them attract mates and ward off predators, scientist have found. Other animals that change colour are the squid and octopus which modify their hues by accumulating or dispersing pigments within their skin cells. The Chameleons rely on



structural changes that affect how light reflects off their skin. Scientist have found out that they have two superposed thick layers of

iridophore cells- iridescent cells that have pigment and reflect light. The iridophore cells contain Nano crystals of different sizes, shapes and organization which help colour change. The Chameleons change the structural arrangement of the cells by relaxing or exciting the skin which leads to change in colour. The study is published in the Journal of Nature Communication.

Scientist have for the first time unravelled the firefly's intricate light producing system. They emit light when a compound called luciferin breaks down. This reaction needs oxygen. Using state of art imaging technology Giorgio Maargaritondo at Swiss Federal Institute of Technology Lausanne and YeukuangHwu at the Academia Sinica and their colleagues at the National Tsing Hua University in Taiwan have been able to study this nature's wonder. The firefly's light producing organ is called the lantern and is located in the insects abdomen. There are small tubes which supply oxygen to these cells in the lantern which contains luciferase and thus luciferin breaks down to produce light.



A study carried out by Madras Veterinary College found that a variety of parasites infect the common house crow which can be transmitted to humans through crow droppings. Researchers collected hundred samples from across the city and examined them for endoparasites. They found that 90% of crow droppings contained four different genera of parasites that infested the birds and could infect humans who came in contact with crow droppings.



Two of the four types of parasites the sarcocystis protozoa and hymenolepis de-minuta (rat tape worm) can be passed to humans. The head of Madras Veterinary College department of wild life science M.G.Jayathangaraj said the parasites infect the crows when they feed on refuse around human habitations, insects and eggs of other bird species. Wild life sciences Assistant Professor A.Prathipa said the parasites can infect pets also.

Mouth to beak resuscitation. Daily mirror has reported that a duck was trapped under the ice owes its life to a brave frozen lake swimmer who gave it mouth to beak resuscitation. The bird was trapped in lake Sognsvann near the Norwegian capital Oslo when it was spotted by a local man Lars Jorun Langoien who had come for a swim. The duck had almost become lifeless he lifted the duck and brought it to the shore. He immediately gave a mouth to mouth resuscitation and that did the trick and that it came around. Experts identified the duck as a Bucephala duck, otherwise known as Golden-eye duck that feeds at the bottom of the lake.





# News from around the world

A three-legged Asian elephant, injured after she walked on a landmine, has been given a prosthetic limb. Mosha a nine-year-old female, was transported to the Friends of the Asian Elephant Hospital in Thailand when she was just seven-months old after treading on a deadly landmine in 2007. Mosha



became the first elephant in the world to get a prosthetic limb after veterinarians feared she would not improve when she shunned food and the company of other elephants when she first arrived. Dr Therdchai Jivacate, who runs a clinic for human amputees made this unique prosthetic leg for her.

The secret to puppy love is in the eyes. Eye contact helps to boost love hormone oxytocin in both dogs and humans. The study was carried out by Japanese researchers led by Takefumi Kikusui of the department of animal science and biotechnology at Azabu University in Japan and published in the Science journal in the US suggests that human and dogs evolved over the centuries via the mutual eye contact. This produced higher levels of oxytocin which fosters trust and emotional connection that eye contact build. They measured oxytocin levels in the dogs and owners urine, they found that increased eye contact between dogs and owners had driven up levels of oxytocin in their brains.

Trained dogs can sniff out prostate cancer from human urine samples with 90% accuracy. In the study published in the Journal of Urology, two female German shepherd dogs sniffed urine samples from 900 men. The research work has been carried out in the Humanitas Clinical and Research Centre in Milan. At present prostate cancer in humans is diagnosed by PSA test, clinical examination and for confirmation a biopsy is performed.



The world's first cloned camel Injaz is pregnant. According to scientist in Dubai Injaz which means achievement in Arabic language was cloned from the ovarian cells of a slaughtered camel in 2009 and born via a surrogate mother. Dr Nisar Wani, Scientific Director of Reproductive Biotechnology Centre in Nad Al Sheba, Dubai said that since Injaz was born dozens of cloned camels have been born in UAE.

