Non-Fiction

Group 1

The Tale of Dinosaurs

German Swiss International School, Shin, Briella – 7

Have you wondered if dinosaurs ever existed?
If so, keep reading to learn more about dinosaurs.

CHAPTER 1
Winged Dinosaurs
Why do you think this subheading is called winged dinosaurs?

Because in this paragraph, we are going to look at dinosaurs that CAN fly!

The oldest flying dinosaur that was found was the Aurornis. It lived 160 million years ago. It was found in Yaoguo in western Liaoning, China. The rock fossil was found in 2013, 3 years before I was born.

Rhombopteryx is the second winged dinosaur that was found in 2017. It lived during the late Juraasic, which is 145 to 161 million years ago. It was found in Wubaiding Village in northeastern China.

CHAPTER 2
Land Dinosaurs
The first land dinosaur that was found was the Megalosaurus. The Megalosaurus lived during the Bathonian age, around 168 million years ago. It was found in Oxfordshire in England.

Iguanodon is the second land dinosaur ever found. It lived 139 million years ago. It was discovered in the 19th century, mainly in England.

CHAPTER 3
Marine Reptiles
In this section, we are going to focus on Marine Reptiles. These are not really dinosaurs, but they are friends.

The first reptile that I'm going to talk about is the Plesiosaurs. The Plesiosaurs are known for their long necks. They lived in various environments, from shallow waters to deep waters. If you are asking whether Plesiosaurs can swim, they are actually brilliant swimmers.

Ichthyopterygia was the second Marine reptile. The Ichthyopterygia looks like a dolphin. They also have slim bodies and long noses. The Ichthyopterygia are known for their long necks too.

CHAPTER 4
10 cool facts about dinosaurs.
1. Did you know that Stegosaurus have bony plates to protect themselves?
2. Did you know that plant-eating dinosaurs are the biggest animals that ever walked on earth?
3. Did you know that the name triceratops means three horns?
4. Did you know that the tiny dinosaur Microraptor has feathers on its arms and legs?
5. Did you know that the Parasaurolophus had a long, backward curving crown on its head?
6. Did you know that the Sauroposeidon may be as long as over 100 feet and weigh as heavy as 40 tons?

7. Did you know that many dinosaurs lived in herds?
8. Did you know that the Brachiosaurus had longer front legs than back legs?
9. Did you know that the size of the brain of a Stegosaurus is similar to a walnut?
10. Did you know that dinosaurs were living on earth for more than 165 million years?

Now that you have learnt so much about dinosaurs, do you want to go see them? Teleport with me to go to China in the 1990s when people started discovering China as a place for dinosaur fossil-hunting. Maybe we can join the discovery of Sinosauropteryx, the world's first discovered feathered dinosaur! 3,2,1, blast off!

New Tales of China's Dinosaurs

Kowloon Tong School (Primary Section), Hui, Yet Wai – 8

Humans are evolved from apes, but do you know what birds are evolved from? Before 1996, two points of contention is that bird's origin of dinosaurs or reptiles. But recent decade, along with China become the research centre of feathered dinosaur, scientists finally prove birds are evolved from dinosaurs. All of these start from the discovery of first feather dinosaur fossil in Liaoning, China.

In this report, we are going to talk about the impact of those special fossils found in China.

In 1861 in Solnhofen, German, the fossil of Archaeopteryx was found. Its structure had both reptile and bird characteristics, and it's similar with Compsognathus, kind of this dinosaur fossil was found in 1850. It's the first-time scientist linked birds with dinosaur. Afterwards, people used more than 100 years to prove their statements.

Until 1996, a farmer from a village in the west of Liaoning dug up a piece of stone slab, it was hard and there was pattern with fossils on it. A month later, he handed it over to China

University of Geosciences. Mr Ji from CUOG discovered that the fossil had characteristics of meat-eating dinosaurs, such as sharp teeth with serrations, tore limbs, hind limbs and long tails, he could see that it was clearly a dinosaur. However, explosion shocked him. it's not a normal dinosaur, it's fluffy-haired. There was a short layer of fibrous barrier less than 1 cm wrapped around head to tail. Mr Ji courageously linked it to the origins of birds. After this discovery, some paleontologists from the world agreed with Mr. ji about the short layer. But it was not fully evolved since it is still in primitive or derivatives stage. Some of them still thought the laver was hairs rather than feather. At this point, although paleontologists had conflicts about the feather structure, and were suspicious of the usage of primitive feather was only for maintaining its own temperature, rather than on modern birds, feather on wings helped flying, this was the first strong evidence that proved birds were evolved from dinosaurs.

From Sinosauropteryx forward, feathers evolution had been found from these dinosaur fossils, China's tales of dinosaurs began. Early 1997, Protarchaeopteryx was found in Liaoning, it had exactly same feathers as modern birds around its tail. Later, Caudipteryx was found. lt possessed a long tail and feather indicating characteristics of early birds, its body structure resembled small dinosaur, however in its stomach, there was pile of small stones which also could be found in modern birds that have herbs for food, showing evolutionary links to birds

After Caudipteryx, arguments around dinosaurs and birds stopped. With more and more dinosaur species have been found in liaoning, even other places of China. They have reshaped people's understanding and solved problems which people debate for more than a hundred years. Palaeontologists are excited and surprised by China, especially the western of Liaoning. They are awaiting this land to bring more and greater miracles to the world.

New Tales of China's Dinosaurs

Marymount Primary School, Sin, Ka Man – 6

According to oldest.org, studying fossils (paleontology) has helped scientists piece together our planet's history and has provided insight into the origins of life. A specimen must be about 10,000 years old to be considered a fossil and many of them on the fossil record are millions of years old.[1]

American Museum of Natural History mentioned that Dr. Mark Norell, Chair and Curator, Division of Paleontology, analyzed important new feathered dinosaurs from Liaoning, China. Under his direction, a team of paleontologists working in the Gobi desert since 1990 has produced a wealth of great specimens.[2]

Reported by Elizabeth Mearns in CGTN on 21 February 2024, the science of paleontology was given an incredible boost in 1996 when on a hillside in Sihetun, Liaoning Province, a Chinese farmer stumbled onto the world's first known feathered dinosaur. The creature is now known as Sinosauropteryx - literally, China winged reptile - and the discovery led to a gold rush of fossil-finding that has turned China into the new center of paleontology.[3]

What stories the ancient fossils in China will tell us? Will it eventually become an oriental Jurassic Park? In Chinese, Dinosaur and Chinese dragon sounds similar. Chinese dragon is associated with the emperor of China. It represents prosperity and good luck. 2024 is the "Year of the Dragon" and dragon is one of the 12 animal signs under the Chinese zodiac. However, Chinese dragon is a virtual animal whereas China's Dinosaurs is based on the study of Dinosaur Science and paleontology.

In my opinion, China's Dinosaurs attracts Dinosaur lovers all around the world to study the Dinosaur Science. We should not use the traditional view of Chinese dragon to stereotype China's Dinosaurs. In fact, there is a China Dinosaurs theme park located in Changzhou, Jiangsu and it has been opened since September 2000.

With the use of artificial intelligence, I believe Paleontologists can find out more species of Dinosaurs in China and can create videos and photos of China's Dinosaur and let the public knows how China's Dinosaur look like 10,000 years ago.

With more resources allocated to the study of China's Dinosaur, scientists can study the topic on extinction of China's Dinosaur. It is an interesting topic to compare the DNA of China's Dinosaur with the DNA of other animal species and study the evolution process in the past 10,000 years. By studying this topic, I believe scientists can found out more about the sustainability of human being.

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Exploring China's Dinosaur Discoveries

Victoria Shanghai Academy, Guo, Ka Hei – 7

Have you ever seen a dinosaur? Your answer is definitely "not yet"! The term "dinosaur," meaning "terrible lizard," refers to a group of reptiles that ruled the Earth over 65 million years ago. In Chinese, dinosaurs are called 恐龙 (kǒng lóng). China is home to the most dinosaur species in the world, with 341 species identified, and that number continues to grow as eight or nine new species are discovered each year.

Since the excavation of dinosaur fossils began, we have learned more about these extinct creatures. The first dinosaur skeleton in China was discovered by a construction worker while digging to build a dam. This dinosaur was named Yangchuanosaurus. It was a formidable predator, capable of taking down prey much larger than itself. In the Western Liaoning district, fossils of Sinosauropteryx were discovered; it is notable for being the first known dinosaur with primitive feathers. Other significant finds in this area include Beipiaosaurus and Archaeopteryx, making it a hot spot for dinosaur excavation. Chinese researchers have also unearthed exquisitely preserved fossils of small theropods. The Western Liaoning district, once resembling a peaceful lake, appears to have been the site of sudden, deadly volcanic ash rains that buried these creatures.

The Inner Mongolia Autonomous Region is known as the largest "dinosaur town" in China. Many dinosaur fossils have been discovered here, primarily of ceratopsians and ankylosaurs (both herbivorous dinosaurs). Fossils ranging from infants to adults have been unearthed. Lufeng County, located in the central part of Yunnan Province, gained fame for its dinosaur fossils in the 1930s, with the first discovery made in 1938. Lufeng is renowned for having the largest collection of dinosaur fossils, earning it the title "Hometown of Dinosaurs."

The altitude of Lufeng is 1,600 meters, and the region experiences a subtropical plateau monsoon climate. In 1995, a farmer discovered a dinosaur fossil and found an unusual arrangement: the heads of four dinosaurs were all facing east, marking a unique discovery in the history of dinosaur excavation. Lufeng is also notable for being the only locality where dinosaur fossils from two geological ages have been found at the same fault.

Zigong County in the southern part of Sichuan Province is referred to as the "Cemetery of Dinosaurs" and the "Former Residence of Dinosaurs," where many fossils, totaling hundreds of tons, have been unearthed. The dinosaur fossil stores in Zigon are characterized by their large quantity, diverse classifications, concentrated storage, and exceptional preservation, features that are rarely seen elsewhere in the world. In the 1920s, locals in Nanyang City found unusual stones that they called "stone gallbladders," "stone eggs," "stone pills," or "stone balls." Nanyang is one of the earliest areas in China where dinosaur egg fossils were discovered. To date, thousands of fossilized egg pieces have been unearthed, with sizes ranging from as small as hen eggs to as large as rice bowls. The eggs are primarily ovoid, with some exhibiting a rugby shape, and are preserved remarkably well.

In 1990, dinosaur fossils of Nuroaurus were discovered in a desert in China. This dinosaur was long and heavy—the largest in its area during its time. Dinosaurs disappeared about 65 million years ago due to a massive asteroid impact, which created clouds of dust and smoke that altered the climate, leading to the extinction of nearly all dinosaurs.

Creative Writing

Non-Fiction

Group 1

Beautiful Feathered Tyrant

Po Leung Kuk Choi Kai Yau School, Lee, Hoi Ki Sophia – 7

Yutyrannus was one of the most significant dinosaur discoveries in China's history. Yutyrannus huali meaning 'beautiful feathered tyrant' is from the Superfamily Tyrannosauroidea, the type Tyrannosaurus rex is in. Yutyrannus is classified in the Proceratosauridae kind. Three near-complete skeletons were claimed to be found in a quarry at Batu Yingzi in Liaoning Province, in northeastern China. They lived on Earth over 131 million years ago from the early Cretaceous period to the middle Jurassic period.

Yutyrannus were much larger in comparison to T-Rex, being 7.5 metres long and weighing around 1400 kilograms. They had four limbs and walked on their back legs. Each short arm had three fingers tipped with large claws. Known as bone-crushers, they had sharp banana-shaped teeth that were able to cut through meat. They also had large skulls which were 90 centimetres in length. There was a shallow crest that sat on their heads. Yutyrannus have feathers that cover several areas of the body. Their feathers were up to 20 centimetres long. They have a coat of filaments called "proto-feathers." This is the type of feathers Yutyrannus has. Due to the low-quality preservation, it could not be confirmed if the feathers were compound, broad or narrow type. Xu said, "From all the dinosaurs I found, Yutyrannus is the only gigantic dinosaur that has feathers". From what we know about it, Yutyrannus could not fly for sure because of its weight. Maybe its feathers were used to attract mates, or perhaps for keeping warm.

Yutyrannus were carnivores, which means they ate meat. They were apex predators, making them very powerful since they were at the top of the food chain. Given their arms were short, they had to hunt in groups to take down stronger and larger dinosaurs such as Brachiosuraus, a large long-necked dinosaur. They hunted their prey by using their long strong tails to swipe their target down. Then they used their sharp claws to tear the meat before eating it.

The discovery of Yutyrannus was published in Nature by a well known Chinese palaeontologist named Xu Xing of the Chinese Academy of Sciences in 5 April 2012. Even though he was never interested in paleontology he still discovered over 30 species. Since his discovery, he has been focusing on the transition between dinosaurs to birds. The Yutyrannus fossils are now part of the Zhucheng Dinosaur Museum and the Erlianhaote Dinosaur Museum collections. Hopefully soon, even more dinosaur fossils will be discovered in China.

Non-Fiction

Group 2

The Tales Of China's Dinosaurs

ESF Quarry Bay School, Au, Ching Yan Gabrielle – 11

Dinosaur fossils found in China represent an intriguing chapter in paleontological history. Previously unexplored by scientists and researchers. China showcases a myriad of newly discovered species and fossils, with over 343 named dinosaur species identified in late 2023. With a rich history and diverse ecosystems, China yields numerous fossils that provide insights into their evolution and ecology.

