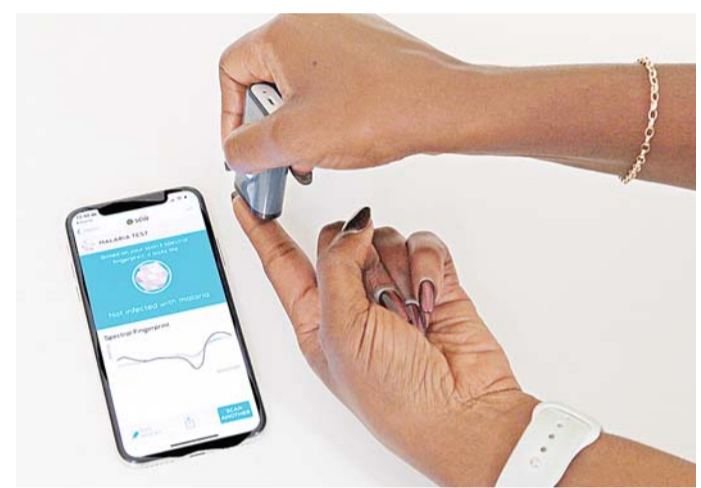


#INNOVATION

Life Saving Light Beam To Detect Malaria

The technique is chemical-free, needle-free and detects malaria through the skin using infrared-light - it's literally just a flash on a person's skin and it's done. The device is smart-phone operated, so results are acquired in real time



A fast, needle-free malaria detection tool developed by a University of Queensland-led team could help save hundreds of thousands of lives annually. Malaria is usually detected by a blood test, but scientists have devised a method using a device that shines a beam of harmless infrared light on a person's ear or finger for five-to-10 seconds. It collects an infrared signature that is processed by a computer algorithm.

A device that flashes a harmless infrared light on a person's finger or ear for five to ten seconds has been created by researchers. This technology gathers an infrared signature, which a computer system then analyses. This technique makes it simple and quick to determine whether a whole village or town has malaria or is infected with it. According to experts, the technology would basically change how malaria is fought globally.

International team leader, Dr Maggy Lord from UQ's School of Biological Sciences, said the technology would revolutionise how malaria is fought globally.

"Currently it's incredibly challenging to test large groups of people, such as the population of a village or town - you have to take blood from everyone and mix it with a reagent to get a result," Dr Lord said.

"But with this tool we can find out very quickly whether a whole village or town is suffering from, or carrying, malaria.

"The technique is chemical-free, needle-free and detects malaria through the skin using infrared-light - it's literally just a flash on a person's skin and it's done.

"The device is smart-phone operated, so results are acquired in real time.

The researchers believe the technology is the first step to eliminating malaria.

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that technology may be used at ports of entry to screen travellers, avoiding the re-introduction of infections and reducing worldwide epidemics. They believe that technology is the first step to eliminating malaria. An added advantage of the technology is that it can also help tackle other diseases.

"According to the World Health Organisation malaria report, in 2020 there were an estimated 241 million cases worldwide and more than 600,000 died from malaria," Dr Lord said.

"Most of the cases are in sub-Saharan Africa, where 90 per cent of deaths are children under five years old.

"The biggest challenge in eliminating the disease is the presence of asymptomatic people in a population who act as a reservoir for transmission by mosquitoes.

"The World Health Organisation has proposed large-scale surveillance in endemic areas and this non-invasive, affordable and rapid tool offers a way to achieve that."

The technology could also help tackle other diseases.

"We've successfully used this technology on mosquitoes to non-invasively detect infections such as malaria, Zika and dengue," Dr Lord said.

"In our post-COVID world, it could be used to better tackle diseases as people move around the globe.

"We hope the tool could be used at ports of entry to screen travellers, minimising the re-introduction of diseases and reducing global outbreaks.

"It's still early days, but this proof-of-concept is exciting."

The research is published in PNAS Nexus.

UQ has developed this tool in collaboration with the Instituto Oswaldo Cruz in Brazil, led by Dr Rafael Maciel de Freitas, who has applied the tool to detect malaria in patients who live in the Amazon region, using the tool in the region as an effective tool to detect malaria in patients.



Small vignettes also offer the human sides of the war. It relates the story of how an old woman offered sun flower seeds to a bewildered Russian soldier to put in his pocket; "so it would sprout sunflowers, when he was killed and buried in their soil".