A six month old abandoned female elephant calf is showing rare display of survival instinct in the zoo. This calf was abandoned by a herd of elephants in the Kanyakumari forest is battling a festering wound at the umbilicus, is asthmatic, has hernia and GI tract problems. The calf is at present on six kg of lactogen and tender coconut water. The herd abandoning the calf is natural selection at work in the wild according to Professor Raman Sukumar of The Indian Institute of Sciences, Centre of ecological science, Bengaluru.

Parrots get addicted to opium in the poppy fields of Chitorgarh district. This has been observed by farmers who cultivate opium under the license from narcotic department. Parrots break open the pods and consume the seeds. Soon the parrots get addicted. Once the crop is cut and the seeds are not available then the parrots loose appetite, start behaving strangely and eventually die.

A team of veterinarians have successfully performed lifesaving surgery on a pet gold fish to remove multiple tumors from behind the eye. This five year old pet gold fish named Monty was placed in water soluble anesthesia during the procedure. The surgery was performed by Sonia Miles exotics veterinary surgeon and Bristol zoo veterinarian Michelle Barrows.

A cat has set a new Guinness world record for the loudest purr by a domestic cat. The cat named Merlin from UK with the sound of its purr measuring 67.8 decibels beating the previous record of 67.68 decibels set in 2011 by Smokey another British cat.

The Maharashtra State Government has decided to declare a 17km area along the Thane creek as flamingo sanctuary. The site would be declared Ramsar site which are wet lands of international importance designated under the Ramsar Convention.

A study conducted at Sanjay Gandhi National Park, Borivali, Mumbai, by Wildlife Institute of India in collaboration with national park during December 2014 to April 2015 using cameras has revealed that there are 35 leopards in 140sqkm area. Niket Surve under the supervision of Vidya Athreya a wild life biologist carried out this study took into account 140sqkm of SGNP, Aarey milk colony and the Nagla block for 44 days. The area was divided into 2x2 sqkm grids and there was a camera in each of them between 5pm to 7am. The Park was divided into three blocks each having 9, 10 and 12 cameras. Others animal spotted include jungle cat, black naped hare, mouse deer, rusty spotted cat and palm civet.

Stressed students are lining up for cuddle in puppy rooms. The special room is a part of the Stressed out student's campaign by the students union of the University of Lancashire. Students stressed out by impending exams will get a break from revision by having a cuddle with a puppy in a dedicated room.

## TESTING TIME

1. Pets have body odour. What is the biological purpose?
2. If the dog urine is concentrated, has specific gravity more than 1.025 and it has no glucose, what is the condition most likely to be.
3. What is adverse drug reaction?
4. Name the mite that resides in the nasal sinuses of dogs?
5. What is the name of the official butterfly of Government of Maharashtra?

## QUIZ TIME

1. \_\_\_\_\_ is the term used to describe any elevation in core body temperature above accepted body values for that species.
2. The Science and study of pain phenomena is called \_\_\_\_\_.
3. Atopic dermatitis responds best to \_\_\_\_\_ immunotherapy.
4. \_\_\_\_\_ is a well-known parasite of the ear canal of dog and cat.
5. The most common flea (92% to 99%) found on dogs and cats is \_\_\_\_\_ also called common cat flea.
6. \_\_\_\_\_ polyarthritis is the most common polyarthritis in companion dogs and cats.

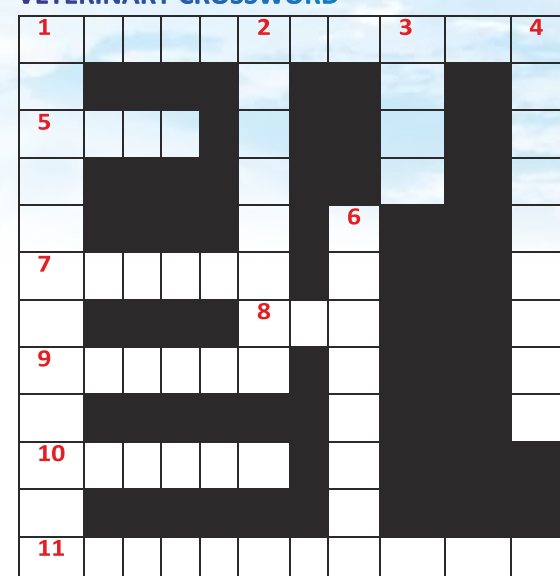


**ACROSS :**

1. A drug used for prophylactic treatment of recurrent uric acid uroliths in dogs and for treatment of gout in birds.
5. An absorbent surgical dressing material.
7. An abnormal respiratory sound heard on auscultation indicating some pathological condition.
8. Drugs not required by the law to be sold on prescription only.
9. Pertaining to spine or vertebral column.
10. An immature ovum
11. A drug primarily used in treatment for anaphylaxis or cardiac resuscitation.