The history of dinosaur discoveries in China dates back to the 20th century. The first dinosaur fossil discovered in China was found in 1923, by a Chinese paleontologist named C.C. Young. The remains were excavated in Lufeng Country, Yunnan province, which is now recognized as one of the earliest sites for dinosaur fossils in China. Fossils of large dinosaurs were thought to be dragon bones in ancient China, with ancient texts describing large skeletons, most likely referring to dinosaur fossils. This idea is because of the cultural importance of dragons and the lack of knowledge about dinosaurs. There is no connection between dragons and dinosaurs. The direct translation for dinosaur from Chinese is 'fearsome dragon'. It came to Chinese from the Japanese translation of the Greek word for dinosaur, 'dinosauria', so it is coincidental that they seem related as they share a character, 'long', meaning dragon. Dragon representations were first discovered around 8,000 to 4,000 years ago, but it only became culturally important around 6,000 years ago. In May, 2024, over 400 dinosaur footprints from the early Cretaceous period were discovered,

An example of a dinosaur fossil found in China is the Gandititan cavocaudatus, which was found in a construction site in Ganzhou, Jiangzhou province. This dinosaur first appeared around 200 million years ago and this one is thought to be around 90 million years old. This skeleton was 40% complete, which is incredibly rare to find a skeleton in such a complete state. 6 cervical vertebrae, 2 partial dorsal vertebrae, and a complete sacrum preserved in articulation with the first caudal vertebrae and parts of the right pelvis was found. The neck and tail were 5 meters long, meaning that the whole body length altogether is 14 meters, which is considered relatively small for this species.

Another example of a dinosaur found in China is the Fujianvenator prodigiosus, which was found in south-eastern China, Fujian province. This dinosaur was quite bizarre! It was pleasant-like with elongated arms and legs and a long, bony tail. Its arms were built much like wings, but it cannot be determined whether the Fujianvenator could fly or not, but even if it could fly, it probably wouldn't be very good at flying based on its skeletal features. The Fujianvenator had a tibia twice as long as the femur, which is unusual among thenopods, which is a group including all carnivorous dinosaurs, including the Allosaurus and Velociraptor.

Chinese fossil discoveries have enhanced our understanding of the mass extinction of the dinosaurs. A study of 1,000 fossilized dinosaur eggs found from Shanyan Basin that 2 million years before their extinction, there was a large decline in biodiversity, which could have been caused by global climate change and volcanic activity that made the dinosaurs more vulnerable to the asteroid that caused their extinction.

China is a crucial area for fossil discoveries and ongoing research, revealing unknown tales and endless knowledge. The remarkable preservation of fossils found offers a much more accurate understanding of ancient ecosystems and dinosaurs. A theory suggests that the reason China has so many fossils is because they were preserved by sudden volcanic activity. As researchers and scientists dive deeper into the lives of these ancient creatures, we can only expect even more discoveries to come.

China's fossil discoveries have led to numerous paleontological collaborations from paleontologists and researchers worldwide. Collaborations usually include research, excavations and fossil hunting, in which collaborators share their knowledge, ideas and resources in hope of finding a skeleton and to gain new knowledge and insights about Chinese dinosaurs. Cooperations have significantly increased our understanding, stretching our knowledge on prehistoric life. As we discover and improve excavation techniques and new technology awaits us, the future of dinosaur research is advancing steadily. Some new technology includes 3D modeling and CT scanning, allowing scientists to examine fossils without damaging them. As we continue to learn about dinosaur fossils, we can now analyze and examine in greater detail, and to avoid damaging the fossils during the process successfully.

In 1993, an accidental discovery helped scientists and researchers learn so much! Some country folk were digging in XiaXia Country, Human Province, a place known for its rich cultural heritage, and found many black stones shaped like eggs, which they described as an ingredient in Chinese traditional medicine. Chinese medicine is also used to include animal fossils, also known as 'dragon bones'. According to traditional Chinese medicine, 'dragon bones' have a calming effect. While going through customs inspection, a Nanjing customs inspector discovered that the black stones were actually priceless dinosaur eggs. A team sent to analyze and examine the eggs found that the XiaXia Basin, which spans approximately 40 square kilometers, was where tens-of-thousands of dinosaur eggs were found, compared to the 500 eggs found globally.

There are many different states where dinosaur fossils have been discovered in different duties and provinces in China, but Dashanpu Middle Jurassic Dinosaur Fossils site, located in Zigong is one of the world's most renowned fossil sites. This site has uncovered thousands of fossils from over 200 different dinosaurs. This site uncovered a whole diversity and countless species. Their fossils are displayed in a museum called the Zigong Dinosaur Museum, which is one of the world's largest museums on dinosaurs showcasing Mid-Jurassic fossils. It is recognised by UNESCO as a key site offering in-depth information for geological and paleontological research.

New Tales of China's Dinosaurs

Kowloon Tong School (Primary Section), Chan, Yu Huen Lauren – 10

In the middle of China, where ancient landscapes whisper secrets of the past, a new chapter of the story of dinosaurs is unfolding. The rich fossil beds of China have become a treasure trove, revealing new species and shedding light on the lives of these prehistoric giants.

One of the most remarkable discoveries is the feathered dinosaur, a creature that bridges the gap between dinosaurs and birds. These historical fossils have magical imprints of feathers. It has made us understand more about evolution of dinosaurs. They show a progression of integumentary types from some simple fibers and feathers of modern aspect. The distribution of these features on the bodies of these animals is surprising in that some displaying large tail plumes, whereas others exhibit wing-like structures on both fore and hind limbs. The phylogenetic distribution of feather types is highly congruent with models of feather evolution derived from developmental biology.

When it comes to the most common dinosaurs, triceratops ha to be mentioned. It has isolated skulls that contribute to a significant portion of the census. Associated specimens of triceratops consisting of both cranial and postcranial elements that remain relatively rare. Its name came from having three horns on its head. With its horns, a parrot-like beak and a large frill, the triceratop's skull is one of the largest and most striking of any land animal. The horns could have been used to fend off attacks from other dinosaurs. They were mainly found in North America.Triceratops was unusual among ceratopsians in that its bony head frill was short and of solid bone; in other forms the frills were larger. Triceratops possessed a gigantic skull, and some individuals that had skulls which would place them among the largest of all terrestrial animals.

In addition to its three conspicuous horns, which were placed above each eye and on the snout, their skulls were adorned with numerous small spikes that bordered the margin of the skull. There were as many as 19-26 epoccipitals on the frill. Triceratops also possessed smaller hornlike projections on the jugal bones. The upper and lower jaws were lined with stacked columns of teeth, which appear to have been specialized for shearing. The front of the mouth formed a beak, which may have been used to crop vegetation. Moreover, most of the skull was covered by indentations made by blood vessels; similar in indentations are found under the keratinous beaks of living birds. This suggests that the dinosaur's entire head, aside from the cheeks and the area around the nostrils, was covered in keratin while it was alive. In many living birds, keratin is very colorful, which suggests that the skulls or triceratops may have been vividly colored as well.

Another groundbreaking finding of scientists was the most complete skeleton of deinonychus ever found was named Hector, and now it belongs to a private collector. This dinosaur's name is quite a mouthful! Discovered in Brazil in 2021, it is the rarest dinosaur in the world, and lived between 70 and 80 million years ago. Paleontologists think it was toothless. This dinosaur had a large, sickle-shaped talon on the second toe of each foot. When it was not in use, the claw was held off the ground to keep it sharp. The species name – antirrhopus – means 'counterbalancing'. This is because deinonychus' tail was long and stiff, helping to balance the animal's weight. Deinonychus was a feathered dinosaur with terrible claws, hence its name. It had three claws on its 'hands' and a large talon on the back legs. It

was a carnivore. They lived during the early cretaceous period 115 to 108 million years ago. This dinosaur was really like a bird. Deinonychus was bipedal, meaning it walked on two legs, and it was fast, had a large head with sharp teeth and a flexible neck.

If you wonder the kids' favorite kind of dinosaurs, it would probably be the tyrannosaurus rex. The tyrannosaurus rex was massive, measuring roughly 5 feet in length. The skull alone weighed up to 600 pounds. The jaws were powerfully muscled and the huge mouth contained two rows of serrated and pointed teeth. A tyrannosaurus rex had large wide-set eyes, which scientists think allowed it to have exceptional depth perception and to see long distances. Tyrannosaurus rex, the 'bone crusher' compared to other theropod dinosaurs, had the largest, most robust and the most powerful skull. The tyrannosaurus rex was one of the largest and most fearsome carnivores of all time. Although tyrannosaurus rex is one of the most renowned dinosaurs, few of the fossil specimens recovered by paleontologists are complete.

Plateosaurus was among the earliest dinosaurs to attain a relatively large size, growing up to about 8 metres long. The name plateosaurus means "Broad lizard," which describes the dinosaur's broad, or large body. It was more massive than earlier dinosaurs and had bones that were stocky and thick. Its hind legs were stout and strong enough to hold the body's weight, however, and plateosaurus presumably stood on the two hind legs to reach the tops of trees. Plateosaurus was one of the first large and heavy dinosaurs. It belonged to a group of dinosaurs called the prosauropods.

These discoveries remind us of the ever-changing nature of life on Earth and the importance of preserving our natural heritage. As we continue to explore and learn from the past, we gain valuable insights into the present and future to the planet. The New Tales of China's Dinosaurs are a testament into the enduring legacy of these ancient giants and the endless curiosity that drives us to uncover the mysteries of our world.

New Tales of China's Dinosaurs

Kowloon Tong School (Primary Section), Chow, Tsz Chiu – 11

In the heart of China, where ancient history intertwines with modernity, the tales of dinosaurs echo through the ages. The discovery of fossils in the rich, fertile soils has sparked a renaissance of interest in these magnificent creatures, breathing life into stories that have captivated both young and old. These new tales not only illuminate the prehistoric past but also weave in the vibrant tapestry of Chinese culture, inspiring wonder and curiosity.

Imagine standing on the banks of the Yangtze River, where the land whispers secrets of a time long gone. Paleontologists, armed with tools and an insatiable thirst for knowledge, meticulously excavate layers of earth. Each scoop of soil reveals a treasure trove of bones, remnants of titanic beasts that once roamed the lush landscapes. As they brush away the dust of millennia, the past springs to life, and the stories of these dinosaurs come roaring forth.

China's dinosaur discoveries are not merely about the bones; they are gateways to understanding the delicate dance of evolution. The Liaoning Province, known for its feathered dinosaurs, paints a vivid picture of how these creatures adapted over time. Here, the discovery of the ⋆Microraptor⋆, a small, feathered dinosaur, has stirred imaginations. With its four wings, it glided through the dense forests, a master of the skies. This revelation challenges our preconceived notions of dinosaurs, showing that they were not just lumbering giants but agile, dynamic beings.

Moreover, the tales extend beyond the realm of science. In local folklore, dinosaurs have found their place alongside dragons, symbolizing power and majesty. As children listen to stories of the ⋆Yutyrannus⋆, a feathered relative of the infamous T. rex, they learn about bravery and resilience. This dinosaur, believed to have lived in the warm climates of ancient China, embodies the spirit of the land—fierce yet nurturing. It serves as a reminder that even the mightiest can be gentle, a lesson that resonates through generations.

The narrative of dinosaurs in China also intertwines with the environment. As climate change threatens our planet, these ancient stories remind us of nature's fragility. The ⋆Sinosauropteryx⋆, one of the first feathered dinosaurs discovered, showcases the complex relationships within ecosystems. Fossil evidence suggests that these creatures coexisted with a variety of flora and fauna, forming a web of life that thrived together. This interconnectedness highlights the importance of conservation, urging us to protect our planet for future generations.

As we delve deeper into these tales, the role of technology becomes apparent. Advanced imaging techniques and genetic analysis provide new insights into dinosaur biology and behavior. For instance, scientists have unraveled the mystery of their colors, discovering vibrant patterns that once adorned these magnificent creatures. This leap into the future, driven by curiosity and innovation, breathes fresh air into our understanding of the past.

In the bustling cities of China, museums showcase these discoveries, inviting visitors to embark on a journey through time. Lifesize replicas of dinosaurs tower above, creating an atmosphere of awe and wonder. Families flock to these exhibits, eager to learn about the giants that once roamed their homeland. Interactive displays engage the young and old alike, igniting a passion for paleontology and the natural world.

The tales of China's dinosaurs are a vivid tapestry of science, culture, and environmental awareness. They remind us that the past is not a distant memory but a living narrative that shapes our present and future. As we continue to uncover the mysteries of these ancient beings, we must also heed their lessons. The tales of dinosaurs teach us about adaptation, resilience, and the interconnectedness of life. They urge us to cherish our planet and preserve its wonders for the generations yet to come.

In conclusion, the new tales of China's dinosaurs are not mere stories; they are vibrant accounts that invite us to explore, learn, and reflect. They embody the spirit of discovery, urging us to dig deeper—both literally and metaphorically—into the rich layers of our world. As we unearth the past, we pave the way for a brighter future, one where the echoes of these magnificent creatures continue to inspire generations.

China's Contribution to Paleontology: The Origin of Birds

St. Joseph's Primary School, Tam, Ching Huen Lucas – 12

China's Discovery is Ending the Debate of Birds' Origin
Chinese fossil sites have given the world more than forty new dinosaurs and crucial information about how they lived and interacted with other creatures– unveiling multiple numerous mysteries about the dinosaurs. One controversial topic has been clarified by paleontologists and scientists in recent years-The origin of birds. This winter, I visited the Paleozoological Museum of China in Beijing. I was fascinated by the amazing fossils that the scientists had uncovered, particularly the feathered dinosaur Microraptor. As a Chinese dino lover myself, I am thrilled and proud to have witnessed one of the most important palaeontologic contributions to the world.

Remarkable Dinosaur Fossil Sites and Noteworthy Dinosaur Species Discovered
China boasts a wealth of geographically diverse fossil sites throughout the country. Among these, the Yixian Formation in Liaoning Province stands out for its outstanding fossils, which has charmed scientists for years. This site has held renowned species such as Sinosauropteryx, the first dinosaur discovered with evidence of feathers, and Microraptor, known for its unique feathered anatomy that suggests gliding capabilities. These discoveries have provided invaluable information to the evolutionary link between dinosaurs and birds, particularly through the evidence of feathers found in these fossils. Also, the Jiufotang Formation, has produced remarkable finds that enhance our knowledge of Cretaceous dinosaurs. In the West Region, the Xinjiang Province further enriches our understanding of prehistoric life, revealing a range of dinosaur species through its fossil discoveries. Additionally, the Gobi Desert has proven to be a treasure trove for dinosaur fossils, contributing significant discoveries such as Yutyrannus, a large feathered dinosaur that challenges previous assumptions about the size of feathered dinosaurs. Collectively, these fossil sites emphasize China's substantial contributions to paleontology.

