

News Items

A Compendium of Pest Management News Items from the Media Relevant to FAOPMA Member Countries

Compiled by Stephen L. Doggett and David Lilly

MALAYSIA: MOSQUITO REPELLING DIAPERS?

In Malaysia a company called MamyPoko has developed a diaper (called a nappy in Australia) that is reported to repel mosquitoes. It is claimed the diaper is impregnated with lemongrass, which is encapsulated and slowly released. This product is marketed towards people living in dengue prone areas. [SLD: the problem with these types of products is that they can give the parent a false sense of security as areas of the baby not covered can still be bitten. It would make more sense to keep the child under a bed net to prevent all bites and not to expose young sensitive skin to chemicals.]

Source: TRP (29/Sep/2020), www.therakyatpost.com/2020/09/29/protect-your-baby-from-mosquito-bites-and-dengue-with-mampokos-newest-diaper/

UK: RAT WINS HERO AWARD

African pouched rats have been trained to sniff out landmines and they have been used for more than 20 years doing this dangerous task. One of these rats by the name of Magawa, recently became the first ever rat to win Britain's animal bravery award. Magawa has successfully detected 39 landmines and 28 unexploded ordinances, and with such a deadly occupation was awarded the PDSA Gold Medal. You have to admit, he looks

quite dashing with this medal!

Source: Yahoo News (25/Sep/2020), https://news.yahoo.com/giant-rat-wins-animal-hero-121422136.html?guccounter=1&guce_referrer=aHR0cHM6Ly93ZWJtYWlsLmhlYWx0aC5uc3cuZ292LmF1L293YS8&guce_referrer_sig=AQAAACgF0CNCzBy0arqfrnQp02ekI4_PZF46kFMvBe99r-ZQR_hAqJThEqYZlly8itSIUhb7C5EMv6SYBdnT764Y_7VjBst_ILkLTcX9JzdnLk4_BFK-DpadMldDT-VRqAE60lnRm54vpDPnEvubKtmsphiGrmHwuNvYs_S192s6icBeY

FIRE ANTS FORM RAFTS TO SURVIVE FLOODS

When the water level becomes high, fire ants link together to form water repellent rafts that float across the water surface. You can see this happening in a video in the link below. In fact in the recent floods in the south of the US, people are being warned of fire ant rafts in floodwater.

Source: Playstuff (24/Sep/2020), <https://play.stuff.co.nz/details/6193940045001>

FORMOSAN TERMITE FOUND IN ISRAEL

The Formosan termite, name after Taiwan, is an extremely destructive termite species that has spread to a number of countries, with eradication proving to be impossible. The species was recently discovered in the central city of Petah Tikva. It is thought that the termite probably hitched a ride through shipping.

Source: The Times of Israel (23/Sep/2020), www.



Magawa the African pouched rat proudly displaying his bravery medal.

[timesofisrael.com/highly-destructive-super-ter-mite-arrives-in-israel/](https://www.timesofisrael.com/highly-destructive-super-ter-mite-arrives-in-israel/)

TOP 20 AGROCHEMICAL COMPANIES FOR 2019 LISTED

Agropages, a website that focuses on the agricultural industry, recently released the top 20 agrochemical companies for 2019, based on sales figures. The top 5 companies, and number 8 are multinationals. The top 10 are; Bayer Crop Science, Syngenta, BASF, Corteva, FMC, UPL, Adama, Sumitomo, Nufarm, and Jiangsu Yangnono. The remaining 10 are Chinese, Japanese and Indian companies that are moving up the list very quickly. [SLD: Thank you to Prof Chow-Yang Lee for sending me this list].

Source: *AgNews* (21/Sep/2020), <http://news.agropages.com/News/NewsDetail---36626-e.htm?fbclid=IwAR135G80Uldq8VP6NQNmQhmHBUYhAvVKhr8sGXCSgPHGLXogWrKcDN875rM>

AUSTRALIA: BAKERY FINED \$16,000 OVER A SERIES OF PEST VIOLATIONS

The so named 'Baked to Perfection' bakery in Brisbane, Australia has been fined some \$16,000 (USD\$11,200) over numerous pest violations. The director of the company was fined an addition \$2,000 (USD\$1,400). Dead and rotting rodents,

rodent faeces, live weevils and cockroaches were all found upon the premise according to the online report. Interestingly, the bakery has never received a food complaint.

Source: *DailyMail Australia* (19/Sep/2020), www.dailymail.co.uk/news/article-8747775/Brisbane-bakery-fined-16-000-dead-rodents-live-weevils-dead-cockroaches-found.html

CHINA: 'GREEN' BUILDING BECOMES MOSQUITO NIGHTMARE

In recent years, there has been an attempt around the world to make buildings more environmentally sensitive. This is often done through the use of dedicated plantings. This may include green walls, or green spaces such as roof top gardens. While the objectives of the planting are founded in the principles of sustainability, these sites can become a haven for a variety of urban pests, especially if poorly managed. In Chengdu, the capital of the Sichuan province, a development that is described as being eco-friendly has resulted in vertical forests as plant growth has not been maintained. The site has now become plagued with mosquitoes and preventing people from moving in. Such outcomes should serve as warning that even sound objectives can become tainted if ongoing pest management is

not considered.

Source: *The Times* (19/Sep/2020): www.thetimes.co.uk/edition/world/chinas-green-paradise-becomes-mosquito-plagued-urban-jungle-8xbv2b92l

CHINA: THE COCKROACH FARM

In the city of Jinan in eastern China there perhaps the world's largest cockroach factory. The site consists of 20 rooms with at least 20million roaches per room. Into this is pumped food waste from restaurants. Every day they consume around 50 tonnes of waste from kitchens. The cockroaches are made into a protein meal and feed to farm animals. This is proving to be a very effective means of recycling food wastes. In order to stop the roaches escaping, they are surrounded by a moat full of fish.

Source: *ABC News* (19/Sep/2020), www.abc.net.au/news/2020-09-19/inside-a-chinese-cockroach-farm/12672476

SINGAPORE: OPERATOR OF DORMS FINED \$118,000 OVER COCKROACHES

A company in Singapore that operate dormitories for foreign workers recently received heavy fines over maintaining the facility in an unsanitary manner. The company was fined \$118,000 (USD\$85,700), while two employees responsible for maintaining the site was fined a total of \$81,000 (USD58,800). These employees were the first to be prosecuted under the Foreign Employee Dormitories Act 2015.

Source: *Mothership* (19/Sep/2020), <https://mothership.sg/2020/09/labourtel-management-corporation-fined/>

SINGAPORE: CONTRACTOR CHARGED OVER MOSQUITO BREEDING

Singapore has been experienced the largest recorded outbreak of dengue in the island's history. Thus the National Environmental Agency is being extra vigilant to ensure that companies do not break the rules by providing habitat for mosquito breeding. Ten contractors have now been charged for mosquito breeding offences at a time when almost 30,000 cases of dengue infection have been reported for the year.