Russia-Ukraine War

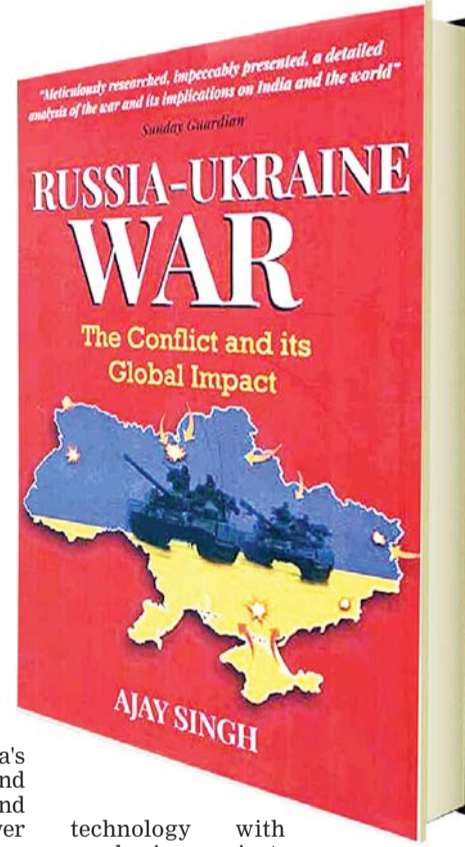


#BOOKWORM

With the ongoing Russia-Ukraine War still filling the front pages and impacting the world in different ways, there has been the need for a detailed examination of the war and the manner in which it could pan out. The book, "Russia-Ukraine War - The Conflict and its Global Impact," written by international award winning writer Ajay Singh, and published by Pentagon Press adequately fulfills the requirement. Meticulously researched and impeccably presented, it provides a detailed analysis of the war and its implication on India and the world.

There is no doubt that the analysis of the subject by Ajay and some of the leading luminaries in their respective fields promises excellent reading and offers valuable insights. The book takes you through the background of the war, and devotes considerable attention to the manner in which the war unfolded - right from the initial

offensives towards Kyiv and Kharkiv, the Russian occupation of the South and Donbas, and the Ukrainian counter-offensives both in the Northeast and Kherson. The book takes the reader right up to the recapture of Kherson (in Mid-November) and then explores different scenarios in which the war could end, including an 'Armageddon scenario' in which the likelihood of a Third World War is realistically depicted. Different aspects of the war such as, the conduct of mechanised operations, the use of fire power, the air and naval aspects, the economic costs and consequences, and the nuclear shadow have been covered in detail. And of course, the geopolitical impact, including Russia's relationship with China, NATO and US stance, the impact on India and the likely change in global power equations, with the likely emergence of a new world order have been covered in detail. The definitive volume seamlessly weaves together all facets of the war, but could have included issues such as the changing face of warfare, hybrid warfare, strategic communication and the impact of modern



technology with emphasis on private players.

Plausible Reasons

The author often compares the Russia-Ukraine war with the German invasion of the Soviet Union in World War II and draws interesting parallels. From a military perspective it brings out the initial operational mistakes of the Russians - having widely dispersed thrust lines which were not complementary and lacked cohesion, the lack of training and 'over confidence' of the troops who were not clear of their objectives and expected to be received as 'liberators', some even carried ceremonial uniforms in preparation for a victory parade. The intelligence seems to have got the 'pro-Russian sentiment wrong'.

The airborne assault at Hostomel on the first day of the war has been well written. Contrary to what is commonly believed, the attack was quite audacious and brilliant and would have decided the war in the first week itself, had it succeeded. But the Ukrainians