Revealing the ancestry of birds
The richness of fossil naturally explains China's numerous contributions to paleontological discovery, for instance, unveiling the origin of birds. There are two theories-the cursorial and arboreal. Some people believe the former theory that cursorial dinosaurs evolved into birds by running quickly and gradually developing the ability to fly! The arboreal theory, though, is evidenced by the fossils found in China. The ancestors of birds, such as Microraptor, lived in trees, and could glide through trees by using four wings. Ancestral birds like Microraptor, residing in trees, exhibited gliding abilities using four wings. Over time, the forelimb wings of the ancestral birds became more evolved, and gradually replaced the hind limb wings. China's Sinosauropteryx, Microraptor and Yutyrannus fossils have sharply shown critical evidence that feathered arboreal dinosaurs were related to the origin of birds. Microraptor's distinctive anatomy, featuring long feathers and an aerodynamic physique, answering longstanding questions regarding the development of flight among smaller

dinosaurs measuring 40-60cm. These discoveries have presented compelling evidence that modern birds are closely related to certain arboreal dinosaur lineages and are descendants of these extinct species. Although some people advocate for the cursorial theory, I find the "gliding to flying" idea more convincing than the "running to flying" one. Together, those findings from the Yixian Formation and the Gobi Desert continue to captivate scientists, also proving theories of how the dinosaurs evolved into birds, offering a new look at an amazing side of our planet's paleontological history and at the same time providing essential scientific information to researchers around the world.

Xu Xing's contribution to the global paleontological community

China also has a contribution to the global paleontological community. Benefitted by the rapid economic growth and a growing emphasis on science education, many new museums have been constructed, which have created more chances for the employment of graduates of paleontology. Universities like Peking University and Nanjing University still maintain robust paleontological programs, while new programs have been established and flourished in other universities in paleontologically resourceful provinces such as Yunnan, Liaoning, Anhui and Shandong. During this period of time, China has expanded its inventory of dinosaurs: from the smallest dinosaur in China to the longest necked dinosaur in the world, all because of elite paleontologists that these outstanding universities have nurtured. Among these talents, one iconic figure stands out— Xu Xing. Xu has dedicated his life to paleontology, unearthing and naming over sixty new dinosaurs in China at a breakneck pace. Up to now, he has identified more dinosaurs than any other living paleontologist. Notably, he was even the one who discovered the fossil of the smallest dinosaur in China— Microraptor's fossil! Moreover, Xu has shown that birds arose from the dinosaurs, by uncovering his "feathered friends" Sinosauropteryx, Microraptor and Yutyrannus, ending decades of debate. And he has bucked 150 years of accepted wisdom by declaring that the fabled genus Archaeopteryx is not the oldest known bird, but rather belonged to a group of dinosaurs removed from the avian line. I too have listened to Xu's talks, and I was impressed by his humor and articulated speech that allowed students to appreciate the efforts of paleontologists. Xu is truly one of China's greatest contributors to the global paleontological community and an outstanding paleontologist to everyone.

Hong Kong Discovers Dinosaur Fossils Too!

In October 2024, dinosaur fossils were discovered in Hong Kong for the first time, bringing immense joy to dinosaur enthusiasts like myself. Hong Kong's rich fossil and geological deposits have been a subject of interest for decades, with paleontologist Fion Ma Wai-sum revealing that as early as 1920, geologists had unearthed a fossil of a marine species officially named Hongkongites hongkongensis in 1923.

Future for Dinosaur Paleontology

In conclusion, China is a key contributor in dinosaur paleontology, advancing our understanding of these ancient creatures through its rich fossil deposits. The ongoing research in places like Liaoning and Xinjiang continues to discover amazing discoveries, enhancing our knowledge of dinosaur evolution. Furthermore, by placing conservation and international collaboration first, I show confidence towards China to ensure that future generations will benefit from the knowledge discovered by China's dinosaur fossils, continuing to unravel the mysteries of the dinosaurs.

The Majestic Dinosaurs of China: A Paleontological Exploration

St. Paul's Co-educational College Primary School, Chong, Sau Ling – 12

China's dinosaurs vary from the majestic Huaxiazhoulong dinosaurs, to the 240-million-year-old Dinocephalosaurus dinosaurs. The knowledge growth of palaeontologists has been growing rapidly since the 20th century, with the help of advanced technology and the variety of geological resources provided by the government. This has allowed for the discovery of new species and a deeper understanding of the ancient ecosystems in China. These new tales of China's dinosaurs continue to fascinate and educate people around the world.

One of the most unique dinosaurs currently found was the Yinlong dinosaur, a small ceratopsian dinosaur. Its name's original meaning was to describe how small it is and how easily it can be hidden (the word "yin" in Cantonese is defined as hidden"). The Yinlong dinosaur was found in 2004, in the Middle-Late Jurassic strata of the Shishugou Formation located in Xinjiang Province, China. The Yinlong dinosaur could only reach lengths of 1.2 meters in length (as long as a 7- to 8-year-old child) and can only weigh up to 10 kg (approximately as heavy as a 1-year-old child). Yinlong dinosaurs have deep and wide skulls, with three long limbs, also suggesting that they are herbivores, since they do not have any characteristics to catch prey on their own, such as sharp teeth and sharp claws. Also, the species was able to survive for long since they could reach food supplies that the other bigger and taller dinosaurs could not reach and had less competition for food. Yinlong dinosaurs likely thrived in their environment due to their ability to access food sources that larger dinosaurs could not reach. Their herbivorous diet and lack of predatory features also contributed to their survival over time. Their unique physical characteristics allowed them to coexist with larger dinosaurs by accessing different food sources. This adaptation likely played a key role in their long-term survival in their ecosystem.

Another kind of dinosaur that one might feel fascinated about is the Mamenchisaurus dinosaur, a long-necked sauropod dinosaur. Their fossils were first found in the Sichuan Basin and Yunnan Province in China. They are mostly famous for their incredibly long necks, which take up to half their body length. They are approximately 20 meters in length (approx. 10 doors), and they weigh about 12,000 kilograms (about 200 Asian adults). The Mamenchisaurus dinosaur has a few species itself, including the Mamenchisaurus hochuanensis, a slightly smaller version; the Mamenchisaurus sinocanadorum, an undescribed species; the Mamenchisaurus anyuensis, a rather slender species compared to the others; and the Mamenchisaurus youngi, the species with the longest neck, which allows them to reach higher vegetation. The Mamenchisaurus (in general) are also herbivores, since they have long necks to reach the leaves from the high trees. The long neck of the Mamenchisaurus also served as a defence mechanism against predators, allowing them to keep a safe distance while feeding. Despite their massive size, these dinosaurs were believed to have been relatively peaceful creatures that lived in herds for protection. Their long necks also helped them to regulate body temperature by allowing for efficient heat dissipation.

The Saurornithoides, a type of troodontid maniraptoran dinosaur, were first found in Inner Mongolia. They were one of the most fierce and strong predators in the world of dinosaurs. They had excellent hearing and sight, enabling them to be able to catch prey easily and keep track of the footsteps of their food source. They are small in size and have a bird-like structure skull and had a beak. Their length can reach up to 2.3 meters, and they have large eye sockets and stereoscopic vision, allowing them to have clear stereoscopic vision. They are carnivores, which hunt for small reptiles and smaller mammals; these include lizards, frogs, etc. They also often work in groups to help each other, proving that they are smart creatures that learnt how to use teamwork to help themselves. Their intelligence and social behaviour have been studied extensively by researchers, revealing their complex communication and problem-solving skills. Despite their small size, they are fierce predators in their ecosystem, demonstrating adaptability and cunning in their hunting strategies. Researchers have also observed that they are capable of using tools to aid in their hunting, showcasing their advanced cognitive abilities. This combination of intelligence, social behaviour, and hunting skills makes them a fascinating species to study in the wild.

The Huaxiazhoulong shouwen is a newly discovered species of dinosaur that lived during the Late Cretaceous period. These dinosaurs were herbivores, feeding primarily on plants and vegetation. Fossils of the Huaxiazhoulong shouwen have been found in China, specifically in the Henan Province. They were estimated to be around 6 to 8 meters in length and exhibited social behaviours, such as living in herds for protection and mating purposes. It is famous and unique for its armoured body, looking like it was filled with spikes on the outer side. The discovery of the Huaxiazhoulong shouwen sheds light on the diverse range of dinosaur species that existed during the Late Cretaceous period. This new finding adds to our understanding of prehistoric ecosystems and the evolution of herbivorous dinosaurs. The presence of social behaviours in the Huaxiazhoulong shouwen suggests a complex social structure within the species, providing insight into their interactions and dynamics. Further research on this dinosaur species could reveal more about their behaviour and adaptation strategies in their environment.

In conclusion, the diverse range of dinosaurs discovered in China, from the armored Huaxiazhoulong to the long-necked Mamenchisaurus and the agile Saurornithoides, highlights the richness of prehistoric life. The advancements in paleontology, coupled with China's unique geological resources, continue to unveil new species and deepen our understanding of ancient ecosystems. As research progresses, these findings will undoubtedly enhance our knowledge of the evolutionary history and ecological dynamics of dinosaurs.

Creative Writing

Non-Fiction

Group 2

The History and Culture of Chinese Dinosaurs

Shanghai Singapore International School, Wang, Katherine

In the depths of time, millions of years ago, dinosaurs ruled the earth, and the land we now call China was no exception. From the majestic plains to the dense forests, these ancient creatures thrived. Today, China's rich history of dinosaur fossils not only reveals the secrets of a distant past but also inspires a culture of awe and curiosity. Like pages in an ancient book, each fossil unearthed tells a story of power, survival, and the incredible evolution of life.

China is often called a "dinosaur fossil treasure trove," and for good reason. In the rocky soils of provinces like Liaoning and Sichuan, scientists have uncovered some of the most remarkable dinosaur fossils in the world. These fossils include giant herbivores like Mamenchisaurus, whose neck stretched longer than a school bus, and fierce predators like Yangchuanosaurus, whose sharp teeth could tear through anything in its path. In Liaoning, the discovery of feathered dinosaurs, such as Microraptor, changed how the world views the connection between dinosaurs and birds. These creatures, once thought of as scaly beasts, may have been the first to soar through the skies, paving the way for the birds we see today.

But Chinese dinosaurs are not just relics of the past; they are deeply woven into the fabric of Chinese culture. From ancient myths to modern museums, dinosaurs have fascinated people across generations. The Chinese dragon, a symbol of power and wisdom, may have been inspired by the discovery of dinosaur bones long before science could explain them. Farmers, upon unearthing massive bones, believed they had found the remains of legendary dragons. These "dragon bones" were often ground into powder and used in traditional medicine, creating a fascinating blend of mythology and paleontology.

The preservation of Chinese dinosaur fossils is also a story of Earth's natural artistry. Volcanic eruptions, ancient lakes, and layers of sediment worked together over millions of years to create perfect conditions for fossilization. Imagine a dinosaur taking its final steps near a calm lake, its body eventually buried under ash and mud, only to reemerge millions of years later as a fossil in the hands of a modern scientist. This process is nothing short of a miracle, turning bones into stone and moments into eternity.

Today, Chinese dinosaur culture is alive and thriving. Museums across the country, such as the Zigong Dinosaur Museum in Sichuan, showcase these incredible fossils to eager visitors. Scientists and students alike dive into the mysteries of dinosaurs, using advanced technology to recreate their appearance, behavior, and even their sounds. Meanwhile, books, films, and artworks inspired by Chinese dinosaurs continue to captivate imaginations. These efforts not only honor the past but also remind us of the importance of protecting the natural world, for the fossils we find today are the result of nature's care over countless ages.

In the end, the history and culture of Chinese dinosaurs are like a symphony, blending the past, present, and future into a single story. These ancient creatures may no longer walk the earth, but their legacy roars louder than ever, reminding us to explore, preserve, and marvel at the wonders of our planet.

New Dinosaur Discoveries in China: Impact on Science

Yaumati Catholic Primary School (Hoi Wang Road), Lee, Sin Ying – 10

China, a land renowned for its rich cultural heritage and diverse geographical features, has once again captivated the world's imagination with the discovery of new species of dinosaurs. These remarkable finds not only expand our understanding of prehistoric life but also offer invaluable insights into the evolution of Earth's ecosystems during the Mesozoic Era.

The past few decades have witnessed a surge in paleontological discoveries in China, thanks to the relentless efforts of researches and the unique geological conditions that have preserved fossils in surprising details. From the Gobi Desert in the northwest to the lush forests of Yunnan in the south, China has proven to be a treasure trove of dinosaur fossils.

One of the most astonishing finds is the evidence of giant feathered dinosaurs in China. These discoveries challenge the traditional notion that only smaller, bird-like dinosaurs possessed feathers. For example, the discovery of a large theropod dinosaur, tentatively named "Gigantoraptor", suggests that even some of the largest predators of their time were likely covered in a downy layer, hinting at a potential evolutionary link between dinosaurs and modern birds.

China has also yielded unusual examples of herbivorous dinosaurs, including giants such as sauropods. Recent excavations have revealed new species of these long-necked, long-tailed giants, adding to our knowledge of their diversity and adaptation strategies. These discoveries include species with unique features like unusually long necks or specialized teeth structures, providing clues to their diets and habitats.

Another exciting area of research is the discovery of armored dinosaurs, commonly referred to as ankylosaurs. These heavily fortified herbivores sported rows of spikes and plates along their backs, making them formidable defenders against predators. Recent finds in China have uncovered new species of ankylosaurs, shedding light on the evolution of their defensive armor and their role in the ecosystems of the time.

These new discoveries in China are having a profound impact on the field of paleontology. They are helping scientists to refine our understanding of dinosaur biology, behaviour and evolution. For instance, the presence of feathers on giant dinosaurs challenges long-held assumptions about the evolution of flight and warmth regulation in dinosaurs.