Source: *GCR* (18/Sep/2020), [www.](http://www.globalconstructionreview.com/news/singapore-charges-contractors-mosquito-breeding-am/)

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MORE NEWS OF THE NEGATIVE IMPACTS OF SGA ON WILDLIFE

The media is becoming full of articles on how the second generation anticoagulants (SGAs) are impacting wildlife. Yet another study has found that birds of prey have traces of SGAs in their systems from consuming poisoned rodents. A number of birds have even been found dead and autopsies have revealed high levels of SGAs in the liver. In the town of Sooke, Canda, the community has now banned the use of SGAs due to owl poisonings (see: www.saanichnews.com/news/sooke-jumps-on-board-to-ban-use-of-rat-poison/).

Source: *Nature World News* (18/Sep/2020), www.natureworldnews.com/articles/44440/20200918/rodent-poisoning-deadly-impacts-birds-prey.htm

JAPAN: MORE THAN 700 FIRE ANTS FOUND AT NAGOYA PORT

More than 700 fire ants were found in the port of Nagoya in central Japan. The ants were found crawling out of sidewalks and holes in the ground. No queen ants have been found and extermination processes have begun.

Source: *The Japan Times* (17/Sep/2020), www.japantimes.co.jp/news/2020/09/17/national/700-fire-ants-found-port-central-japan/

THAILAND: PERFECT PEST CONTROL? NO CHEMICALS, NO TECHNOLOGY, JUST DUCKS!

Every year thousands of ducks are let loose on rice paddies in Thailand so that the birds can devour all pests on the fields. Not only are costs to feed the ducks reduced, but the pest control is completely sustainable and requires no chemicals or any other technology. Recently, footage of the event was captured by drone and is detailed in the link below. I highly recommend that you watch this captivating event.

Source: *ABC News* (16/Sep/2020), <https://www.abc.net.au/news/2020-09-16/ducks-clean-pests-from-rice-paddies-in-thailand/12668428>

INVASIVE ASIAN MOSQUITO THREATENING AFRICA

Anopheles stephensi, which originally comes from Asia, has become established in parts of Africa and is gradually spreading. This problem is that this mosquito is a significant malaria vector and likes to live in urban areas, close to people. Now major malaria outbreaks are occurring due to this species, in location where malaria was rare. The mosquito will feed anytime during the night, which means bed nets are less effective.

Source: *Bangkok Post* (15/Sep/2020), www.bangkokpost.com/world/1985591/invasive-asian-mosquito-species-threatens-african-cities

LISTEN TO A LEGEND OF BED BUGS (AND A NON-LEGEND)

Recently Dr Harold Harlan from the US was interviewed on bed bugs by the Australian TV series, *'The House of Wellness'*. Harold is quite a legend for his bed bug colony. The 'Fort Dix' strain, or more affectionately termed the 'Harlan' strain, is widely used by bed bug researchers throughout the world. The Harlan strain, which is the common bed bug, *Cimex lectularius*, is a susceptible strain and used for gaining baseline data on bed bug biology, behaviour, insecticide efficacy, and other parameters. This strain should always be used with a modern field strain so that any management option will be more reflective of field operations. Harold talks about his history with bed bugs in the video below [SLD: I forgot to mention who the 'non-legend' is, you will have to watch this yourself!]

Source: *The House of Wellness* (13/Sep/2020), <https://www.youtube.com/watch?v=OzwHftxPaE&feature=youtu.be&t=376>

PAKISTAN: MOSQUITO PLAGUE HARASSES FLOOD VICTIMS

In Khipro, Pakistan and homes were recently destroyed by floodwaters that resulted from extreme rainfall. However what followed added to the woes of many left homeless; plagues of mosquitoes. People were unable to go outside their tents at night and mosquito numbers were so bad, nets had to be installed around farm animals to prevent severe blood loss. A lack of medical support and infrastructure to undertake mosquito control has made the situation worse.

Source: *The Express Tribune* (12/Sep/2020), <https://tribune.com.pk/story/2263651/after->

[floods-monster-mosquitoes-descend-on-lower-sindh](#)

USA: MASS BUTTERFLY DEATH FROM MOSQUITO SPRAYING

In Fargo, USA, the application of aerial adulticiding for mosquitoes led to a mass death of monarch butterflies. Every year monarch butterflies undergo a mass migration, with the numbers being so large they appear on weather satellites. This year there were heavy rains in mid-August that resulted in a mass mosquito emergence and aerial spraying was conducted later than normal, at the same time as the monarch migration. The community has naturally raised concerns and do not wish to see this mass slaughter of the iconic butterflies to again occur. [SLD: it seems incredibly poor for vector control officials to apply adulticides during the butterfly migration when larvicides result in fewer non-target impacts. This is a poor example of pest control and can show how community perceptions of the industry can be very damaging.]

Source: *InForum* (12/Sep/2020), <https://www.inforum.com/newsmd/6658207-ls-carpet-bomb-spraying-for-mosquitoes-more-for-comfort-than-health-Mass-butterfly-deaths-fueling-dialogue>

MALAYSIA: COCKROACH INFESTED RESTAURANT CLOSED

In Penang, Malaysia, a Biryani restaurant was ordered to close for 14 days. Health inspectors found rotting food, mouldy bamboo in which rice is cooked, and cockroaches in a rice cooker, plus there was animal faeces around the entrance to the premise. It was also revealed that the owner did not have a licence to cook on the premise.

Source: *World of Buzz* (11/Sep/2020), <https://worldofbuzz.com/cockroach-infested-bamboo-biryani-kitchen-in-penang-ordered-to-close-for-14-days/>

INDIA: MOSQUITO TERMINATOR TRAIN

In Dehli, a train dubbed the "Mosquito Terminator Train" has been constructed that can spray larvicides up to 60m on either side of the track. This is to reduce the risk of dengue and other mosquito-borne viruses. It is planned that insecticides will be sprayed over 10 days during

the monsoon season. The reason for using the train is that areas along the train track are of high risk to be sprayed by human operators as there are a number of pits and difficult to access locations. The train will travel for some 150km per each treatment round and travel at a speed of 20km/hour.

Source: *Hindustan Times* (10/Sep/2020), www.hindustantimes.com/delhi-news/mosquito-terminator-train-to-beat-vector-borne-diseases-in-delhi/story-Z8JBfHBhuGJjrvtzHACyJ.html

SINGAPORE: CRITICISM OVER HANDLING OF SNAKE REMOVAL BY PEST COMPANY

In Jurong West in Singapore, a pest control company was caught on camera attempting to remove a python from a drain. The operators are seen to step on the snake and to tug it aggressively. Animal rights groups have labelled this as "horrific" and that animal welfare was totally disregarded. Many now feel that pest control companies should not be called in to remove snakes, but it should be trained herpatologists. The video of the incident is available on YouTube at <https://youtu.be/hbB6pbiVQY> and most will agree that the snake was poorly handled.