**DOWN :**

1. Injectable progesterone blocker indicated for pregnancy termination in bitches.
2. Drug used in pets for management of cholesterol containing gallstones and pets with chronic liver disease.
3. A small mass of tissue in the form of swelling, knot or protuberance either normal or pathological.
4. They are used for their cathartic action to relieve constipation.
6. Drug used for treatment of lead poisoning in small animals.

**VETERINARY CROSSWORD**

## What is your Interpretation?



## Dr. Silloo Bhagwagar

**Dr. Silloo Bhagwagar**

As I stepped through the old gates of the Bombay Veterinary College for the very first time, I felt like, 'THIS, is where I belong.' However, this grand emotion was not so much for a career as a Veterinarian, as for the lovely old stone building with its huge brass bell and lovely driveway coming from the hospital gates. I could imagine past Principals...those Worthies, whose photos lined the Principal's office walls...come in their horse-drawn carriages to alight at the entrance of the Main building.

Getting admission, unlike today's competitive rush, was a cakewalk since not many desired to become vets and it puzzled many of my friends as to why I, with a B.Sc. in Microbiology from St. Xavier's College, should opt for Veterinary Science. People would say this profession was not for girls, that it would be hard especially so being the only girl in class. But in spite of all the negative vibes, I was happy as a lark. Reality struck me only when my shy classmates, amazed at finding a girl amongst them would studiously avoid me. Many times I had to chase them to find out where the next class was. My life would have been lonely had it not been for the 'only' other girl in Second Year, Amrita Patel (now Retired. Director. NDDB, Anand), and we became good friends.

In my class we were just a handful... an assorted lot. Me, the slick city dweller, a "dandy" guy from Nairobi and others from small towns. But, by the end of four years, we were like family.

The First Year was like 'breaking the ice' year. We were all shoved into a train and taken for Extra Mural Training. Jammed into one compartment, there was no choice other than to get to be friends. Although I was treated with special consideration, I did all what the boys did: ploughed the fields, rode the horse, splashed in the river in Nasik.

Back in college my favourite class was AH taken in the casting shed amphitheater. We would cast the cattle and also try our hands at lassoing like cowboys...me, cowgirl. Yes, those were the days...the mid sixties...they were conservative. This prudishness presented me a problem. I could not possibly go wearing my lovely long full skirts for Surgery practicals and Horse Riding classes! However, I had a pioneer in my friend Amrita who boldly went before me. She wore jeans and so did I. But then one day I did manage to cause a minor scandal by wearing short shorts, ever so briefly, at

an intercollege cycling event.

And as we all went to 2nd, 3<sup>rd</sup> and 4th year, we had brilliant teachers like Dr. Joshi of Physio, Dr. Mehendale of Anatomy, Dr. Rao of Parasitology and his junior lecturer who would draw brilliant coloured helminth life cycles on the board, only to mbe rubbed off at end of class. Then there was Dr. Sardeshpande who taught us marvellous Pathology and, of course, the unforgettable Head of Surgery, Dr. Hattangady, and junior lecturer, Dr. Wadia. Dr. Wadia was easy going and friendly. We would take advantage of his good nature and sometimes skip his classes. He would then surely find us at the rickety tea shop outside the college gate and herd us back into class.

I have heard it was fun at Holi time, when the first year students would be caught and given a good dunking in coloured water in the huge old wooden tub in the garden. Alas, that old wooden tub is no more...like a few sad memories. One of them is Sweetie. Sweetie was a little puppy who had strayed into the college, hungry and bedraggled looking for food and friendship. Daily she would meet and follow me wherever I went, except into the labs. She would sit quietly under the class bench near my feet, and no one objected. One Monday, Sweetie did not come to greet me. A student had kicked her down the old hostel staircase and she had died.

Then there were inter-class sports. I would love watching hand-ball matches, and my class boys were good. But hockey was another ball game.... I once asked to play on the team, little realizing how totally out of sync I was. It was all clumsy, but fun... and we lost.

Maybe I was naive then, but ragging was something one never heard of. Also funnily, I never saw or heard of groupism or class distinctions being made. We were just an Average Class. No brilliant personalities sprinkled amongst us. Yet to me, we were a Great Class... the Class of 1966.