SCIENCE

Mystery deepens over mass die-off of antelopes A mass die-off of wild antelopes in Kazakhstan was triggered by environmental factors, scientists believe. More than 200,000 saiga antelopes collapsed and died suddenly in 2015, wiping out most of the global population. The deaths were found to be caused by a bacterial infection. However, new data shows other factors were involved too, including unusually high humidity and temperatures. Researchers think changing environmental conditions could be a trigger for the bacterial onslaught, although this needs further research. They say there is a high chance of the same thing happening again, given climate change predictions for the region. Study leader Prof Richard Kock of the Royal Veterinary College London was part of the original emergency response team. He said the event went way beyond what would normally be expected from a bacterial disease of this kind. “The whole thing was really extraordinary,” he said. “It’s very very likely to happen again.” The multi-disciplinary team used statistical analysis to look at environmental conditions at the time. They found that there were unusually warm temperatures and high humidity in the days leading up to the wildlife deaths. The same was found for two previous mass die-offs of antelopes in 1981 and 1988 in central Asia. The mechanisms by which climate factors triggered this bacterial attack remain unknown, and require future research, they say. A link with climate had been noted before, but, “this is the first concrete evidence”, said Prof Kock. There is an urgent need for mitigation of other risks to the critically-endangered animal, such as poaching and the spread of diseases from livestock, he added. “There’s theoretically a possibility of extinction of the species entirely,” he said. “We have at least got a number of populations - albeit small ones - that are outside the danger zone.” Other wildlife, such as reindeer, could also be susceptible to mass die-offs, scientists believe. The antelopes all died within days of each other over a large area of central Kazakhstan. It later emerged that the most likely cause was blood poisoning from a bacterium found naturally in saiga antelopes, which is usually harmless. Co-researcher Steffen Zuther of the Frankfurt Zoological Society/Association for the Conservation of Biodiversity of Kazakhstan said mass mortality events are a major threat for the saiga antelope and can wipe out many years of conservation work in a few days. “The triggering of such mass mortality events in saiga through weather conditions shows that not much can be done to prevent them occurring, and therefore how important it is to maintain saiga populations of sufficient size for the species to survive such catastrophes,” he explained. “The event was simply catastrophic for the long-term survival of this critically endangered species,” said Nida Al Fulaij of the wildlife charity, PTES, which funded some of the rescue work. The saiga antelope lives on the grasslands of Central Asia in large herds of up to a thousand individuals. The International Union for the Conservation of Nature says the animal is at risk from illegal hunting for horns used in Chinese traditional medicine, as well as from habitat loss and grassland fires. The research is published in the journal, Science Advances. *BBC*

From the Comedians Quote Book

The older I get, the less important the comma becomes. Let the reader catch his own breath.

Elizabeth Clarkson Zwart

HEALTH

Breast cancer survival ‘unaffected by faulty gene’ Young breast cancer patients with faulty BRCA genes have the same survival chances as those without, a study has found. The researchers, who looked at almost 3,000 women, also found outcomes were the same whatever kind of treatment women had - including mastectomies. Experts say it means women can take time to decide if the radical surgery is right for them. The study did not look at preventative mastectomies. These are offered to women with faulty genes to cut their risk of developing cancer. Mutations in the BRCA1 and BRCA2 genes increase a woman’s risk of breast cancer by four-to-eightfold and can explain why some families have lots of relatives diagnosed with breast cancer. The study, published in The Lancet Oncology, found 12% of 2,733 women aged 18 to 40 treated for breast cancer at 127 hospitals across the UK between 2000 and 2008 had a BRCA mutation. The women’s medical records were tracked for up to 10 years. During this time, 651 of the women died from breast cancer, and those with the BRCA mutation were equally likely to have survived at the two-, five- and 10-year mark as those without the genetic mutation. This was not affected by the women’s body mass index or ethnicity. About a third of those with the BRCA mutation had a double mastectomy to remove both breasts after being diagnosed with cancer. This surgery did not appear to improve their chances of survival at the 10-year mark. But the researchers said surgery may still be beneficial for these patients to reduce their risk of a new cancer developing in the longer term. What is the BRCA gene? It has been dubbed the ‘Angelina Jolie gene’, after the actress revealed she underwent preventative surgery on learning she had an up to 87% chance of developing breast cancer. Everyone has the BRCA genes, but when a fault occurs in one of them it can result in DNA damage and lead to cells becoming cancerous. Around 1 in 800 women in the general population are thought to carry the mutation and 5% of women with breast cancer in the UK will have a faulty form of the BRCA gene. The faulty genes are also linked to an increased risk of ovarian and prostate cancers, as well as breast cancer. Angelina Jolie had a preventative mastectomy, before she developed cancer. These types of surgery were not examined in this study. The study’s author, Professor Diana Eccles, of the University of Southampton, said: “Women diagnosed with early breast cancer who carry a BRCA mutation are often offered double mastectomies soon after their diagnosis or chemotherapy treatment. “However, our findings suggest that this surgery does not have to be immediately undertaken along with the other treatment.” **‘More time to decide’** Fiona MacNeill, of the Royal Marsden NHS Foundation Trust, who was not involved in the research, said: “This study can reassure young women with breast cancer, particularly those with triple negative cancer or who are BRCA carriers, that breast conservation with radiotherapy is a safe option in the first decade after diagnosis and double mastectomy is not essential or mandatory at initial treatment. She added: “In view of this, younger women with breast cancer can take time to discuss whether radical breast surgery is the right choice for them as part of a longer-term risk reducing strategy.” Katherine Woods, from charity Breast Cancer Now said the findings “could enable many patients to make even more informed choices regarding their treatment”. “In particular, being able to give some women with triple negative breast cancer the choice to delay a risk-reducing mastectomy would allow them to take back control of a major part of their treatment and offer them more time to recover from their initial therapy.” She said she was now keen to understand how women fared more than 10 years after their diagnosis. The authors note the findings do not apply to older women. *BBC*