Source: *Stomp* (9/Sep/2020), <https://stomp.straitstimes.com/singapore-seen/acres-calls-handling-of-python-at-jurong-west-by-pest-control-company-horrific>

GUAM: RODENT INFESTATION SHUTS DOWN RESTAURANT

In Harmon, Guam, Health inspectors shut down a restaurant after finding many violations including a major rodent infestation. Apparently a customers complained that their meal was contaminated with legs and black specs.

Source: *The Guam Daily Post* (9/Sep/2020), www.postguam.com/news/local/report-harmon-restaurant-shut-down-due-to-rodent-infestation/article_901e9196-f1a5-11ea-ba1b-1356dd7f2368.html

UK: PIZZA HUT RESTAURANT FINED OVER £13,000 OVER COCKROACHES

A popular Pizza Hut outlet in Cambridge, UK, was fined a whopping £13,000 (USD\$16,500) over a major German cockroach infestation. Both live

and dead roaches were found, with one sticky trap collecting around 60 cockroaches.

Source: *Cambridgeshire Live News* (9/Sep/2020), www.cambridge-news.co.uk/news/cambridge-news/pizzahut-delivery-millroad-cockroach-fined-18903427

NEW ZEALAND: MAJOR RODENT PLAGUE UNDER COVID-19

In rural areas of New Zealand, plagues of rodents are being seen. With restaurants and other areas closed due to COVID-19 restrictions, the rats have moved out of the city into more rural areas. This in turn is threatening the delicate wildlife of the country.

Source: *1 News* (8/Sep/2020), www.tvnz.co.nz/one-news/new-zealand/rats-rise-they-adapt-life-under-covid-19

VIDEO: WATCH ANTS COLONISE ANT FARM

Watch a sped up time lapse video of ants colonizing a new ant farm; thoroughly captivating!

Source: *YouTube* (7/Sep/2020), <https://youtu.be/jifkDxFA2pw>

SINGAPORE: WHY NOT BUY A PET ANT OR TWO?

What became a hobby for Singaporean John Ye has now become a profession. John had an interest in ants and so colonised some species. Since then the number of species he has colonised has grown to more than 30 and he now has a shop to sell ants as pets to ant hobbyists. He also runs an ant hotel where owners can get John to look after their colonies while away. You can see more of John and his passion on a YouTube video at: <https://youtu.be/AA3f4Rmf16w>.

Source: *South China Morning Post* (7/Sep/2020), www.scmp.com/video/asia/3100557/ants-pets-require-care-and-responsibility-says-owner-singapore-shop-ant-fanciers

NEW ZEALAND: TENANT WINS \$2,500 OVER COCKROACHES

In Auckland, New Zealand, a women was awarded NZD\$2,500 (around USD\$1,700) due to the 'extreme number' of cockroaches in her rented property. When she raised the problem with the

landlord, they ignored the problem and so the tenant took the owner to the rental tribunal and won the case.

Source: *Stuff* (2/Sep/2020), <https://www.stuff.co.nz/business/property/122628677/tenant-wins-2500-payout-for-extreme-numbers-of-cockroaches-and-flood-damage>

NEW ZEALAND: MICE NESTING IN SUPERMARKET DISTRIBUTION CENTRE

A mice infestation has occurred in a major distribution centre in Auckland of the Woolworths group – a major supermarket chain. Baby food sachets were found in many stores with puncture holes and it was initially thought that the food had been tampered with. Investigations led to the finding of the mice infestation. Other foods were subsequently found damaged and the site is now being thoroughly cleaned and a more frequent rodent trapping regimen implemented. [SLD: it is extraordinary how even a small rodent infestation can be so damaging to the reputation of a business and the pest manager].

Source: *Stuff* (1/Sep/2020), <https://www.stuff.co.nz/business/122623718/mice-nested-at-woolworths-nz-supermarket-food-distribution-centre>

NEPAL: OUTBREAK OF SCRUB TYPHUS

In the Darchula District of Nepal, five cases of scrub typhus has been reported. This includes four adult males and one female. Two of the patients were admitted to hospital for treatment. [SLD: scrub typhus is caused by rickettsia, a bacteria like microorganism, that is transmitted by chigger mites. The condition is treatable with antibiotics but has a high fatality rate if left untreated].

Source: *ProMED Digest* (1/Sep /2020), Vol. 98(1).

UK: BAYER LAUNCHES DIGITAL PEST MANAGEMENT SYSTEM FOR RODENTS

In the United Kingdom, Bayer has launched a new rodent monitoring system. This was developed in conjunction with Microsoft and offers real-time monitoring. Once a rodent is captured an alert is sent to the pest manager. [SLD: it is terrific to see a company that sold mainly insecticides now go into alternative technology].

Source: *Pest Control News* (1/Sep/2020), https://www.pestcontrolnews.com/bayer-launch-new-rodent-digital-pest-management-system/?utm_medium=email&utm_campaign=Bayer%20launch%20new%20rodent%20digital%20pest%20management%20system&utm_content=Bayer%20launch%20new%20rodent%20digital%20pest%20management%20system+CID_4446fa59125f5f846bc411fc9a74e9b1&utm_source=News%20Desk%20Email&utm_term=READ

USA: CALIFORNIA PASSES BILL TO HALT THE USE OF RODENTICIDES

Following the spate of reports of wildlife being poisoned by the anticoagulant rodenticides, the California legislature has passed a bill that has placed a moratorium on the sale of these rodent products. The moratorium means that the anticoagulant rodenticides cannot be sold until better safeguards can be developed to better protect wildlife from these products. In 2018, it was found that more than 85% of some native animals had traces of the anticoagulants in their system. The bill does contain some exceptions for the use of the anticoagulants for public health use, however it can be expected that there will be more restrictions on these products into the future.

Source: *Centre for Biological Diversity* (1/Sep/2020), <https://biologicaldiversity.org/w/news/press-releases/california-legislature-passes-bill-protect-wildlife-super-toxic-rat-poisons-2020-09-01/>

ASIA: CHIKUNGUNYA UPDATE

Chikungunya is a mosquito-borne disease that can cause fever, rash, muscle and joint pain. There is no vaccine nor any specific treatment, although death is uncommon.

Cambodia: to 8/Aug/2020, there have been 2,047 cases in 15 provinces and 80 per cent of the cases have been in Siem Reap, Banteay Meanchey, Preah Vihear, and Kampong.

India: in Dehli, 23 cases have been reported to 10/Aug/2020.

Indonesia: as of 12/Aug/2020, there have been 221 cases scattered throughout Sukabumi City.

Thailand: to 21/Aug/2020, there have been 6,888 cases across 68 provinces. The provinces with the highest incidence: Chanthaburi, Uthai, Thani,

Lamphun, and Rayong.