Moreover, the sheer diversity of dinosaurs found in China suggests that the continent played a pivotal role in the global distribution of dinosaur species during the Mesozoic. This has significant implications for our understanding of how life on Earth responded to environmental changes and how those changes influenced the course of evolution.

The ongoing discoveries of new dinosaurs in China continue to rewrite the history of life on our planet. Each new species unearthed adds a piece to the complex puzzle of prehistoric life, revealing a world filled with awe-inspiring creatures and fascinating evolutionary stories. As researchers continue to explore the vast fossil beds of China, the future holds even more surprises and insights into the lives of these ancient giants.

Non-Fiction

Group 3

Unveiling the Past: The Discovery of a New Dinosaur Species in China

Creative Secondary School, Keco, Mato Roko – 11

Have you ever wondered how many dinosaur species there are? It's estimated that there are around 900, dating back to 235 -65 million years ago, and we are still discovering more. Discovering new dinosaur species is important, but why? Scientists need to learn how animals evolve, adapt, and eventually go extinct. Expert scientists in China are studying 59 species of dinosaurs. In June 2021, the Jiang Xi Geological Museum announced that it had found a new dinosaur species called Gandititan covacaudatus. This suggests the existence of an unknown eastern Asian titanosaur group, and the fossils date back about 90 million years.

The Discovery

The fossil was found in a construction site in the Ganxian district of Ganzhou. I could not find the group of paleontologists who discovered the fossils, but some teams involved in this discovery are the CUG, which is the China University of Geosciences, and the Jiangxi Geological Survey and Exploration Institute. Soon after the discovery, they started finding the rest of the dinosaur's bones and began restoration and research work a couple of months later.

Excavating a fossil is very dangerous as the fossil can break, but in a few steps, it is packed and shipped away. The first thing the paleontologists do is use awls, chisels, and rock hammers to get rid of the rock covering the fossil and see how much is left of it. After that, special glue is applied to the cracks and fractures of the fossil to hold it together. Next, a trench is dug around the fossil, so they rap the fossil in a few layers of bandage and let the bandage harden. Once it's done, it is ready to get shipped to the museum or to a lab for further research.

New species

What does the name gandititan covacuadatus mean? Well, the 'Gan' refers to the city it was found in, Ganzhou, and 'Titan' is a suffix commonly used to name titanosaurs sauropods. According to the research team, it was most likely that the Gandititan living environment was lush with vegetation since it was a herbivore and had an abundance of water sources. They also said that the abundance of dinosaurs is likely why the fossils they had found have been extensively preserved in the vicinity of the rivers and lakes all around the environment. What is truly fascinating about this dinosaur is its size. It has been measured that both the neck and tail are five meters, and the body is estimated to be around four meters in size. The complete body length of this dinosaur is only fourteen meters, which is strange since it is a Titanosaurus sauropod, and these sauropods are most often huge. It is believed that this dinosaur was light brown, red, orange, and a little bit of white, which to me sounds like a strange color combination for a dinosaur. If you are wondering what this dinosaur ate, then it was an herbivore. It used its not-so-long neck, which is five meters, to reach up high to the trees and eat all the nice leaves. While I believe the social behavior of this dinosaur was very high, like it loved to just chill with its pac,k munching down on some leaves, I cannot find anything that says about its social behavior.

Importance of Discovery

Why do we study dinosaurs so much? Well, the answer might shock me like it did to me. Scientists study dinosaurs because the fossils from them can help us understand what it was like millions of years ago, like what the weather was like and what other animals were alive at that time. It also helps us understand evolution, how the other animals changed, and how they became extinct. By studying fossils, we can also figure out if any animals nowadays are related to dinosaurs, such as birds and reptiles. It also helps scientists figure out how old rocks are, and scientists can find out if any big changes happened to Earth back then, like changes in land and climate. One final reason why it is important to study fossils and dinosaurs is that people love learning about the fascinating creatures that once roamed the earth and became the biggest empire in the history of the earth. The discovery of the Gandititan fossils tells us that there are many more dinosaur species left deep inside the earth's layers and solid ground beneath our feet.

Conclusion

So, in conclusion, in my opinion, this dinosaur is very interesting, fascinating, and mind-blowing, given its small size and how the fossils were found. But enough about the dinosaur, I love how interesting it sounds to excavate a fossil and be in the lab studying dinosaur fossils and estimating the size, habitat, what it eats and how long ago the species lived. The most interesting thing about dinosaurs, except for their size, is how they were found on construction sites. It is really lucky to find a fossil like that. A funny thing for me is that we have only discovered around nine hundred species of dinosaurs, and I just cannot imagine how many more we will discover, maybe tens, hundreds. All those findings might come, but everything takes time, so we have to be really patient and careful to find new species because the bones of dinosaurs can be anywhere, so keep a lookout for them. If you're lucky, you might just find a new species . Some things to say about finding fossils and species. Everyone can do it with eyes wide open and patience. I just can't wait to hear more discoveries about other species.

Links

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New Tales of China's Dinosaurs

Diocesan Girls' School, Ng, Sum Lui – 16

China is a significant global epicenter for fossil hunting, with more than 300 species of dinosaurs discovered and identified in different parts of China, the most of any country in the world. The discoveries include the world's first clearly feathered dinosaur, the Sinosauropteryx, 40 dinosaur species found in Liaoning, 24 of which were winged reptiles, and the recently discovered titanosaur in Jiangxi. There has been much excitement and anticipation surrounding the further discoveries in China, many hoping that it would highlight the country's contribution to paleontology.

Significant scientific discoveries in China can be dated back to the 1930s, when the Lufengosaurus' fossils were discovered in Yunnan. This discovery marked the beginning of China's prominence in the field of paleontology and was a crucial step in understanding the country's rich fossil record. Since then, many more different species have been found in different parts of China. One of the species is the Sinosaurpteryx, discovered in the 1990s. This finding was significant not only because it was one of the first well-preserved dinosaur fossils found in Liaoning, but also because it provided evidence supporting the theory that dinosaurs evolved from birds, China's rich geological history has enabled the Chinese to find fossils from different periods. Along with good natural fossil preservation conditions, many of China's fossils exhibit great detail. China's fossil discoveries have reshaped how we understand dinosaurs. With the large amount of evidence found underneath the land of China, scientists could begin to link the evolutionary relationships between dinosaurs and modern day animals.

The Liaoning Province is a hotspot for dinosaur fossils due to important transitional fossils. These fossils bridge gaps in evolutionary history, especially in terms of flight of dinosaurs. Many dinosaur fossils in the Liaoning Province are found with evidence of feathers. This is extremely rare in other parts of the world, since biodegradable material like flesh and feathers are not able to be preserved in fossils like bones are, but the unique conditions of the Liaoning Province"s geological layers allow people to gain insights into the ancient birds millions of years ago. Liaoning Province has attracted paleontologists and researchers from around the world, leading to extensive international collaborations in fossil research. This global cooperation has fostered the exchange of knowledge, expertise, and resources, further enhancing the scientific significance of the region. Aside from the Sinosauropteryx, another key find is the Microraptor, a small, feathered dinosaur with four wings, discovered in 2000. It was speculated by paleontologist Xu Xing that it could have glided with all four limbs. Like many dinosaurs found in Liaoning, the Microraptor sheds light on the evolutionary relationship between dinosaurs and birds, including the origin of feathers. Dinosaurs in the region imply that modern day birds are perhaps the descendants of many of the dinosaurs found in Liaoning.

A recent titanosaur discovery sparked excitement in the Chinese community. This titanosaur was named Jiangxititan ganzhouensis, which was an animal that lived during the Cretaceous Period, around 72–66 million years ago. As the name suggests, the fossils were discovered in Ganzhou City, in the Chinese province of Jiangxi, in the Nanxiong Formation, close to Tankou Town. This dinosaur is known from several articulated vertebrae with ribs. This dinosaur would have had a long neck and relatively shorter four limbs that stood on the

ground. In addition to the few known titanosaur fossils in China, the discovery of a titanosaur in Jiangxi would advance knowledge of the region's sauropod dinosaur diversity. Not only that, but the examination of a titanosaur specimen can reveal important details about Jiangxi's environment during ancient times. The skeleton will provide information about behavior and what the dinosaur eats, enhancing people's knowledge of the area's prehistoric ecosystems.

China attracts dinosaur and paleontology experts from all over the globe to collaborate with local experts. China has created a hub of information sharing and resource sharing by actively participating in scientific cooperation with experts worldwide. Paleontologists in China have been able to collaborate on research initiatives and expeditions thanks to this culture of cooperation. Also, government funding and support plays a big role in the development of paleontology in China. Through financing the construction of infrastructure and preserving of fossil sites, the Chinese government has shown great interest to advancing paleontological study. Because of this encouragement, paleontologists are encouraged to go more to new places and investigate in areas untouched previously. People are excited in future discoveries of dinosaur fossils in China because the land of China is massive and has so much potential. Many remote areas in China are yet to be explored. Continued fossil discoveries may impact our understanding of prehistoric life by revealing exciting details about prehistoric animal behaviours and even extinction events. By dating the fossils, scientists can locate extinction events in the periods of prehistory.

China is a significant global epicenter of fossil-hunting because of its rich paleontology history and its unique fossil preservation conditions. With various species of feathered dinosaurs discovered in Liaoning, China uncovered the possible evolutionary link between dinosaurs and modern day birds. The new discovery of the Titanosaur has also sparked excitement in the Jiangxi Province, because it can reveal details about the lives of titanosaurs and sauropods in prehistoric times. Many are interested in potential further discoveries in China because of the high potential the mass area of China has in finding new dinosaur specimens. China's fossil discoveries have greatly contributed to the world's understanding of paleontology with their large variety and great detail, and encouraged scientists and experts from around the world to collaborate with China. The significance of exploring China for new tales of dinosaurs is ongoing. It is highly likely that sooner or later, a new dinosaur will be discovered in China and spread discussions in the paleontological world.

Dinosaur Discovery In China

Harrow International School Hong Kong, Li, Tze-Hin Alex – 13

China is increasingly renowned for its technological advances. Yet until recently, what lived in the land of ancestral China is virtually unknown. It is therefore of great excitement to uncover the remains of dinosaurs which lived over hundreds of millions of years ago in the Crustacean and Jurassic periods, sealed inside the vast underground of China. These fossil findings stimulate interests to understand their evolution and the imagination of reincarnating these huge dinosaurs.

Hong Kong is well known as one of Asia's modern megacities. Can you imagine that dinosaurs once freely roamed over the land of where we currently call home? Though bone fossils had been discovered in sedimentary rocks in Port Island, Hong Kong during June and August this year, fragments of a large dinosaur were unearthed only months later. The dinosaur bones were found scattered, possibly due to tectonic plate movements and severe floods over the course of a hundred million years, not to mention the historic volcanic activities in Hong Kong. It is believed that the bone fossils excavated belong to sauropods or ornithischians, which are classified as vertebrates. Since the fossils have only recently been discovered, there is a high chance that districts like Sai Kung and other areas of Port Island hold more dinosaur fossils.

Dinosaur fossils in Hong Kong, however, are incomparable against the hoard of elegant fossils excavated in Yunnan province about two years ago: a total of more than four hundred sets. These fossils date back even earlier to the Jurassic period, up to 500 million years ago. This is a hundred million years older than the fossils discovered in Hong Kong. The Yunnan fossils include Gangtoucunia aspera, similar to jellyfish. Though this species is not even close to being a dinosaur, it indicates that the soil in and near Yunnan is a place rich in dinosaurs because of the soil's conditions. The anaerobic condition limits the presence of bacteria which normally degrades soft tissues in fossils. According to Dr. G. Zhang, this soil condition is ideal for the preservation of dinosaur remains. A similar case is shown in China's Jurassic Park, Lufeng basin, where a Caudipteryx fossil, was "perfectly preserved in volcanic ash," according to Pollard of the New York Post. This led to over 120 complete dinosaur fossils unearthed and over 400 still buried underground, hence given the name of 'Jurassic Park'. The discoveries benefited not just the scientific community, but also the economy of Lufeng county with over 1.5 million visitors during COVID-19. More dinosaur fossil finds may be expected in Yunnan.

The dinosaurs discovered in China were enormous species. It is interesting to ponder how they grow to such size. What was their habitat and what did they eat? Growing to such a large body size had many causes and effects. The climate during the Triassic, Jurassic and Cretaceous period was more than suitable for herbivore dinosaurs to grow because of abundant plant life, including fragrant pine trees, Ginkgo balboa (a tree type), and moss. The abundant plant life allowed herbivore dinosaurs to grow large which helped them defend against carnivores. As it turns out, carnivores such as the T-Rex and the Spinosaurus dined on herbivore dinosaurs, just like dogs eating dogs. Carnivores also need to grow large to catch their prey. This leads to a cycle of dinosaurs growing larger and larger. The theory of dinosaurs eating their own species has evidence to support it. A recent excavation revealed a

tyrannosaurus, about 7 years old, caught two bird-like dinosaurs called citipes as its last meal. The tyrannosaurus had an advantage: sharp teeth, which allowed them to bite "through bone and scrape off flesh," according to Dr. F. Therrien, while the citipes were only less than a year old. The combination of habitat and climate in ancestral China nurtures the herbivore and carnivore dinosaurs to grow to increasingly large size.

Now, what if I told you that we have a chance of bringing dinosaurs back to life? Surely this can only happen in the movie Jurassic Park, right? We have de-extincted a type of mountain goat. The DNA of the extincted mountain goat was extracted and implanted into the eggs of a live mountain goat, who would be the 'mother.' This experiment established a major scientific advance and the potential to recreate the 1993 movie in reality: cloning a dinosaur. Unfortunately (or fortunately), we have all the pieces but no instructions to clone a dinosaur. We have all parts of a dinosaur which include its tail, bones, soft tissue, and feathers, but we do not have a dinosaur's DNA, the information needed to define the features of a dinosaur. DNA has a half-life of just over 500 years, and can survive for up to 6.8 million years, yet these dinosaurs date back to over 65 million years ago. Thus, cloning a dinosaur using this method does not appear feasible in the near future.