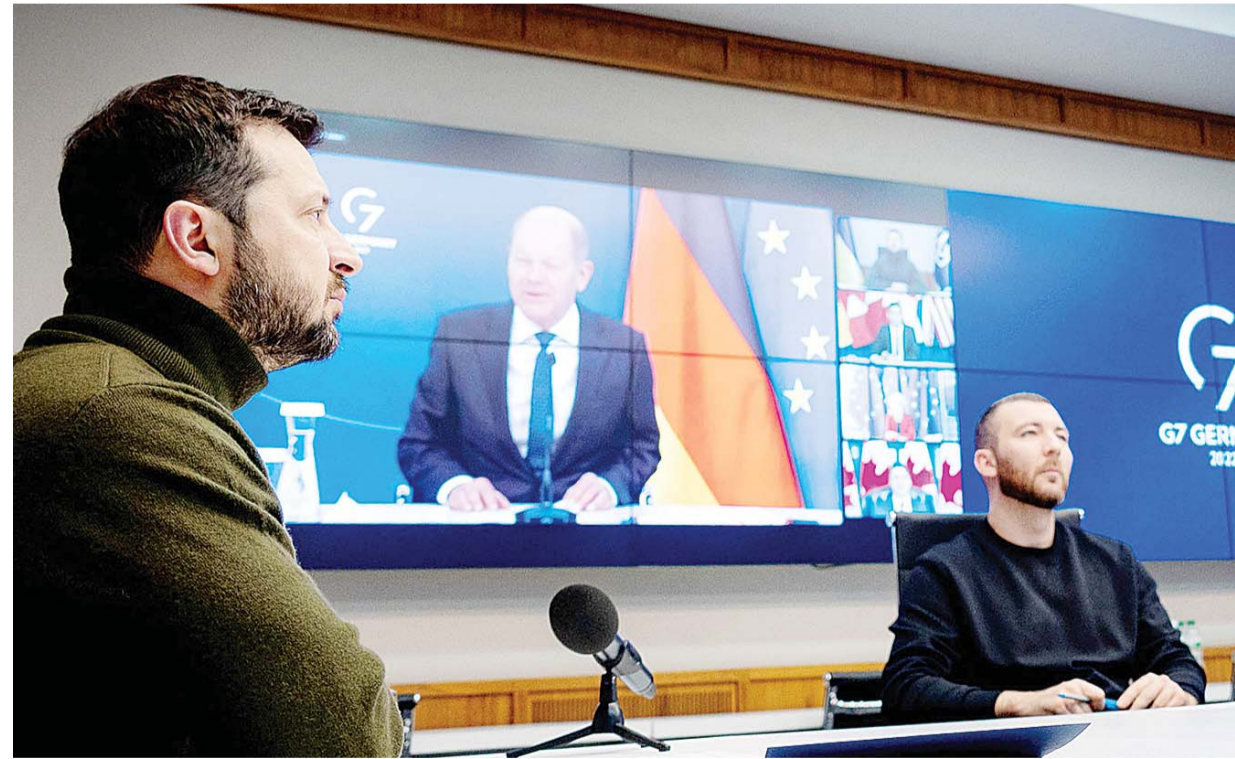
responded swiftly, and repelled the assault with heavy casualties. When the airborne assault failed the onus of capturing Kyiv now rested with the mechanised forces but just when it seemed the two columns would converge; "inexplicably the 64 km long column stopped". The book also brings out the more plausible reasons as to why the column halted - not because it ran out of fuel as is brought out, but because it waited for the complementary thrust from the Northeast to fetch up. Such insights add to the readers understanding of the overall battle.

Small vignettes also offer the human sides of the war. It relates the story of how an old woman offered sun flower seeds to a bewildered Russian soldier to put in his pocket; "so it would sprout sunflowers, when he was killed and buried in their soil".

The book offers separate chapters for the battle of Kharkiv, the campaign in the South (with emphasis on the capture of Mariupol) and the 'cauldron of the Donbas'. The battles are factually covered, and the author uses his military mind to provide a detailed analysis of these battles, including how they could be further developed. Maps and photographs add to the overall effect.

The Ukrainian counter offensive has been analysed in depth and covers both the offensives in the Northeast and the South. The clever use of 'A Matador's Cape' by the Ukrainians to draw the Russians towards the South while they launched their main offensive in the

In all, the book covers one of the most epochal events of this century, realistically and accurately. It's easy style & narrative brings out the war in the form of a story, which makes it appealing to all interested in warfare, history and contemporary events. Yet, as Ajay warns in the concluding chapter, the war is not over yet, but could continue till the next year & beyond.



By Rick Kirkman & Jerry Scott

Veganuary Month



Veganuary Month is a month-long celebration of all things vegan and was created to encourage non-vegans to try out the lifestyle. Often referred to as a lifestyle and not a diet, vegans who practice veganism aim to reduce the suffering of animals, help the planet and improve global health by not eating any animal products, such as meat, dairy, or eggs and also by abstaining from contributing to animal exploitation such as honey production, the creation of leather goods and the industrial farming of animals.