Source: *ProMED Digest* (30/Aug/2020), Vol. 98(82).

INDIA: COVID-19 PATIENTS DELIVERED FOOD INFESTED WITH COCKROACHES

In a truly awful situation that has occurred in a healthcare facility treating COVID-19 infected people in Panchkula, northern India, patients were given food contaminated with numerous nymphal cockroaches. Not only that bees and mosquitoes have been a major problem in the same facility. One has to wonder if patients may become sicker by being in the hospital.

Source: *Hindustan Times* (30/Aug/2020), <https://www.hindustantimes.com/chandigarh/patients-at-p-kula-covid-care-centre-find-cockroaches-in-food/story-3Cg3xipryCnodLeQJ8RSGK.html>

SOUTH GEORGIA: HEAR THE STORY OF HOW THE ISLAND BECAME RAT FREE

South Georgia is located in the far Southern Atlantic Ocean equidistant between Argentina and Antarctica. For many years during the 1800's the island became a favoured location for whalers and sealers. Unfortunately they also introduced the rat, which decimated the native bird population. In recent years a rodent eradication program was initiated that has proved highly successful and now is being repopulated by birds from neighbouring island. Hear about the success of this program in the podcast below.

Source: *ABC Science Show* (29/Aug/2020), <https://www.abc.net.au/radionational/programs/scienceshow/south-georgia-island-once-rat-infested,-becomes-a-rat-free-bird/12606544>

AUSTRALIA: NATIVE BIRDS AND REPTILES DIE AFTER EATING MICE POISONED WITH RAT POISON

In Western Australia, a number of native owls and lizards have been poisoned after consuming mice that had been fed Ratsak, a widely available rodenticide that contains brodifacoum. One wildlife carer reporting seeing five owls poisoned in one month, with only one bird surviving. The community is being encouraged not to buy the product and look to alternative means for mice control.

Source: *ABC News* (27/Aug/2020), <https://www.abc.net.au/news/2020-08-26/wildlife-carers-say-owls-lizards-are-dying-eating-poisoned-mice/12594146>

USA: INSECT FOOD CONTAMINATION FACTS FROM THE FDA

In the US, the Federal Department of Agricultural establishes what the acceptable limits are for insect and other contamination in the food that is consumed. For example, up to 13 insect heads are allowed in fig paste, mushrooms may contain 20 maggots per 100 grams, oregano may have 1,250 insect fragments per 10 grams of oregano, and even peanut butter may have 1 rodent hair per every 100 grams. Delightful!

Source: *ETimes* (27/Aug/2020), <https://timesofindia.indiatimes.com/life-style/food-news/scary-food-facts-from-fda-that-will-leave-you-shocked-/photostory/77780254.cms>

THAILAND: POLICEMAN MAKING MONEY FROM RATS

In Thailand a policeman is making good money by selling rats; the lesser bamboo rats. These are very large rodents the size of a smallish dog and make excellent pets. Moreover, the 'cuteness' factor of bamboo rats makes them extremely popular. The policeman makes between USD320-480 for a breeding bamboo rat.

Source: *TheStar* (26/Aug/2020), <https://www.thestar.com.my/aseanplus/aseanplus-news/2020/08/26/thai-policeman-makes-a-killing-with-rats>

USA: GLOBAL BED BUG SUMMIT GOES VIRTUAL

The National Pest Management Association (NPMA) in conjunction with Bed Bug Central in the USA have been running a biennial event known as the Global Bed Bug Summit. This has been the premier event on bed bugs and bed bug related products and has been held in Denver for the last three occasions. The original plan was to hold the summit in early December, however due to the COVID-19 pandemic the event is now virtual. More details will be available soon from the link below.

Source: *NPMA* (26/Aug/2020), <https://nmpapest->

[world.org/education-events/upcoming-events/global-bed-bug-summit/](https://www.world.org/education-events/upcoming-events/global-bed-bug-summit/)

INDIA: COVID-19 HAS LED TO REDUCE MOSQUITO NUMBERS IN AHMEDABAD

The lockdown in Ahmedabad in India has had one huge benefit; people have cleaned up their homes. Whether this is deliberate to avoid mosquito bites, or out of sheer boredom, mosquito numbers have dropped by 80% in the area. The follow on effect has been a reduction in mosquito-borne diseases.

Source: *Ahmedabad Mirror* (25/Aug/2020), <https://ahmedabadmirror.indiatimes.com/ahmedabad/cover-story/coronavirus-panic-relieves-ahmedabad-of-mosquito-menace/articleshow/77731584.cms>

INDIA: RAT CAUSED OVER USD\$130K DAMAGE IN CAR SHOWROOM

In Hyderabad, India, after months of investigation, it was found from CCTV that a rat was responsible for a major fire. An entire floor of a car showroom was destroyed by fire and it was initially believed that the fire was the result of an electrical short circuit. From the CCTV, a rat was seen running around with something glowing in its mouth, turns out this was from a burning wick on a lamp that was used in a prayer meeting. The rat grabbed the wick and dropped it onto a chair, initiating the fire.

Source: *World Asia* (22/Aug/2020), <https://gulffnews.com/world/asia/india/india-rat-held-responsible-for-starting-fire-that-led-to-damages-worth-rs1-crore-dh490187-in-a-car-showroom-1.1598097142327>

USA: MASSIVE MOSQUITO RELEASE PLANNED FOR FLORIDA

There is a plan to release some 750 million mosquitoes into Florida. Is this some bizarre plan to suck the blood out of all the residents? No! The mosquito strain being released, which is the dengue vector *Aedes aegypti*, has been genetically modified such that when the males mate with the females, the offspring die as larvae. The plan has received all the statutory government approvals and it will be interesting to see how effective this approach is in reducing *Aedes aegypti* mosquitoes.

Source: *Gizmodo* (21/Aug/2020), <https://www.gizmodo.com.au/2020/08/florida-plans-to-fix-its-mosquito-problem-with-750-million-more-mosquitoes/>

SINGAPORE: COCKROACHES FOUND IN DINER'S MEAL

A woman who had ordered a bowl of noodles was met with a disgusting sight; a cockroach leg in her meal. This was purchased from Face Ban Mian's & Block 308C Anchorvale Road outlet. The Singapore Food Agency in response to the complaint inspected the stall and found no infringements but advised that the premise be kept free of pests.

Source: *Stomp* (20/Aug/2020), <https://stomp.straitstimes.com/singapore-seen/sfa-inspects-anchorvale-stall-after-woman-finds-cockroach-leg-in-ban-mian>

SINGAPORE: 46,000 BOTTLES OF REPELLENT GIVEN TO SCHOOL STUDENTS

With Singapore in the midst of the largest recorded outbreak of dengue in history, some 46,000 bottles of insect repellent have been handed out in schools in the worst hit areas. A total of 37 schools were targeted for the free repellent. At the same time, children were taught about where to find mosquito larvae and how to avoid them breeding. To mid-August, some 185,000 bottles have been distributed to the areas of highest dengue activity.