An alternative approach, as paleontologist J. Horner suggested, is to "make evolution run backwards." Since we have many descendants of dinosaurs still living, such as birds and alligators, we can retrieve its embryo, and "somehow cull out its ancient evolutionary characteristics." In chickens, it involves breeding different dinosaur features that may not normally be in a chicken, such as teeth and tails. A more reliable choice are birds. Twenty-six years ago, a discovery in China proved that dinosaurs once had feathers, the beginning of an evolution chain to what we now call birds. The oldest "bird" we know is the Anchiornis Huxleyi, a species that lived during the dinosaur era. Most animals with feathers during the early Cretaceous period did not fly like modern birds but used the feathered arms to improve their basic motion like jumping higher, breaking, or running faster. These discoveries made in China were crucial to discovering the evolution of feathers, 16 years before other countries did. The idea of "making evolution run backwards" seemed unreliable at the time of theorizing. A few years later, however, a technology called CRISPR-Cas9 was developed. The complex idea involves utilizing any animal's immune system to reorganize DNA while human intervention directs what the sequence should be. Primarily, a type of virus is injected into the body, causing the immune system to form two strands of Ribonucleic acid, with one sequence matching the invading virus. The protein cast will be able to track the DNA because of the matching sequence, attaches and disables the virus DNA. Through human intervention, the RNA sequence can be used to target any type of DNA, by changing the RNA that tracks the DNA sequence. The critical part comes as CRISPR, which is an RNA sequence modified or made by humans, is incorporated into the DNA sequence that has been cut, while it attempts to repair itself. Our current technology empowers us to resurrect modern species such as the Passenger Pigeon. However, more research will be needed to resurrect ancient dinosaurs such as the T-Rex.

With the expanding finds of dinosaur fossils, we will learn more of what lives on the vast land of China in ancient times. As technology advances, we will discover even more the evolution of these large creatures and the climate and habitats that support them. We may even fulfill our knowledge of the similarities and differences between dinosaurs in ancestral China and those in other parts of the world. Perhaps we will even find ways to bring one of these dinosaurs back to life. But then again, do we really want to?

New Tales of China's Dinosaurs: The Fascinating Dinocephalosaurus

International Christian School, Hui, Nicolas – 12

Every kid loves dinosaurs, right? While we often see them in movies, there's so much more to discover about these incredible creatures! Recently, I learned about a fascinating dinosaur from China called Dinocephalosaurus, and I'm excited to share its amazing story. This dinosaur stands out among its ancient relatives, and its name means "terrible-headed lizard." How cool isn't it?

Unique Features of Dinocephalosaurus

One of the most striking features of Dinocephalosaurus is its incredibly long neck, measuring about 1.7 meters—that's roughly the height of a whole adult! The first fossils were unearthed in Yangjuan Village in China, where scientists found its bones in rocks dating back millions of years. Its long neck is often compared to that of a dragon, giving it an almost mythical appearance. This neck wasn't just for show; it played a crucial role in how this dinosaur lived and hunted.

Imagine Dinocephalosaurus gracefully swimming through the water, using its long neck to reach for food without much effort. It's similar to how a giraffe stretches its neck to nibble on treetops! With four limbs and large, flipper-like feet, Dinocephalosaurus was an excellent swimmer, growing up to 6 meters long! While it may not have been as massive as some dinosaurs like the T. rex, its length is certainly impressive.

Dinocephalosaurus primarily feasted on fish, using its sharp teeth to catch slippery prey. Picture it stealthily approaching a school of fish, its long neck making it blend right in! This clever hunting technique allowed it to enjoy a meal without scaring away its dinner.

Adaptation and Survival

Though Dinocephalosaurus might not have been the smartest dinosaur, it was incredibly well adapted to its environment. Living in the Middle Triassic period around 240 million years ago, it faced many challenges, including changing environments and competition for food. Yet, it thrived even with a relatively small brain! Its body was designed for aquatic life, using its flipper-like limbs to paddle through shallow coastal waters. It preferred warm, tropical seas, making it easier to hunt.

Scientists consider Dinocephalosaurus "remarkable" because it helps us understand the differences between land and sea animals. Learning about this dinosaur reveals how living beings adapt over millions of years, showing us the amazing ways dinosaurs evolved to survive.

Cultural Perspectives: Chinese Dinosaurs in a New Light

An intriguing aspect of dinosaurs is how the ones in China differ from those depicted in movies. In films, dinosaurs are often portrayed as gigantic, menacing beasts, like the roaring T. rex in Jurassic Park. But in reality, dinosaurs like Dinocephalosaurus were more like everyday animals, living peacefully alongside other species in ancient ecosystems, similar to modern-day elephants or whales.

While Western movies often portray dinosaurs as rampaging monsters, many were actually gentle creatures. Dinocephalosaurus, for example, used its skills to hunt for fish rather than terrorize other dinosaurs.

I like to imagine Dinocephalosaurus gliding through lakes, reminiscent of the Loch Ness Monster. What if it swam all the way from China to Scotland, evolving from a sea dinosaur to a lake dinosaur? That would be such a fun and imaginative tale! It's exciting to think about how species might travel and adapt to new environments.

The Importance of Dinocephalosaurus in Paleontology

Dinocephalosaurus has become a source of pride for China, attracting tourists and providing scientists with valuable insights into ancient life. Its unique adaptations offer clues about the evolutionary process and the diversity of life that once inhabited our planet. Studying such dinosaurs helps researchers understand how different species thrived in various environments.

This fascination with Dinocephalosaurus and other Chinese dinosaurs has sparked greater interest in paleontology, especially among younger students. Dinosaurs inspire a new generation of scientists and explorers through museums and educational programs. Kids are naturally drawn to dinosaurs, and learning about them can spark a lifelong passion for science!

Museums often showcase stunning displays of dinosaur fossils, teaching us about how these creatures lived. When you see a real fossil, it feels like a window into the past! The story of Dinocephalosaurus emphasizes the importance of paleontological research and the need to appreciate our natural history.

Dinocephalosaurus and Its Influence

This is the incredible dinosaur I have discovered so far. The world of dinosaurs is vast and full of wonders, and I cannot wait to keep learning about these amazing creatures. Each new discovery brings us closer to understanding the rich history of our planet, and I am thrilled for the adventures that lie ahead!

Every time we uncover fossils and learn more about species like Dinocephalosaurus, we gain valuable insights into Earth's past. Each fossil tells a tale of survival and adaptation. The more we learn about these ancient beings, the better we can understand life today.

For instance, scientists have also discovered fossils of other marine reptiles from the same era as Dinocephalosaurus, like Nothosaurus and Plesiosaurus. Studying these creatures helps researchers piece together the ecosystems of the time and how different animals interacted.

Conclusion

In conclusion, Dinocephalosaurus is a remarkable dinosaur that captures our imagination and showcases the wonders of evolution. Its long neck, flipper-like limbs, and clever hunting strategies highlight the diversity of life in the ancient seas of China. By studying such dinosaurs, we not only learn about their biology and behavior but also about broader themes of adaptation and survival.

The story of Dinocephalosaurus reminds us that our understanding of the past is always evolving. As new discoveries are made, we can look forward to even more exciting revelations about the ancient world. With each fossil uncovered, we get closer to uncovering the true story of our planet's history.

I am eager to see what the future holds for dinosaur research and what new adventures await us as we continue exploring this fascinating topic! Dinosaurs like Dinocephalosaurus remind us of the endless wonders in our world, and every discovery can spark our imagination and curiosity. So, let's keep exploring, and who knows what amazing creatures we'll uncover next!

New Tales of China's Dinosaurs

King's College, Ye, Pak Yin – 14

Dinosaurs— not particularly something one would associate with the word 'new'. These reptiles first appeared more than 240 million years ago. They then roamed the earth for 165 million years, and as if it were magic, abruptly disappeared like a puff of smoke. All that we're left with are the few lifeless skeletons of these once majestic beasts. Their remains eventually became one with the earth, hidden deep beneath the surface. By the 20th century, many of these fossils had been excavated and extensively studied. With the discovery of each and every fossil, a piece of the puzzle would be uncovered, giving us a slight glimpse of the kingdom lost in the past. Thirsty for more knowledge, paleontologists soon started turning their attention to the vast lands of China, where new tales (or rather tails) would be discovered.

The first Chinese dinosaur fossils were found in Jiayin, Heilongjiang in 1902. Ironically, they were not officially discovered by the Chinese, but rather by the Russians. The gigantic bones were first spotted by fishermen on the freezing shores of The Lake of Heilongjiang. The Russian soldiers across the Wusuli River quickly responded to the news by collecting the fossils for themselves. The news eventually spread across Russia, which finally led to a team of Soviet geologists conducting a series of researches between the years 1915 and 1917. Upon further investigation, the bones were discovered to belong to a new species of dinosaur from the hadrosaurus genus. They named the species Mandschurosaurus amurensis, meaning "lizard from Manchuria". The skeleton, which stood at 4.5 metres tall and up to 8 metres long, was later transported to a museum in Saint Petersburg. Although the fossil neither officially belonged to nor was it discovered by China, it was still a crucial point in Chinese paleontology nonetheless. The discovery of the fossil sparked curiosity among Chinese paleontologists. This marked the start of a new era for Chinese paleontology.

Shortly following the discovery, the Central Asiatic Expedition Team did a series of researches between 1921 and 1930. Major discoveries include a nest of dinosaur eggs found in 1923, a set of Euhelopus Zdanskyi and Tanius Sinensis fossils found in the same year, and multiple other fossils of various species. Amongst the team were some Chinese paleontologists. They learnt from foreign techniques and technology, modernizing paleontology in China. Paleontology gradually became popular amongst the people of China. During 1920 to 1937, professors Amadeus Grabau and Siguang Li nurtured the first generation of Chinese paleontologists in Peking University. Many students were even sent overseas to study paleontology. Amongst them were Yunzhu Sun and Zhongjian Yang, who founded the Paleontological Society of China in 1929. Chinese paleontology experienced an enormous decade-long boost from 1920 to 30. Progress was smooth and breakthroughs were made, until it came to a staggering halt in 1937.

In July 1937, Japanese soldiers further invaded the lands of Huabei. It was the start of the Second Sino-Japanese War. Research became sluggish. People and facilities had to migrate to the south, where it would be safe from gun fire. This included universities and laboratories. Additionally, the lack of government funding and civil unrest made discoveries difficult. Following said war was the Chinese Civil War, which only worsened the situation. Regardless, research pushed on. In 1938, the Lufengasarus was found. It was the first complete

and mounted skeleton of a dinosaur in China. 1949 marked the end of the Chinese Civil War and the establishment of the People's Republic of China. As the economy recovered, paleontology resumed its growth. With the newfound stability, Chinese paleontology blossomed into its modern state.

In the modern era, China has been considered one of the best places for dinosaur discoveries. The number of fossils in China seems to dwarf any other region, sitting on the throne as the country with the most dinosaur fossils. The Chinese Museum of Paleontology states, as of December 2023, 343 species of dinosaurs have been discovered and studied by Chinese paleontologists, with 8 to 9 new species adding to the number each year. Why does China have so many fossils? It's a combination of a variety of factors. Firstly, during the mesozoic era, China was neither underwater nor was it covered by ice and snow. Instead, China had a hot, hospitable environment, which nurtured a wide variety of dinosaur species. Secondly, unlike rainforests, which have acidic soil, China was not a forest, which means its soil was relatively alkaline. This resulted in better conditions for fossil preservation, which often does not preserve well in overly acidic conditions. Thirdly, China is the third largest country by area. Its landmass paired with the ideal conditions listed above play a big role in the number of fossils present within its borders. Now that you know China has a lot of fossils, the remaining question is: how easily can they be found? China generally has a relatively hospitable climate and easily navigable terrain. This makes it easy for researchers to explore China and dig up its fossils. In conclusion, China has many well-preserved fossils that are easily accessible. With all that said, what's next for Chinese paleontology?

As mentioned above, the first Chinese dinosaur fossil was discovered in 1902. To the average Joe that might seem early, but when you dig a bit deeper you will find that China was relatively late to the dinosaur game. The first ever dinosaur fossil discovered was in 1677, England. That's almost 300 years apart! If you look at the USA and its historical records, you will find that the first dinosaur fossil found there was in 1856, still 46 years prior to the one discovered in Heilongjiang. One of the reasons China was so behind was because it had been stuck in constant warfare, poverty, among other problems. This made China lag behind in paleontological advancements, leaving a huge part of China's fossils still lying deep beneath the ground. In recent years, the Chinese government has recognised the potential in paleontology, funding for research projects and education. Currently, China puts in 371 billion yuan of funding on science and technology, which is a gargantuan amount compared to many other countries. China's technology is also rapidly improving, ranking 11th out 133 countries in The Global Innovation Index. These technological advancements can help with paleontological research. Examples include X-ray computed tomography and 3D-laser scanning equipped with machine learning. These machines can efficiently analyse internal features of fossils, helping paleontologists with their research. In addition, China has actively been trying to increase the level of education and knowledge among its population of 14 billion people, especially the younger generations. With China's huge potential and growing capability to harness said potential, the number of breakthroughs will only ever increase. China's golden age of paleontology has just begun, and will only continue to shine brighter.

With China's relatively unexplored lands, massive amounts of funding, advancing technology and the ever increasing number of intellectuals, the possibilities of China's paleontology seems endless. As Napoleon once allegedly said, "China is a sleeping dragon; let her sleep, for if she wakes, she will shake the world." Maybe now is the time for the dragon to awaken. Let us all embrace and witness new tales of China's Dinosaurs.

Creative Writing

Non-Fiction

Group 3

Dinosaurs of China: impact and evolution

HKSYCIA Wong Tai Shan Memorial College, Cheung, Pak Hiu – 12

Introduction

The Mesozoic Era, spanning from approximately 252 to 66 million years ago, is often heralded as the "Age of Dinosaurs." This era is characterized by the emergence, diversification, and eventual extinction of these magnificent reptiles. Among the many regions of the world that contributed to the rich tapestry of dinosaur evolution, China stands out due to its varied geological formations, fossil-rich deposits, and significant paleontological discoveries. This essay aims to provide a comprehensive exploration of China's dinosaurs, focusing on their evolutionary history, notable fossil discoveries, implications for dinosaur biology, and their cultural significance within the rich context of Chinese heritage. Furthermore, it will discuss how the study of dinosaurs and their evolutionary adaptations informs and inspires modern technology.