Northeast is well depicted. The book follows the progress of the offensive right till the recapture of Kherson and the present situation where the two armies are now in defensive positions along the lines of the Dnieper and Oskil rivers. The author brings out that though the Ukrainians have re-taken 6000 square kilometres, the Russians still hold over 200000 square kilometres of prime Ukrainian territory. Recovering that will be more difficult, especially with winter having set in.

Different Facets

While Ajay states that the most desirable end state for Ukraine lies in pushing back Russian troops and retaking all areas this could result in Russia "resorting to the use of nuclear weapons". The most likely scenario therefore seems to be 'an interminable frozen conflict with neither side being able to change the status quo'.

The book has got together a range of luminaries with expertise on different facets of the war. Lieutenant General PR Shankar, a former Director General of Artillery has written one of the finest pieces on 'The Impact of Firepower' and brings out how it remains 'The God of War'. Air Marshal Anil Chopra who heads the Centre for Air Power Studies brings out how 'the Russian inability to control the skies and not completely utilise the air power at their disposal, is one of the most baffling aspects of the war'. And Commodore Anil Jai Singh of the Indian Maritime Foundation brings out the hitherto neglected naval aspects of the war, including the sinking of the MOSKVA and the strategic importance of the Black Sea and Sea of Azov. While discussing sea control and sea denial he states that 'control of the Black Sea and consequent economic ruin of Ukraine was one of the principal reasons to annex Crimea in 2014 and this conflict, eight years later'.

Maj Gen Jagatbir Singh a Distinguished Fellow with USI, brings out how Ukraine's ambition to join NATO led to the disastrous war. In a very balanced perspective, he also highlights the security implications it would have on Russia. He also brings out the expansion of NATO after explicit promises that the alliance would not 'move one inch eastwards' and how Henry Kissinger himself had warned that it would be a red line for Russia. Paradoxically, the alliance has strengthened after Russia's attack on Ukraine, but he cautions that, "at the end of the day, the long term threat to world peace is not Russia but China."

He also brings out how a rough Russia-China-Iran-North Korea axis can emerge and how it could reshape the new world order. Lieutenant General Raj Shukla, a former ARTRAC Army Commander and reputed strategic thinker talks about the Impact and Lessons for India. With the debunking of many theories of war, the instrument of force has returned to the centre of the power calculus and "crafting a war winning instrument in the highest state of readiness, should be a strategic priority." The parallels between the Russia-Ukraine War and the equation between India and China are very well brought out.

In all, the book covers one of the most epochal events of this century, realistically and accurately. It's easy style and narrative brings out the war in the form of a story, which makes it appealing to all interested in warfare, history and contemporary events. Yet, as Ajay warns in the concluding chapter, the war is not over yet, but could continue till the next year and beyond. Even when the war ends, its effects will ripple across much of this century - very much like the effects of the First World War, and "even when the war ends, it would still not be the concluding chapter, but the start of the next."

A very valuable Western Perspective to the War has been brought out by Jason Hall who writes tellingly of how the war - and the bitter hardships that the energy shortages have brought upon Europe - has impacted the lives of ordinary individuals. Equally telling is the chapter "Gas, Grain and Sanctions" which highlights how food, energy and economics have been used as weapons of war. The culminating chapters cover the impact on India and the World. "The global Impact: New World Order" has been authored by Captain Alok Bansal, Director with India Foundation. He brings out how the USA can use this crisis to regain its pole position in the world

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#MIGRATION

Migratory Birds That Brighten India Every Year

The nation extends its famed hospitality to a whole host of migratory birds



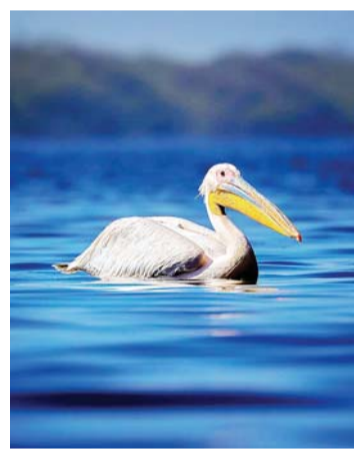
argely a nation blessed with geographical diversity, India fosters a wildlife few other countries can match. While a huge multitude of animals walk its terrain, and an equally impressive number of birds soar its skies, the nation extends its famed hospitality to a whole host of migratory birds as well. It was Mumbai's oddly misplaced flamingos of sewri that inspired the search for them in the first place but upon closer inspection, we found that they were in much more hallowed company.