Source: *CNA* (18/Aug/2020), www.channelnewsasia.com/news/singapore/dengue-cluster-schools-students-get-mosquito-repellent-13030924

UK: RODENT CURATORS OF HISTORY

Rats will scrounge all sorts of materials for their nests and when ancient nests are found, the materials can tell something about human life at the time of the rodents' existence. In Sydney for example, some of the best artefacts of early colonial life have been found in old rodent nests. Recently in Oxburgh Hall in Norfolk, the United Kingdom, a long abandoned nest was uncovered during the renovations on a manor house. To the surprise of many, books from the 15th century had lined the rat's lair. There were more than 200

textile fabrics covering some three centuries, from the 1500's to the 1700's. Plus there were printed pages and even some handwritten 16th century sheet music. Over time the generations of rodents have even accumulated more modern items such as an empty chocolate box from World War I. As the boards covering the nests had not been moved for several centuries, the items were very well preserved.

Source: *Mental Floss* (18/Aug/2020), www.mentalfloss.com/article/627694/16th-century-british-artifacts-found-giant-rat-nests

ANTS AND TERMITES FIGHTING DISEASE

Any creature that is social in nature faces an increased risk of disease from their compatriots. To overcome such risks, termites and ants have evolved some extraordinary strategies to combat potential diseases. When an ant or termite returns to a nest, it is vigorously groomed (licked) by a nest mate to remove any pathogens. However, if the pathogen load is too great, then the termite will begin shaking and twitching, which tells its nest mates to stay away. Other termites will defecate near the sick termite as the faeces contains antifungal properties. If the creature is too sick, then it may simply be eaten by others. Are there lessons for humans – I am not sure that I wish to lick any sick people!

Source: *News@Northeastern* (18/Aug/2020), <https://news.northeastern.edu/2020/08/18/what-can-ants-and-termites-teach-us-about-fighting-disease/>

USA: FLAG WITH MOSQUITO FOR MISSISSIPPI BECAME SEMI-FINALIST

In the US, some state flags are being redesigned to remove elements that are considered racist, such as Confederate symbols. Mississippi has held a competition to replace the flag, and one that made it to the semi-finals was a flag that featured a mosquito (pictured below). That artist claimed that it was the state's unofficial pest and was done as a bit of fun. Later it was revealed that the flag was only included as a semi-finalist due to a clerical error, but this has not stopped many people becoming fans of the design. [SLD: considering the impacts that mosquitoes have had on humanity, it makes sense to reverse this six legged creature!]

Source: *Business Insider* (16/Aug/2020), <https://www.businessinsider.com.au/mississippi-new-state-flag-design-mosquito-flag-2020-8>



GERMANY: MICE PLAGUE DEVASTATING CROPS

Germany has been experiencing the most severe plague of field mice for some 30 years. It has been estimated that 300,000 acres of farming land have been decimated, with significant crop losses. Some people are claiming the plague is the result in the decline in use of pesticides but it has also been due to dry summers and mild winters.

Source: *Business Insider Australia* (16/Aug/2020), <https://www.businessinsider.com.au/plagues-of-field-mice-devouring-crops-on-massive-scale-2020-8>

AUSTRALIA: ANTS IN BANDAGES OF NURSING HOME PATIENT

With so much attention on COVID-19 at present, many other aspects of patient care have been left neglected. In one aged care home in Victoria, in the nation's south, a 95-year-old woman who had a bloodied bandaged leg, was soon covered in ants. Nursing homes in that state have been under focus as COVID-19 has gone through many killing numerous residents. These shocking conditions just highlight the poor state that so many of our elderly have to live in.

Source: *The Chronicle* (15/Aug/2020), <https://www.thechronicle.com.au/news/shameful-ants-crawling-out-of-bandages/4079129/>

INDIA: ATTEMPTED MURDER WITH RAT

POISON

In Kerala, in India's south, a man has been charged with the murder of his sister and the attempted murder of his parents, after lacing ice cream with poison. The man wanted to marry his girlfriend and claim all the family money. A few weeks earlier he tried to poison them with a laced curry. Sadly rat poison is commonly used in the Indian region both for suicides and attempted murder.

Source: *World Asia* (15/Aug/2020), <https://gulfnnews.com/world/asia/india/ice-cream-laced-with-rat-poison-new-kerala-murder-case-involving-family-comes-to-light-1.73208831>

USA: NEW REPELLENT APPROVED BY EPA

In the US, the Environmental Protection Agency approved the use of a new repellent in the fight against ticks and mosquitoes. The chemical, nootkatone, is found in cedar trees and grapefruit (and the product is reported to smell like grapefruit). It is widely used in the food and perfume industries. So far there is little independent data on the efficacy of this product compared with traditional repellents such as DEET. It is too early to say if this will be registered in other nations.

Source: *The New York Times* (15/Aug/2020), <https://www.pilotonline.com/featured/sns-nyt-citrus-flavoring-weaponized-against-insect-diseases-20200815-tdqjmc7llnfwhgq7b457kcuqry-story.html>

CHINA: NEW TICK-BORNE VIRUS CAN PASS BETWEEN PEOPLE

A new tick-borne disease discovered this year in China called Severe Fever with Thrombocytopenia Syndrome (SFTS), based on its symptoms has been found to pass from person to person, even without the tick vector. To date some 37 people in East China's Jiangsu Province have been diagnosed with the condition. There is no vaccine nor any specific treatment and so tick avoidance is the best means of preventing the disease.

Source: *Manila Bulletin* (8/Aug/2020), <https://mb.com.ph/2020/08/08/novel-bunya-virus-infection-caused-by-tick-bites-can-pass-from-person-to-person-expert/>

CHINA: TICK-BORNE DISEASE CAN PASS

FROM PERSON TO PERSON

A tick-borne disease was discovered in China in 2009 and was given the rather long name of Severe Fever with Thrombocytopenia Syndrome (SFTS) due to the symptoms produced. It was first discovered in Central China's Henan and East China's Anhui provinces, and has a moderate fatality rate of between 1-5 percent. Symptoms may include fever, rash, then white cell production may be reduced and people die to organ failure. Patients can bleed profusely and shed the virus to others. On a case of one patient that died, 16 other people became infected from contact with the blood. The tick vectors are mainly found in mountainous regions where there are wild animals. This year there have been 23 people hospitalised with SFTS and 5 deaths.

Source: *Global Times* (5/Aug/2020), <https://www.globaltimes.cn/content/1196864.shtml>

HONG KONG: RODENT PROBLEM AT HUNG HOM WET MARKET

A district councillor in the region has expressed concerns over the number of rodents and cats at Hung Hom wet markets in Hong Kong. The worry is that diseases could be spread from the animals to humans. Furthermore, there are few temperature checks on people entering the markets and it could become the source of the spread of COVID-19. Other markets in Hong Kong have been linked to the transmission of COVID-19.