Geological Framework and Paleoenvironments

Understanding the evolution and diversity of dinosaurs in China necessitates a thorough examination of the geological contexts in which these fossils were found. The Mesozoic is divided into three primary periods: the Triassic, Jurassic, and Cretaceous, each marked by distinct climatic and geological conditions.

Triassic Period: The Dawn of the Dinosaurs

The Triassic period (approximately 252 to 201 million years ago) was a time of recovery following the Permian-Triassic extinction event. During this period, dinosaurs began to emerge, adapting to a variety of ecological niches. The Late Triassic deposits, particularly in the Yimen Basin of Yunnan Province, have yielded some of the earliest known dinosaur fossils, such as Sinosauropteryx. These fossils indicate a gradual transition from earlier archosaurian reptiles to true dinosaurs, showcasing the complexity of evolutionary pathways.

Jurassic Period: A Time of Giants

The Jurassic period (approximately 201 to 145 million years ago) marked the zenith of dinosaur diversity. Fossil sites in Sichuan and Xinjiang provinces have uncovered remarkable specimens, including Mamenchisaurus, a long-necked sauropod with an exceptionally elongated neck. This adaptation reflects an evolutionary strategy to exploit high vegetation, emphasizing the role of ecological niches in shaping dinosaur morphology.

The Jurassic also saw the emergence of various theropods, characterized by their bipedal posture and carnivorous diet. The discovery of feathered theropods like Yutyrannus huali in the Liaoning Province provides critical insights into the evolutionary link between non-avian dinosaurs and birds, suggesting that feathers were not solely a characteristic of avian species but a feature that played a role in thermoregulation and display among many theropods.

Cretaceous Period: The Flourishing of Diversity

The Cretaceous period (approximately 145 to 66 million years ago) is often viewed as the pinnacle of dinosaur evolution. The fossil record from this period in China is particularly rich, with well-preserved specimens from the Jehol Biota, a unique paleontological site in Liaoning. This site has revealed a plethora of dinosaur fossils alongside early birds and mammals, providing a snapshot of a highly diverse ecosystem.

Notable Cretaceous dinosaurs from China include Sinoceratops, a ceratopsian with distinctive frills and horns, and Liaoningosaurus, a hadrosaur that showcases the evolutionary innovations among herbivorous dinosaurs. The co-occurrence of such diverse species underscores the intricate ecological interactions that characterized Cretaceous environments.

Feathered Dinosaurs: A Paradigm Shift

The discovery of feathered dinosaurs in China has revolutionized our understanding of the evolutionary history of birds. Fossils such as Sinosauropteryx and Microraptor have provided compelling evidence that feathers were used for insulation and display long before their adaptation for flight. This challenges the traditional view of feathers as a unique characteristic of birds, suggesting instead that they were present in various theropod lineages.

The implications of these findings extend beyond morphology; they invite further exploration into the behavioral ecology of these feathered dinosaurs. The presence of feathers may have influenced social dynamics, mate selection, and predatory strategies, thereby reshaping our understanding of dinosaur life.

Nesting Behavior and Parental Care

Fossilized nests and eggs from sites in China have offered profound insights into dinosaur reproductive behavior. The discovery of nesting sites belonging to theropods such as *Oviraptor* suggests complex parental care, as these dinosaurs exhibited brooding behavior akin to that of modern birds. The implications of these findings are significant, revealing that some non-avian dinosaurs may have engaged in nurturing behaviors, thereby indicating a level of social complexity previously unacknowledged.

Insights into Extinction Events

The fossil record in China also provides critical information regarding the mass extinction events that marked the end of the Cretaceous period. Geological evidence indicates that significant environmental changes, such as volcanic activity, sea-level fluctuations, and asteroid impacts, played a pivotal role in shaping the evolutionary trajectory of dinosaurs.

Studies of sedimentary layers in regions like the Nanxiong Basin have revealed patterns of biodiversity loss and recovery, offering insights into the resilience of ecosystems following catastrophic events. These findings enhance our understanding of the ecological dynamics that governed dinosaur populations and their eventual extinction.

Technological Inspirations from Dinosaurs

The study of dinosaurs extends beyond palaeontology and directly influences advancements in modern technology. Various aspects of dinosaur biology have inspired innovations across multiple fields, including robotics, materials science, and aerodynamics.

Robotics and Bio-inspired Design
The study of dinosaur locomotion has provided valuable insights for robotic engineers. By analyzing the movement patterns and structural adaptations of dinosaurs, researchers can create more efficient robotic systems. For instance, the bipedal locomotion of theropods has informed the design of robotic systems that mimic their agility and stability, enhancing robot mobility in various environments.

Materials Science: Learning from Nature
The structural properties of dinosaur bones have implications for materials science. The lightweight yet strong characteristics of dinosaur bone can inspire the development of new materials that combine strength and minimal weight. Research into the microstructures of these bones has led to advancements in the design of lightweight composites used in aerospace and automotive industries.

Aerodynamics: Evolutionary Insights
The features of feathered dinosaurs have also informed aerodynamic studies. The structure and arrangement of feathers in species like *Microraptor* can be studied to improve aerodynamic efficiency in aircraft design. Understanding how these ancient creatures managed flight can lead to innovations in the design of drones and other flying technologies.

Cultural Significance and Modern Implications
Dinosaurs hold a profound place in Chinese culture, where they have been interwoven into myths and legends for centuries. The earliest discoveries of dinosaur fossils were often misinterpreted as dragon bones, reflecting the cultural significance of large, formidable creatures in Chinese mythology. This historical interplay between paleontology and culture has fostered a rich narrative that continues to influence contemporary perspectives on dinosaurs. Today, China's paleontological heritage has gained international recognition, with institutions and museums dedicated to the study and display of dinosaur fossils. The government has invested significantly in paleontological research, recognizing its potential to boost scientific inquiry and promote tourism. Collaborative efforts with international institutions have further advanced the field, fostering a global exchange of knowledge and resources.

Conclusion
The dinosaurs of China represent a remarkable chapter in the evolutionary history of life on Earth. From the early theropods of the Triassic to the diverse ecosystems of the Cretaceous, the fossil record reveals a complex interplay of evolutionary adaptations, ecological dynamics, and cultural significance. The discoveries made in China continue to challenge and enrich our understanding of dinosaur biology, behavior, and extinction.

Moreover, the study of dinosaurs has far-reaching implications for modern technology, inspiring innovations in robotics, materials science, and aerodynamics. As paleontological techniques advance and new discoveries emerge, the potential for further revelations about China's dinosaurs remains vast. These ancient creatures not only provide insights into the past but also serve as a wellspring of inspiration for the technological challenges of the future.

In conclusion, the legacy of China's dinosaurs serves as a testament to the intricate tapestry of life that once roamed the Earth and the enduring fascination they hold in the collective human imagination. As we continue to explore the depths of paleontological knowledge, the lessons learned from these ancient beings will undoubtedly shape our understanding of both the past and the future.

Unearthing the Giants: The Remarkable Story of China's Dinosaurs

Kowloon True Light School, Leung, Mei Sze Mitch – 14

China has quietly emerged as the epicenter of global paleontological research over the past few decades. With its rich geological formations and an array of fossil beds, the country has become a treasure trove for scientists eager to understand the prehistoric world. Among the most exciting discoveries are the feathered dinosaurs of Liaoning Province, which have transformed our understanding of the relationship between dinosaurs and birds. Recently, the discovery of a new titanosaur species in Jiangxi has reignited the excitement surrounding China's dinosaurs, suggesting that many more incredible stories lie buried beneath the surface.

The story of China's dinosaur renaissance began in the late 20th century, when a farmer in Liaoning Province uncovered a remarkable fossil: Sinosauropteryx, the world's first clearly feathered dinosaur. This discovery, made in the 1990s, sent shockwaves through the paleontological community and shifted the perception of dinosaurs from scaly reptiles to more bird-like creatures. The name Sinosauropteryx translates to "the China dragon bird," symbolizing the blend of ancient reptilian characteristics with modern avian features.

Since then, paleontologists have uncovered over 40 dinosaur species in Liaoning, along with more than 24 species of pterosaurs—winged reptiles that soared through the skies of the Mesozoic era. These discoveries have not only expanded the known diversity of dinosaurs but have also provided crucial insights into their behaviors, habitats, and evolutionary trajectories. The feathered dinosaurs, in particular, have helped fill the gaps in our understanding of how birds evolved from their dinosaur ancestors, leading to a profound rethinking of the dinosaur-bird connection.

Liaoning Province, with its unique geological features, is a hotspot for dinosaur fossils. The region's sedimentary deposits, which date back to the Late Jurassic and Early Cretaceous periods, have preserved a wealth of information about life during the age of dinosaurs. The fine-grained sediments have allowed for the detailed preservation of feathers, skin impressions, and even the delicate structures of soft tissues.

Among the notable species discovered in Liaoning is the famous Microraptor, a small, feathered dinosaur with wings on both its arms and legs. This creature challenges traditional views of flight, suggesting that multiple evolutionary paths may have led to the development of powered flight in birds. Furthermore, the discovery of the well-preserved fossil of a feathered dromaeosaur has provided evidence of complex behaviors such as nesting and parental care, showcasing a level of social structure previously unseen in reptiles.

The significance of these discoveries goes beyond mere fascination; they have reshaped our understanding of the evolutionary history of birds. The presence of feathers in non-avian dinosaurs indicates that these structures were more than just adaptations for flight; they likely played roles in thermoregulation, display, and even camouflage.

In recent years, the discovery of a new species of titanosaur in Jiangxi Province has added another chapter to the narrative of China's dinosaurs. Titanosaurs were among the largest dinosaurs to roam the Earth, characterized by their massive size and long necks. The new species, which has yet to be officially named, is believed to rival the size of other known titanosaurs, making it a significant find for understanding the diversity of these giants.

The titanosaur fossils were unearthed in a site rich with sedimentary layers, indicating a dynamic environment that supported a variety of life forms during the Late Cretaceous period. As paleontologists continue to study these fossils, they hope to glean insights into the behavior, diet, and social structures of these enormous creatures.

The implications of this discovery extend beyond just the titanosaur itself. It highlights the potential for finding new species in regions of China that have yet to be thoroughly explored. As the country's paleontological landscape continues to grow, so does our understanding of how these massive creatures adapted to their environments and coexisted with other dinosaurs.

The field of paleontology has also benefited significantly from advancements in technology. Techniques such as CT scanning and 3D modeling have revolutionized the way scientists study fossils. In China, researchers are increasingly using these technologies to analyze fossil specimens without damaging them, allowing for non-invasive studies of their internal structures.

For example, CT scans have enabled scientists to visualize the intricate details of fossilized bones and soft tissues, revealing information about the anatomy and development of these ancient creatures. Additionally, 3D modeling software allows researchers to create accurate digital representations of fossils, facilitating collaboration among scientists around the world.

International partnerships are also enhancing paleontological research in China. Collaborations between Chinese and Western scientists have led to groundbreaking discoveries and increased the exchange of knowledge and techniques. These joint efforts have not only enriched the field but have also fostered a greater appreciation for the importance of paleontological research in understanding Earth's history.

As paleontologists continue their work in China, the future promises even more exciting discoveries. Many regions remain underexplored, and the potential for uncovering new dinosaur species is vast. The remote and rugged terrains of western China, for instance, hold the promise of significant finds that could further illuminate the diversity of dinosaurs that once roamed the Earth.

Moreover, ongoing research initiatives aimed at promoting paleontology among students and young scientists in China are crucial for the field's development. Educational programs and fieldwork opportunities are inspiring the next generation of paleontologists to explore the rich fossil heritage of their country.

As new fossil discoveries emerge, scientists will continue to piece together the stories of these ancient creatures. Each finding has the potential to rewrite the narratives of evolution and adaptation, shedding light on how dinosaurs lived and thrived in their environments.

China's role as a leader in dinosaur discoveries is undeniable. The fossil beds of Liaoning and Jiangxi Province have yielded breathtaking insights into the prehistoric world, from the feathered dinosaurs that bridged the gap between reptiles and birds to the enormous titanosaurs that dominated their landscapes. As technology advances and exploration continues, the stories of China's dinosaurs remain far from complete. Each new find adds a chapter to our understanding of life on Earth, ensuring that the tales of these ancient giants will continue to captivate and inspire generations to come.

Non-Fiction

Group 4

New Tales of China's Dinosaurs

Carmel School - Elsa High School, Gian Yahyagil, Peter – 15

The study of dinosaurs, known as paleontology, extends far beyond the common perception of them as merely scary creatures or gigantic monsters. It is a world uncovered, hundreds of millions of years of history to be decoded underneath our feet. The study of dinosaurs helps us better understand our place in this world, to understand how life evolved, changed, and thrived over millions of years to get to where we are today. China, with its rich deposits of fossils, offers a treasure trove of information that not only illuminates the prehistoric past but also connects deeply with Chinese culture and mythology. These fossils, often linked to legendary creatures like dragons, illustrate how ancient peoples interpreted their world, while simultaneously providing critical insights into the evolutionary lineage of modern birds. Ultimately, the discoveries made in China are reshaping our understanding of evolution, revealing the intricate tapestry of life that has existed long before humans walked the Earth.