Plenty of birds seek refuge from either the clod in the North or the heat in the west and the south, and the climate of India provides the perfect escape from both. Here are some of the most fascinating ones.

Northern Shoveler

The Journey: From Europe and Northern Asia to The Himalayas

This resident of Europe and Northern Asia, the Northern Shoveler is a species of duck that spends its winters in southern Europe, Africa, the Indian Subcontinent, northern South America and the Malay Archipelago. A huge population of these birds, which spend its winters in the Indian Subcontinent makes a taxing journey over the Himalayas, often taking a break in wetlands just south of the Himalaya before continuing further south to India. The birds, which reside in marshy wetlands in the north, have seen a tremendous rise in its population in the past four decades, numbering over four million today.



Rosy Pelican

The Journey: From Europe To North India.

Pelicans are known to possess gigantic beaks - yet, the Rosy Pelican is known for its gigantic wingspan too, which stretches close to 12 feet in length. Like other winter migratory birds, the Rosy Pelican migrates to the north of India, settling down in shallow, fresh water lakes with plenty of fish. Although a majority of these birds settle down in Pakistan, some of them visit India, while some go as far and as high as Nepal. Due to over-fishing, the Rosy Pelicans have had to go farther south to look for food, which has brought about a disruption in their habitat. However, on the odd occasion, they might also eat seagulls and ducklings - and sometimes, even steal other birds' food!

spend their summers in Iceland or Russia - where they breed, eat and raise their young. However, winters are not too kind on these delicate birds up in the north, so they migrate down south - landing in the lowland wet grasslands in North India. The birds prefer the mud and the muck, and can generally be found by inland pools, lakes and marshes. They feed on mostly insects or frogspawn, and walk the mucky lands in India for a good four-five months.

Spotted Redshank

The Journey: Scandinavia to Haryana.

A bird that soars the airs of Scandinavia in the summer turns South-East during the winters. The tiny Spotted Redshank needs a moderate temperature and tropical conditions, as well as wet coniferous forests for its nests. Therefore, the period after monsoons in India is perfect for their survival. The females lay the eggs and leave India to return to Scandinavia while the young ones hatch in India itself and are taken care of by the males.



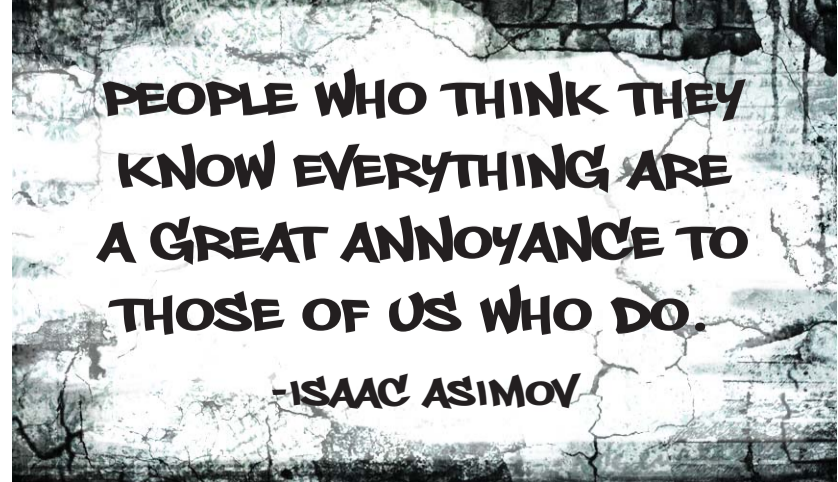
Gadwall

The Journey: From Europe & North America to Bhopal, India.

Myla, Bhuar, Beykhur: If you recognise any of those three names, you'd know we're referring to Gadwall. The tiny brown duck is a common winter visitor in India, travelling many a mile from its home in Europe and North America. Gadwall generally prefers freshwater reedy marshes, sheels and other such low water bodies. It prefers to keep near emergent vegetation for quick availability of food. The bird can be spotted during the winters in north central India, most notably in Bhopal.

By Jerry Scott & Jim Borgman

THE WALL



BABY BLUES



ZITS



ZITS



ZITS