Source: *The Standard* (5/Aug/2020), www.thestandard.com.hk/breaking-news/section/4/152385/District-councilor-says-rodent-infestations-in-Hung-Hom-wet-market-are-common

RUSSIA: TORNADOES OF MOSQUITOES FORMING IN FAR EAST RUSSIA

Following extremely warm weather, huge swarms of mosquitoes have been emerging. The mosquitoes are in such large numbers, their mating swarms appear as tornadoes coming from the ground. The video is well worth watching in the link below.

Source: *The Morning Show* (5/Aug/2020), <https://7news.com.au/the-morning-show/russian-villages-are-suffering-from-an-infestation-of-mosquito-tornadoes--c-1217447>

VIDEO OF LEAF CUTTER ANTS DEMOLISHING FLOWERS

At Houston Zoo in the US, colonies of leaf cutter ants are maintained. These ants will collect flower petals and take them back to the nest on which fungi are grown for food. Attendants at the zoo placed roses into the ant colony and filmed the subsequent destruction of the flowers. Well worth a watch in the link below.

Source: *Kearney Hub* (4/Aug/2020), https://kearneyhub.com/news/national/mesmerizing-timelapse-shows-leaf-cutter-ants-demolishing-roses/video_13038100-c86d-5a51-85c5-a5780cb1a6e6.html

USA: CLIMATE CHANGE CONTRIBUTING TO LONGER MOSQUITO SEASON

In areas of northeast US, various mosquito species are being caught much up earlier in the season and being trapped later in the season. The difference amounts to mosquito activity of some weeks longer than historical patterns. The reason is believed to be linked with global warming and climate change. The problem with a longer mosquito season, is that not only are people more likely to be bitten over a more prolonged period, the risk of the transmission of mosquito-borne disease subsequently increases. In one part of Pennsylvania, the mosquito season is now almost four weeks longer than it was in 1980.

Source: *The Philadelphia Inquirer* (4/Aug/2020), www.inquirer.com/science/climate/mosquitos-climate-change-climate-central-global-warming-philadelphia-allentown-atlantic-city-zika-20200804.html

UK: RATS RESISTANT TO ANTICOAGULANTS

Concerns are being raised over the uncontrolled use of second generation anticoagulants, which is leading to rats becoming highly resistant. Research indicates that these super-resistant rats are quickly spreading, with the consequence rodent numbers are rising. Now a survey has begun of farmers to try and determine the extent of the problem. Clearly non-chemical solutions are the only viable sustainable means of rodent management.

Source: *FarmingUK* (3/Aug/2020), www.farminguk.com/news/farmers-needed-for-poison-resistant-super-rat-survey_56230.html

NEW ZEALAND: MORE SUCCESS STORIES WITH PREDATOR-FREE PROGRAM

New Zealand's 'Predator-Free Program' that aims to eliminate all rats and other predators by 2050 has had another success story. The island of Rakitū near Auckland has been declared predator free for two years and now several bird species are flourishing on the island including the strange ground owl known as Kākāpō. Plus other bats, and various reptile and insect life has come back in a big way. Hopefully more islands will become predator free in the near future to protect New Zealand's unique flora and fauna.

Source: *Stuff* (3/Aug/2020), www.stuff.co.nz/environment/122321751/predatorfree-island-no-rats-on-hauraki-gulfs-rakit-island

AUSTRALIA: INCREASED FUNDING REQUIRED TO CULL PEST DEER

An animal outside of its natural range can quickly become a pest. Rusa deer were introduced into the Royal National Park, just south of Sydney and have become a major pest. These deer do considerable damage to native plants, plus cause erosion and cause harm to residential properties. This year deer numbers have been especially bad and funding needs to be more than doubled to ensure that the deer populations are kept under control.

Source: *Illawarra Mercury* (1/Aug/2020), www.illawarramercury.com.au/story/6859520/400k-needed-just-to-keep-a-cap-on-wollongongs-pest-deer-mayor/

USA: MURDER HORNET TRAPPED IN WASHINGTON

The spread of pests around the world poses an ongoing threat in the global world we live in today. Recently there were reports of 'Murder Hornet's occurring in the US, however there was little solid evidence for these until now. Murder Hornets originate from Asia and are extremely large, up to 5cm long, and very aggressive. In Japan where the wasps are most common, some 30-40 people die every year from the stings. For the first time now, a Murder Hornet was trapped from Washington State and the species identity confirmed. It is not known how widespread these wasps are in the US at present.

Source: *SBS News* (1/Aug/2020), <https://www.>

[sbs.com.au/news/washington-state-traps-its-first-murder-hornet](https://www.sbs.com.au/news/washington-state-traps-its-first-murder-hornet)

AUSTRALIA: WOMEN RECEIVES AWARD FROM ANIMAL RIGHTS GROUP AFTER SAVING SPIDER

Elina Walsh, an animal lover from Townsville in the far north of the country found a huntsman spider with only two legs. She immediately provided it with water soaked cotton wool, which the spider drunk from, and then fed it small cockroaches. Over 1 month the spider regrew six legs, which are typically smaller than normal, and then during subsequent moults the legs have grown larger. The animal activist group, PETA, awarded Elina with a certificate to recognise her as being an 'animal hero'.

Source: ABC News (31/Jul/2020), <https://www.abc.net.au/news/2020-07-31/huntsman-hero-awarded-by-peta-australia/12507240>

AUSTRALIA: COVID-19 LOCKDOWN SEES A HUGE SPIKE IN RODENT NUMBERS

With Melbourne, Australia being in various levels of COVID-19 related lockdown for some months, many restaurants had to close. Now city rodents have had to move to the suburbs to search for food. Some pest managers in the city are reporting that there has been a significant increase in rodent numbers since March.

Sources: Happy (29/Jul/2020), <https://happymag.tv/melbourne-coronavirus-update-rats-planning-to-take-over-the-suburbs/> and 3AW (28/Jul/2020), www.3aw.com.au/why-rat-and-mice-populations-are-surging-in-melbournes-suburbs/

USA: DECLINE IN BOBCAT NUMBERS DUE TO RODENT POISON

The tragedy of the non-target impacts of rodenticides continues. In the US state of South Carolina, Kiawah Island is home to endangered population of native bobcats. The population has declined from around 30-35 individuals down to fewer than 10. It is thought that rat poison placed around urban centres has been the major cause of the feline's demise. There is now a high possibility that the island's entire bobcat population could die out if the community does not become more socially responsible in using rodenticides. A

community education program is now under way.