Among the multitude of new species of dinosaurs discovered in China, there are a few that stand out from the rest. A group known as the Dromaeosaurids. These dinosaurs are classified as a small clade of theropod dinosaurs (1). These are the dinosaurs that we often see in the media portrayed as the "raptors". They are also the predecessors to modern-day avians. The reason why the focus on this group is so important is because of how certain dromaeosaurids have shaped our understanding of dinosaurs and their unique connection to Chinese culture and history. China is also a hotspot for finding fossils of dinosaurs. The Chinese province of Liaoning contains some of the most world-renowned paleontological dig sites. These dig sites are known collectively as the Jehol Group. Fossils found in these dig sites have changed our understanding and knowledge of life during the Mesozoic era. These dig sites "span the late Hauterivian to early Aptian (131-120 Ma) of the Early Cretaceous and, collectively, these have produced thousands of essentially complete specimens…" (Benton, M. J., Zhonghe, Z., Orr, P. J., Fucheng, Z., & Kearns, S. L. (2008) These specimens are often found remarkably well preserved, with some specimens even being found with soft tissue (5). Apart from the dromaeosaurids, other species have left an impact on palaeontology. We have all heard of famous dinosaur species like the Tyrannosaurus Rex or the Stegosaurus, but China has dinosaurs exactly like these big names. First discovered in 1977, The Tuojiangosaurus was a Stegosaur that lived during the late Jurassic period. The Mamenchisaurus is also one of the most well-known dinosaur species discovered in China. The Mamenchisaurs was a Sauropod, reaching up into the sky with its elongated neck to feast on the conifers of the Late Jurassic period. The dinosaurs mentioned have all been found in the Jehol Biota of the Sichuan province. China has a promising future for palaeontology due to its rich deposits of well-preserved fossils, particularly in regions like Liaoning and Xinjiang, which continue to yield groundbreaking discoveries that enhance our understanding of dinosaur evolution and prehistoric ecosystems. Additionally, the increasing investment in scientific research and international collaboration has positioned Chinese palaeontologists at the forefront of global paleontological research.

From the majestic Sauropods such as Mamenchisaurus or the ornithopods like Tsintaosaurus or the Dromaeosaurids China is rich with dinosaurs. Chinese palaeontologists like C.C Young or W.C Pei led the movement in discovering all there is to know about Chinese Prehistory (2). There is a strong connection between Chinese Culture and Dinosaurs. The Chinese name for dinosaur "恐龍" directly translates to "Scary Dragon", so from an etymological standpoint there is a connection between Dragons and Dinosaurs. The dragons often mentioned in Chinese mythology are often theorized to have been based on the discovery of Dinosaur bones. "While Hua Yang Kuo Chih holds the oldest reference to a Chinese dinosaur fossil, in books about ancient medicine there are also often references made to "dragon bones" (Hu, J, 1994). A partial basis for entire beliefs and omnipotent creatures such as the dragons of China were built off of discoveries of dinosaur bones. The Chinese people and their beliefs have been connected to dinosaurs in some ways before Dinosaurs were even discovered. Dinosaurs have also been used to honor large parts of Chinese culture. In some ways, Dinosaurs have been named after the place they were first discovered, such as Tsingtaosaurus (named after the city of QingDao) or Huayangosaurus (HuaYang being an alternate name for the province of Sichuan). In other cases, the dinosaurs are named in a way to honor Chinese history, such as the Confuciusornis. This small dromaeosaurid was named after the famous Chinese philosopher Confucius, a tribute to his great contribution to Chinese philosophy and the social and moral philosophy concepts of Confucianism.

The discoveries of Chinese dinosaurs not only impact palaeontology and understanding of the prehistoric world within Chinese Culture but also have an immense impact on the global paleontological world. Certain species of Dromaeosaurids have been incredibly prominent in the world of palaeontology, such as the "Sinosauropteryx" or the "Microraptor". These dinosaurs have contributed to a better understanding of dinosaur traits and overall dinosaur evolution. The Sinosauropteryx, first discovered in the 1990's was crucial to the understanding of feathered traits within dinosaurs. The Sinosauropteryx was preserved with clear evidence of feathers while also clearly a flightless species of dromaeosaurid; this discovery was incredibly important because it proved that dinosaurs had clearly developed feathers without a direct correlation to flight, instead having the feathers be used for insulation. This theory on the use of feathers was able to be applied to species within the same clade, providing substantial evidence that similar dromaeosaurids, or even larger theropods such as the infamous Tyrannosaurus Rex, were likely to have possessed feathers or feather-like structures as well. This suggests that feathers may have been a common trait among theropods. The Microraptor was also able to change the way we looked at the evolution of dinosaurs. The Microraptor is particularly notable for its unique physiology, with feathers prominent on its arms and legs. The presence of feathers and their body structure provide evidence for understanding the mechanics of flight in early birds and their dinosaur ancestors. Microraptors may have glided from treetop to treetop, this evidence contributes to discussions on how flight in modern avians has evolved.

Overall, the role of China's dinosaurs in the future of paleontology is both profound and promising. As ongoing research continues to uncover new species and refine our understanding of evolutionary pathways, China's fossil record serves as a vital resource for scientists worldwide. With the blend of rich cultural history and groundbreaking paleontological discoveries, China not only enhances our knowledge of the prehistoric past but also inspires future generations of researchers to explore the intricate connections

between ancient life and modern ecosystems. As to why we study paleontology, these fabulous creatures serve as reminders for us. This planet we call ours doesn't truly belong to us. Life thrived and diversified long before our time. Therefore, it is why with the highest respect we uncover the fossils, and learn from their lives lived long ago.

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New Tales of China's Dinosaurs

Immaculate Heart of Mary College, Ying, Cheuk Kiu Cheryl – 16

In Chinese culture, our ancestors crafted enchanting dreams and magnificent legends about dragons. We, as Chinese, take pride in reading these stories and consider ourselves the "descendants of the dragon."

Throughout the five-thousand-year history of the Huaxia Civilization, countless reforms have occurred in various aspects of life, yet our fascination with the dragon—a spiritual symbol of power—remains unchanged. Dragons are not just figures in myths or fairy tales; they are reminiscent of creatures that truly existed around two hundred million years ago: dinosaurs, named for their nature as large reptiles.

When discussing dinosaurs, we should celebrate China's significant contributions to this field. With its unique geographical advantages—such as extensive sedimentary rock formations in the northeast, environmental diversity, and exceptional fossil preservation conditions—China has created an ideal habitat for dinosaurs. As a result, the country has produced 150 new species and thousands of dinosaur fossils, establishing itself as a leader in fossil discoveries. Additionally, the Gobi Desert, the world's largest dinosaur fossil reservoir, has yielded numerous dinosaur footprints and remains, facilitating research on species diversity, diets, and social behaviors.

The journey of uncovering dinosaur fossils began unexpectedly. These ancient relics, once hidden underground, were eventually uncovered through fortuitous discoveries. In the 1920s, American explorer Roy Chapman Andrews and his expedition team arrived in the Gobi Desert while searching for the remains of early humans. By sheer luck, they stumbled upon invaluable dinosaur fossils. To honor this discovery, Andrews named the plant-eating dinosaur Protoceratops andrewsi, which translates to "first-horned face." Unfortunately, their exploration was cut short due to local political turmoil.

For decades, the search for dinosaur fossils was paused due to the political climate. However, during China's political and economic reforms, Canadian scientists were granted opportunities for research through funding and technical training. This collaboration led to the China-Canada Dinosaur Project, which lasted from 1986 to 1991. Although initial efforts were challenging, a breakthrough occurred after three weeks when a Chinese researcher spotted a large cervical rib bone in the Junggar Basin, Xinjiang. The crew faced difficulties as the skeleton lay buried under 100 tons of solid rock. In a moment of inspiration, Dong Zhiming, the leader of the Chinese researchers, proposed using dynamite to remove the overburden. Though risky, his direction ensured the fossils remained intact. These fossils later became the holotype of Mamenchisaurus sinocanadorum, named after both China and Canada.

In August 1996, farmer and part-time fossil hunter Li Yumin unearthed the first fossil specimen of Sinosauropteryx, the first known feathered dinosaur, in the Yixian Formation, Liaoning. He divided it into two pieces, selling one to the National Geological Museum in Beijing and the other to the Nanjing Institute of Geology and Paleontology. This discovery astonished Western scholars and ignited a national fossil boom.

In July 2001, scientists officially named and described Caudipteryx, a feathered dinosaur first found in 1997. This discovery highlighted how dinosaurs and birds are related. The name means "tail feather," and it also honors Zou Jiahua for his work in science. The specimen showed amazing details of its feathers, paying respect to the famous Chinese paleontologist Zhiming Dong.

In October 2004, the International Symposium on Liaoning Fossils, organized by the Chinese Academy of Sciences in Beijing, brought together paleontologists and researchers from all over the world. They shared exciting news about new dinosaur and early bird finds, like Zhangheotherium and Sinosauropteryx. This helped us understand how dinosaurs evolved into modern birds. The symposium looked into the paleoecology of the Yixian Formation, exploring the variety of life in the area during the Early Cretaceous Period. They discussed dinosaur behaviors, nesting habits, and how they interacted with each other, all based on fossil evidence.

In April 2005, paleontologist Xu Xing found a large thigh bone while shooting a documentary. At first, he thought it was from a sauropod, but after a closer look, he discovered it belonged to ⋆Gigantoraptor⋆, a new type of theropod that was officially named in 2007. This find not only added to the list of fossils but also reminded everyone how exciting and unpredictable paleontology can be.

In March 2009, the discovery of Yutyrannus huali, based on fossils from the Early Cretaceous Yixian Formation, provided crucial evidence of feathers in non-avian theropods. Named "feathered tyrant," this species is one of the largest known feathered dinosaurs, bolstering theories about the evolutionary connection between birds and dinosaurs.

From 2010 to 2018, the paleontological landscape in China experienced a remarkable flourishing, with the identification of approximately 50 new dinosaur species. This surge was particularly prominent in the provinces of Liaoning, Xinjiang, and Gansu, regions renowned for their rich fossil beds and exceptional preservation conditions. The discoveries not only enriched the existing catalog of dinosaur species but also highlighted China's growing prominence in the global paleontological community.

In Liaoning, the well-studied Yixian Formation continued to yield significant finds. This area has long been a treasure trove for paleontologists, known for its exceptionally preserved fossils, including feathered dinosaurs that provide critical insights into the evolution of birds. Notable discoveries during this period included species like Guanlong wucaii, a basal theropod that showcased early features of the Tyrannosauridae family, and Microraptor zhaoianus, a small feathered dinosaur that offered valuable clues about the origins of flight.

In Xinjiang, researchers uncovered fossils that revealed a wide variety of dinosaur types, ranging from herbivorous sauropods to predatory theropods. Among these was the discovery of Mamenchisaurus sinocanadorum, a long-necked dinosaur that further demonstrated the diversity of sauropods in ancient ecosystems. The region's unique geology has allowed for the preservation of not just bones but also fossilized footprints and nests, shedding light on the behaviors and habitats of these ancient creatures.

Gansu Province also contributed significantly to this wave of discoveries. The rich fossil deposits in the area have led to the identification of several new species, including Yinlong, one of the earliest known ceratopsians. This finding not only highlighted the diversity of dinosaurs in the Late Jurassic but also provided new insights into the evolutionary history of horned dinosaurs.

Overall, the period from 2010 to 2018 in China was characterized by an unprecedented level of activity and discovery in the field of paleontology, underscoring the country's vital role in unraveling the mysteries of the dinosaur era. Each new species added not only to our understanding of the diversity and evolution of dinosaurs but also painted a more complex picture of the ecosystems in which they lived, making this era a cornerstone of modern paleontological research.

In April 2021, a paleontology team uncovered a well-preserved hadrosaur embryo, dating back 70 million years, in the Ganzhou Basin, Jiangxi Province. Later, they found an oviraptorosaurian embryo named "Yingliang Beibei," believed to date from the late Cretaceous period. Its curled posture provided further evidence of the connection between dinosaurs and birds.

Also in June 2021, fossil bones of Gandititan cavocaudatus were discovered at a construction site in Ganzhou, representing a type of titanosaurian sauropod and enhancing our understanding of Cretaceous species.

To delve deeper into the fascinating world of dinosaurs, visitors can explore numerous dinosaur parks and museums across China. The Liaoning Provincial Museum, established in 1950, boasts one of the world's most extensive collections of dinosaur fossils, including Microraptor, Yutyrannus, and Sinosauropteryx. The museum features life-sized models, dioramas of ancient ecosystems, and interactive exhibits that highlight the evolutionary significance of various fossils.

Another excellent destination is the Fossil Museum of the Chinese Academy of Sciences in Beijing, which houses over 20,000 fossil specimens, including Sinosauropteryx and Psittacosaurus. Educational programs and guided tours enhance the experience, promoting awareness of paleontology and natural history.

Finally, the China Dinosaur Park in Changzhou, Jiangsu Province, offers an immersive experience with over 100 life-size dinosaur replicas, informative exhibits, and amusement rides, making it a favorite destination for families.

Today, China is not only focused on local discoveries but is also eager to explore paleontological sites in nearby countries. The Institute of Vertebrate Paleontology and Paleoanthropology (IVPP) is outlining its first international expedition in Central Asia, particularly in Kyrgyzstan, Kazakhstan, and Mongolia, known as the "land of dinosaurs." The crew is already conducting paleoanthropological research in Kyrgyzstan, showcasing China's commitment to international cooperation in paleontology.

As the legacy of dinosaurs continues to emerge, revealing the Earth's ancient past, researchers will persist in their quest to uncover the astonishing history of our planet.

Moreover, the study of dinosaurs in China has sparked a growing interest in paleontology among younger generations. Educational initiatives and outreach programs in schools have been instrumental in fostering curiosity about ancient life forms. Workshops, lectures, and fossil exhibitions have made paleontology accessible to students, encouraging them to explore this fascinating field. Such programs not only nurture a passion for science but also cultivate the next generation of paleontologists.

The role of technology in paleontological research cannot be understated. Advances in imaging techniques, such as CT scanning and 3D modeling, have revolutionized the way fossils are studied. These technologies allow researchers to visualize the internal structures of fossils without damaging them, providing unprecedented insights into the biology and behavior of dinosaurs. As technology continues to evolve, it is likely that new discoveries will reshape our understanding of these ancient creatures.

Collaboration between Chinese and international scientists has led to significant breakthroughs in paleontology. Joint research projects and expeditions have facilitated knowledge exchange and the sharing of resources. This spirit of collaboration not only enhances scientific understanding but also fosters friendships across borders, creating a global community of researchers dedicated to uncovering the secrets of the past.