Source: *The Post and Courier* (25/Jul/2020), https://www.postandcourier.com/news/kiawah-island-seeks-states-help-in-protecting-remaining-bobcat-population/article_f3dcba38-cd00-11ea-9e8c-275a1a2dbd9a.html

SRI LANKA: 3,500 RAT-BITE FEVER CASES AND 10 DEATHS

Rat-bite fever occurs where a rat bite leads to the transmission of the bacteria *Streptobacillus moniliformis*. Symptoms may include fever, vomiting, headache, muscle and joint pain. Complication may lead to infections of various body organs such as the liver, lung, brain or heart, and this is when death may ensue. To late June in Sri Lanka, there have been some 3,500 suspected cases and 10 deaths. The rise of the disease is thought to be related to unexpected weather and the group most impacted are farmers who cultivate abandoned fields. It is recommended that high risk groups receive prophylactic treatments (presumably antibiotics) once per week. In 2019, there were some 6,021 case of rat-bite fever reported.

Source: *XinhuaNet* (24/Jul/2020), http://www.xinhuanet.com/english/2020-07/24/c_139238321.htm

DENGUE UPDATE FOR 2020

Bangladesh: there have been 326 dengue cases to 1/Jul and 321 have made a full recovery. Last year had a massive outbreak with 101,354 hospitalised and 179 deaths. With such a massive number of cases in 2019, it is not surprise that there are fewer this year (due to herd immunity).

Bhutan: so far few cases have been reported this year, mainly as there were so many cases in 2019.

Cambodia: to 15/Jul, the nation has seen 3,339 dengue cases and four deaths in children. The overall number of cases are down upon the previous year.

China: one new case of dengue was reported in Guandge.

India: in Maharashtra, some 1,279 confirmed cases of dengue were reported to 11/Jul.

Indonesia: to 22/Jun, there have been 68,753 dengue cases with around 500 deaths.

Laos: up to 18/Jul, there have been 3,257 dengue cases and 8 deaths.

Malaysia: in the first half of 2020, there have been 50,511 cases and 88 fatalities.

Myanmar: to 22/Jun there has been 1,480 cases and 12 deaths from dengue. Sagaing region had the highest number with 300 cases and 3 deaths.

Pacific Islands: the Marshall Island have had 3,446 dengue cases to 22/Jun. Yap Island has had 1,661 cases since 1/Jan/2019. The Cook Islands have had 352 confirmed cases over Jan/2019 to 16/ Jun/2020

Philippines: in Eastern Visayas to 13/Jul there have been more than 4,000 cases with 9 deaths. In Central Visayas, cases to 22/Jul total 8,724 with 31 deaths. Within Central Visaya, Cebu City had 1,154 cases.

Singapore: the country is facing its most severe outbreak of dengue in history. To 21/Jun there were at least 11,166 people reported with dengue and at least 19 deaths. In the week ending 18/ Jul there were 1,736 cases a new record within a seven day period.

Sri Lanka: up to 26/Jun, the Ministry of Health has reported a total of 21,478 dengue cases.

Taiwan: on 22/Jul, the first local case of dengue transmission was reported.

Thailand: as of 2/Jun, Thailand reported more than 6,000 children sick with dengue and overall some 15,385 cases and 11 deaths.

Source: *ProMED Digest* (23/Jul/2020), Vol. 97(58).

NEW ZEALAND: RAT INVADES MUSEUM KILLS RARE LIZARD

The tuatara lizard is a very primitive reptile occurring only in New Zealand. Native populations have been under pressure due to rats, which readily attack and kill the lizard. One tuatara that was being held in a Southland Museum in Invercargill in the southern end of the South Island, was killed by a rat. Fortunately it was not the famous 'Henry' a tuatara specimen that has been kept in the museum for 50 years. Staff of the museum believes it was just one rat that entered into the building.

Source: *Stuff* (23/Jul/2020), <https://www.stuff.co.nz/national/122226139/rat-invades-southland-museum-and-kills-tuatara>

INDIA: DEHLI TO USE GAMBUSIA FISH TO COMBAT MOSQUITO-BORNE DISEASES

South Delhi Municipal Corporation is going to

employ the mosquito-fish, *Gambusia*, to combat the transmission of mosquito-borne disease. *Gambusia* are voracious predators of larval mosquitoes and have been used around the world to control these creatures. In the case of Dehli, the *Gambusia* fish are going to be deployed during the monsoonal season where water pools.

Source: *Hindustan Times* (22/Jul/2020), <https://www.hindustantimes.com/delhi-news/gambusia-fish-to-help-south-civic-body-combat-mosquitoes-this-year/story-cNZwJDaSZ1jGsorhyDbl4N.html>

ABU DHABI: HUGE NUMBER OF CALLS FOR ANT CONTROL

In Abu Dhabi, there have been around 16,800 ant inquiries to the Abu Dhabi Waste Management Centre in the first half of 2020. This number was up by almost 2,000 upon the previous year.

Source: UAE (22/Jul/2020), www.thenational.ae/uae/environment/almost-17-000-calls-to-public-pest-control-services-made-in-abu-dhabi-emirate-for-help-to-get-rid-of-ants-1.1052919

INDIA: MOSQUITO-BORNE DISEASE KILLS 23 IN ASSAM

In the Assam region of India, this year there has been a decline in deaths from mosquito-borne disease such as Japanese encephalitis virus (JEV) compared with 2019. It is thought that this decline may be artificial due to an underreporting as a result of other disasters including the COVID-19 pandemic. To July this year, the region has seen 23 deaths related to mosquito transmitted diseases; 2 of these have been from malaria, the remainder from JEV. In comparison, for the same period in 2019 some 104 people had died from these diseases.

Source: *The Hindu* (21/July/2020), <https://www.thehindu.com/news/national/other-states/assam-mosquitoes-kill-manu-amid-flood-covid-19-crisis/article32152448.ece>

NEW ZEALAND: ATTEMPTS TO ERADICATE RATS AROUND WELLINGTON

Wellington is the capital of New Zealand. A campaign was initiated called 'Predator-free Wellington' with the aim of eradicating rodents in the region to preserve local wildlife. After months

of trapping, two large areas in the Miramar Peninsula are now considered to be rat free. An extensive camera system in monitoring the area for rodent activity. Unfortunately the COVID-19 pandemic did slow down the activities of the group as volunteers were unable to access the areas due to the lockdown. However, the control program is again in full swing. The ultimate aim is to make the whole city of Wellington predator free so that the Kiwi can be reintroduced to the area.

Source: *Stuff* (20/Jul/2020), <https://www.stuff.co.nz/environment/122165445/cameras-peanut-butter-and-disneyland-for-rats-could-finalise-eradication-from-miramar>

UK: FLYING ANT SWARM SO EXTENSIVE, IT APPEARED ON WEATHER RADARS

A swarm of flying ants some 50-miles long has appeared on weather radars in the south-east of England. This event occurs most years and the ants appear as a rain band on the radar. Typically the alate (winged) forms emerge on warm, moist nights for their mating swarm.

Source: *Inside Wales Sport* (18/Jul/2020), www.insidewalesport.co.uk/its-not-raining-just-a-50-mile-large-cloud-of-flying-ants-british-isles-information/

INDIA: JAPANESE ENCEPHALITIS VIRUS CLAIMS FIVE LIVES

In the Assam region of India, Japanese Encephalitis virus has now claimed five lives for the year. As many as 38 patients have suffered from the disease in 2020. This time of the year is the high risk season for the disease.

Source: *ProMED Digest* (12/Jul/2020), Vol. 96(23).

MALAYSIA: RISE IN JAPANESE ENCEPHALITIS VIRUS CASES

From Penang, three new cases of Japanese Encephalitis virus were detected in early June, for a total of six cases in 2020. Two new cases were detected in Sungai Bakap, Seberang Perai Selatan, and one case in Balik Pulau, Barat Daya district. Fortunately none of the patients had serious symptoms. In response to the cases, local authorities have enhanced mosquito control efforts, and public warnings have been issued.

Source: *ProMED Digest* (10/Jul/2020), Vol. 96(18).

TAIWAN: RAT SEEN RUNNING ON SUSHI BELT

In Taipei, a well-known sushi restaurant chain, Sushiro, was seen with a rat running along its sushi train. The restaurant has said that it will fully refund any patron who had dined in the store affected (Zhonghe District). The store was subsequently closed for rat control. According to the manager, all food comes from freezers and there were no food safety risks.

Source: *Focus Taiwan* (7/Jul/2020), <https://focus taiwan.tw/society/202007060025>

TAIWAN: JAPANESE ENCEPHALITIS VIRUS SEASON

This time of the year is the typical season for the mosquito-borne disease, Japanese Encephalitis virus. The Taiwan Centers for Disease Control has confirmed that there have been five new cases between 16 June and 2 July, with one case each in Changhua, Chiayi, and Kaohsiung, and two in Taoyuan. All five patients work in rural areas, which tend to have a higher risk of the disease. The five new cases makes the total nine for the year.

Source: *ProMED Digest* (7/Jun/2020), Vol. 96(15).

INDIA: RISE IN DENGUE EXPECTED IN CHENNAI

With the approaching monsoon, Chennai is expecting to see the typical rise in dengue cases around its region. A group attached to the local government, known as the 'Domestic Breeding Checkers' (DBC) will begin to undertake inspections for mosquito breeding. Up until recently this group was deployed to COVID-19 management, but now as many as 2,000 DBCs will go back to mosquito work.

Source: *The New Indian Express* (5/Jul/2020), <https://www.newindianexpress.com/cities/chennai/2020/jul/05/its-time-to-contain-mosquito-breeding-2165600.html>

USA: RAT COMPLAINTS DOWN WITH THE LOCKDOWN IN NYC, BUT EXPECTED TO RISE

With so many dining areas shut during the lockdown, rat complaints have been on the decline in New York City. However this is expected to change quickly as the city starts to open up again after a devastating spell due to COVID-19,

where there has been some 33,000 deaths. Already people are starting to see rats wrestling and playing in parks. Some believe that rodent populations have declined in the city and now would be a good time to undertake rodent control measures.

Source: *Gothamist* (5/July/2020), <https://gothamist.com/news/nyc-rat-complaints-are-down-experts-expect-change-city-reopens>

INDIA: TEACHING THE YOUNG THROUGH BED BUGS AND MOSQUITOES

Around the world cartoons are commonly used for socialising children into what are and are not acceptable societal practises. They are also used to help protect children from dangers. In India, a cartoon featuring a bed bug and a mosquito is being used to warn kids of 'stranger danger'. Basically the mosquito betrays the trust of the bed bug, leading to the demise of the wingless insect, while the mosquito harmlessly flies away. This can be viewed on YouTube at: <https://youtu.be/dD9AGRIPro>

Source: *ETimes* (4/Jul/2020), <https://timesofindia.indiatimes.com/videos/entertainment/kids/english/most-popular-kids-shows-in-english-bedbug-and-the-mosquito-videos-for-kids-kids-cartoons-cartoon-animation-for-children/video-show/76782299.cms>

BANGLADESH: TEN DAY ANTI-MOSQUITO DRIVE BEGUN

The Dhaka North City Corporation (DNCC) began a special sanitation drive beginning Saturday 5/ Jul to counteract a potential dengue outbreak. The drive was conducted over a three hour period daily to inspect premises for mosquito breeding. A database of positive households will be recorded and a mobile court will be taken around affected areas. Last year there were some 101,354 people hospitalized with dengue including 179 deaths.

Source: *DhakaTribune* (3/Jul/2020), <https://www.dhakatribune.com/bangladesh/dhaka/2020/07/03/dncc-mayor-dncc-to-launch-anti-mosquito-special-drive-saturday>

SINGAPORE: NEA UNDERTAKES ENFORCEMENT ACTION OVER MOSQUITO BREEDING

With the largest outbreak of dengue virus in

Singapore's history, the National Environmental Agency is cracking down on properties found with live mosquito larvae. Four households, a construction site, and a common area of an estate were the latest locations found guilty of breeding mosquitoes, to which legal notices have been issued. To early July, there had been more than 14,000 cases of dengue, with large clusters at Woodleigh Close, Aljunied Road, Bukit Panjang Ring Road, and Geylang Road. For the first five months of 2020, some 6,200 legal notices have been issued over mosquito breeding.

Source: *CAN* (2/Jul/2020), <https://www.channelnewsasia.com/news/singapore/dengue-nea-enforcement-action-egregious-mosquito-breeding-12894720>

INDONESIA: WOLBACHIA RELEASE LEADS TO A 77% REDUCTION IN DENGUE CASES

According to the World Mosquito Program, the release of *Wolbachia*-infected mosquitoes in Yogyakarta in Indonesia has led to a 77% reduction in the incidence of dengue infections. The trial was conducted in a 26km² area of the city. More details of the amazing result can be found from: <https://www.worldmosquitoprogram.org/sites/default/files/2020-08/RCT-WMP%20Indo-factsheet.pdf>. Note that *Wolbachia* helps to block the transmission of dengue virus in the *Aedes aegypti* mosquito and also shortens their life span.

Source: *World Mosquito Program* (Jul/2020), <https://www.worldmosquitoprogram.org/sites/default/files/2020-08/RCT-WMP%20Indo-factsheet.pdf>

AUSTRALIA: ROLLINS ACQUIRES ADAMS PEST CONTROL

Adams Pest Control with headquarters in Victoria, was the largest independent provider of pest control services. Rollins, Inc based in Atlanta, USA announced on 1/July/2020 that they have purchased Adams. Rollins now has a large presence across Australia having recently purchased Allpest, Murray Pest Control, Scientific Pest Management, and Statewide Pest Control.

Source: *Rollins* (1/Jul/2020), www.rollins.com/news/2020/07-01-2020-123038180 ■