As we look to the future, the ongoing exploration of China's paleontological sites holds great promise. Each excavation could reveal new species and deepen our understanding of dinosaur evolution. The rich fossil record in China not only informs us about the past but also inspires future generations to continue the pursuit of knowledge, ensuring that the story of dinosaurs remains an integral part of our cultural heritage.

China's Revolutionary Efforts in Dinosaur Paleontology - From the 19th Century and Ever Onwards

Ying Wa College, Lam, Bok Man – 15

The recent discovery of a dinosaur fossil in Hong Kong has made China's prominence in dinosaur paleontology more evident than ever before. Over the past two decades, scientists across the country have made countless discoveries and lead many projects in this field. Although it seems that the road our scientists walked upon was smooth, the first steps these pioneers took in the field of dinosaur paleontology were, to say the least, rough. Despite these challenges and adversities, China's paleontologists have still made multiple breakthroughs in this field throughout the years, discovering numerous new species of dinosaurs, ranging from the *Sinosauropteryx,* the world's first clearly feathered dinosaur, to the *Gigantoraptor,* one of the largest dinosaurs ever discovered.

Before we explore China's recent breakthroughs in the paleontology of dinosaurs, we must first ask: How did China manage to make such great progress regarding dinosaur paleontology in such a short time? To answer this question, we need to know China's research on paleontology and fossils in the past century…

China's first steps in paleontology were filled with challenges for the scientists of the time. Of course, with such challenges, the Chinese have not yet recorded a dinosaur fossil discovery. Instead, our scientists began on invertebrates and plant fossils. Before 1920, almost all paleontologists and geologists carrying out research in China were from foreign countries, such as German scientist F. Richthofen during 1868 and 1872, who collected multiple fossils of ancient invertebrates, recording their data in many Chinese provinces. There are some exceptions to this, of course. The first Chinese scientist publishing his research on paleontology was Rongguang Qi in 1871. Being fortunate enough to be sent to America by the Qing government and having been trained in geology and mineral resources, Qi conducted research on invertebrates and plants from the Hebei Province and published his results in 1910. Although these discoveries weren't the most groundbreaking for the time period, this marked the beginning of a great journey.

Apart from these discoveries, the first attempts to teach geology and paleontology at a college level had also been made in the University of Peking. One of the most notable professors in this field was Wenjiang Ding, a 1911 graduate of the University of Glasgow, who started teaching China's first college-level course in paleontology at the Geological Institute, which was founded in 1913. This course gave rise to the first generation of geologists and paleontologists trained locally in China, as well as the National Geological Survey of China that was officially founded in 1916, with Ding as its first director and some of the aforementioned locally trained paleontologists being hired. In addition to Ding's tremendous efforts in teaching paleontology, he has also pioneered the study of fossil plants in China. The establishment of these foundations and the contributions of many scientists helped lay the foundations for dinosaur paleontology in China.

After the first steps were made, the very first dinosaur fossils were finally discovered in China in the 1930s, after the fall of the Qing Dynasty and the establishment of the Republic of China. One of the biggest pioneers to dinosaur paleontology in China is none other than Yang Zhongjian. Graduating from the Department of Geology in Peking University in 1923 and receiving his doctorate from the University of Munich in 1927, Yang dedicated his research on fossil vertebrates, including that of dinosaurs. Yang later supervised the research on dinosaurs in China from 1933 until the 1970s. In this time, Yang led the discovery of some of the most important fossil discoveries in history, with some examples being the first few prosauropods, a family of herbivorous dinosaurs, notably *Lufengosaurus* in 1938, playing a crucial role in giving paleontologists information on the early migration patterns of dinosaurs into Asia, and *Yunnanosaurus* in 1942, with both of these fossils being found in the Lufeng formation located in Yunnan Province. The gigantic sauropod *Mamenchisaurus* was also discovered by him in 1954 being the largest species of dinosaur in China to date. China's, as well as Asia's first stegosaur, the *Chialingosaurus,* was discovered by Yang in 1957. These discoveries all served as a major milestone in Chinese dinosaur paleontology. Because of these great discoveries, Yang has been called the 'Father of Chinese Vertebrate Paleontology'.

While the contributions Yang made to dinosaur paleontology in both China and worldwide are indisputable, there are still other paleontologists who played a significant role in pioneering the exploration and discovery of dinosaurs in China from the 1950s to the 1960s. One of these examples is Hu Chengzhi. Even though his major focus on paleontology was paleoanthropology, the study of ancient humans, he still managed to discover the first fossil of *Keichousaurus* in 1957, as well as a hadrosaur species, *Shantungosaurus* giganteus, found in the Shandong Province, demonstrating the activeness of Chinese scientists in the research of dinosaur paleontology.

Despite the tremendous efforts and progress Chinese paleontologists have made during the 1930s to the 1960s, China was still just a rising country in terms of fossil count. So, how is China among the top countries in paleontology today? Well, to say the least, the field of paleontology in China has experienced an extremely rapid development in both technology and research in the late 1970s, following the conclusion of the Chinese Civil War and the Cultural Revolution. In addition, the 'Reforms and Opening-up Policy' established in China boosted the Chinese economy, greatly benefiting paleontologists. With that said, we will now take a closer look at the exponential growth that Chinese dinosaur paleontology has experienced, as well as the key breakthroughs our scientists have made.

The 1970s period played a crucial role in the field of paleontology worldwide, mostly because of China's aforementioned leap in technology, seeing a wave of new dinosaur discoveries and a major advancement in our understanding of these creatures. China's research on dinosaurs was perhaps one of the most groundbreaking, with many scientists dedicating their work to them, one of them being Chinese paleontologist Dong Zhiming, a disciple of the previously mentioned Yang Zhongjian and working for the Institute of Vertebrate Paleontology and Paleoanthropology (IVPP). His research mainly focused on the Shaximiao Formation. Located in the small town of Dashanpu in the Sichuan Province, this formation is one that was composed of dinosaur bones from the Middle Jurassic, a period which does not commonly yield fossils. In fact, the dinosaur fossils found here were the first fossils dating to the Middle Jurassic that were found in China! This marked another significant milestone in dinosaur paleontology in China. Apart from these great discoveries in Sichuan, Dong has also made significant contributions in the China-Canada Dinosaur Project (CCDP), one of the largest missions in paleontology. As a result of this project, more than 11 new dinosaur species

were discovered in the Junggar Basin of Xinjiang. One of the genus of these species was named in honour of Dong, specifically the theropod dinosaur Sinraptor dongi. With many other examples like Dong, it is clear that China's prominence in dinosaur paleontology is on a rising trend.

In addition to Dong's significant discoveries in Sichuan regarding the China-Canada Dinosaur Project, Chinese and Canadian paleontologists have also carried out field work in the Gobi Desert in this project. With the desert's expanse stretching from northern China all the way to southern Mongolia, this region would soon become the largest dinosaur fossil reservoir in the world. After identifying the sites of interest for future excavation, Canadian researchers like Dale Russel and Phil Currie uncovered more than 70 dinosaur fossils near the town of Bayan Mandahu in 1988. The China-Canada Dinosaur Project concluded in 1991, with over 60 tonnes of fossil material collected in China alone, and another 15 tonnes found in Canada. This massive project also had lots of positive impacts on China's progress on science in general, as the National Natural Science foundation of China was established in 1986 in conjunction with the initiation of the CCDP. Another major implication of this collaboration was that it fostered the collaboration of Chinese institutions with foreign bodies, which resulted in three additional dinosaur projects, such as the Sino-Japan Silk Road Dinosaur Expedition in 1992 and the Sino-Belgium Dinosaur Project in 1995. Scientists like Zhao Xijin and other participants of the CCDP still continued to lead international expeditions to the Gobi desert even after the conclusion of the project, proving their dedication to paleontology. It's no surprise Chinese scientists will bring us another groundbreaking discovery very soon…

With the 20th century coming to an end, Chinese paleontologists have made yet another monumental breakthrough. Surprisingly, this precious fossil was not found by a scientist! In the late 1990s, a farmer named Li Yumin uncovered the first fossil of the *Sinosauropteryx* in the Liaoning Province. The *Sinosauropteryx* species was the first clearly feathered dinosaurs outside of Avialae, birds and their immediate relatives. *Sinosauropteryx* was a small, carnivorous compsognathid dinosaur species that lived in the Early Cretaceous period, or about 130 million years ago. What intrigued scientists the most was that it was covered in a coat of filament-like feathers. There were also structures in some of its feathers that indicated colouration, a reddish and light banded tail. This makes it the first non-avialian dinosaurs where colouration has been determined.

So, why is the discovery of the *Sinosauropteryx* such an important one? Well, this discovery revolutionized our understanding of dinosaurs. Now, you may ask: How is this dinosaur fossil so special and important? Well, it is special simply because of one prominent feature: The presence of feathers.

The discovery of a feathered dinosaur has multiple implications on the study of dinosaurs as a whole. To begin with, the *Sinosauropteryx* gave new insights into the biology of dinosaurs, specifically those of the theropod family. The presence of feathers was a direct counter-example of the traditional view of dinosaurs of them being 'reptiles with scaly skin', completely changing scientists' perceptions of dinosaurs. This also indicates that these dinosaurs had enhanced heat insulation and thermoregulation capabilities than their predecessors from earlier periods such as the Jurassic. It is most likely that these feathers were used as an early form of thermoregulation by trapping heat to maintain a more stable temperature. This need for sustaining body temperature suggests that some dinosaurs from the Cretaceous period like the *Sinosauropteryx* were no longer purely cold-blooded.

Speaking of sustaining body temperature, some dinosaurs being warm-blooded also has a big impact on our understanding of the metabolism and activity levels of dinosaurs in the Cretaceous. Feathers are metabolically costly to produce and maintain, implying a higher level of energy consumption and metabolic rate in these dinosaurs, making them more similar to modern animals.

Apart from this, another significance of this discovery was that it suggests the use of camouflage in dinosaurs. The colouration of the *Sinosauropteryx* showed distinct banding patterns in its feathers. This kind of colouration, now known as a countershaded colouration theme, is also seen in many of today's birds, as well as other animals like sharks. This demonstrates that small, feathered dinosaurs like the *Sinosauropteryx* may have evolved similar strategies to blend into their environment and ambush prey.

Most importantly, the *Sinosauropteryx* provided scientists with crucial information regarding the evolution of dinosaurs into modern birds. The *Sinosauropteryx* possessed skeletal features such as a relative high skull, as well as primitive feather structures that are estimated to have evolved into modern birds, and thus serving as a transitional form between non-avian dinosaurs and the first true birds, specifically the clade Aves. Although the feathers found in *Sinosauropteryx* were relatively simple and primitive when compared to the birds we see today, it still laid the basis for flight in avian species.

Entering the 21st century, the many positive impacts of the discovery of *Sinosauropteryx* has kickstarted the exploration of feathered dinosaurs.

Closely following the discovery of the revolutionary *Sinosauropteryx,* Chinese paleontologists continued research in the Liaoning Province, the same province where *Sinosauropteryx* was discovered, with one of the most notable scientists being Xu Xing, a paleontologist known for naming more dinosaurs than any other living paleontologist, proving his massive contributions to Chinese paleontology. Some of his discoveries included feathered dinosaurs, such as the *Microraptor* in 2000 and the *Mei long* in 2004. These two dinosaurs, just like the *Sinosauropteryx,* showed primitive characteristics of birds as well as those of previously existing dinosaurs, giving further evidence of how dinosaurs evolved into birds, helping to bridge this evolutionary 'gap'. Additionally, Xu studied the genus *Anchiornis,* which was found in the fossil beds of Liaoning. The *Anchiornis* was a four-winged theropod dinosaur which had feathers covering almost the entire body. What is also interesting is that it came around 10 million years before the first recognized bird, the *Archaeopteryx*. This, in addition to the *Sinosauropteryx,* was another crucial clue towards how the first birds evolved into existence.

While the discovery of feathered dinosaurs in China marks an important milestone in both national and global scales, other breakthroughs our scientists have made in the 21st century are not to be neglected.

One major contribution China has made is none other than the development of new technology and techniques for studying fossils. Chinese researchers have collaborated with other international experts in order to apply various cutting-edge technologies like CT scanning, a non-destructive method of analysing fossils, allowing for the study of fossils while preserving its original form; isotopic analysis, which is the analysis of chemical isotopes present in a fossil. Such isotopes of elements include those of carbon, nitrogen and oxygen, notably the use of carbon-13 in dinosaur teeth and bones to study the ecological and dietary habits of dinosaurs; as well as biomechanical modeling to study the biomechanics of locomotion in dinosaurs, such as walking, running and other movement patterns in different dinosaur species. These technologies allow scientists to do further research on how dinosaurs lived.

Another major contribution China has made is on the field of dinosaur paleoecology, the study of the ecosystems and the interactions between dinosaurs. Recent studies and explorations of Chinese dinosaur fossil beds have provided unprecedented insights into the ecosystems and food webs of dinosaurs, as well as the relationship between dinosaurs and other organisms, deepening our understanding of the roles of dinosaurs in ancient ecology.

In conclusion, Chinese paleontologists have taken multiple great leaps in the study of dinosaurs since the 19th century with fascinating discoveries, ranging from the revolutionary *Sinosauropteryx* to the gigantic *Mamenchisaurus*. Throughout these two centuries, our scientists have only been advancing in both technology and knowledge more and more rapidly, proving China's prominence in the field of dinosaur paleontology. With new dinosaur species being discovered in various regions of China at an astonishing rate, there really is no knowing what the next groundbreaking discovery will be — whether it be a new technology or a species that changes our view on dinosaurs yet again — yet one thing is to be certain: China's paleontologists will continue to push the boundaries of our understanding of these prehistoric giants that once dominated the Earth like we did, unravelling the ancient mysteries these fossils hold.

Non-Fiction

Group 5

Fossil (Fuels): All the Rage in the Holocene

International Christian School, Lau, Sophie Grace – 16

What was it like after the meteor? Picture the earth, still and serene. Time itself suspended in shock of an era-ending celestial collision. There is not a single ripple on the surface of this static iridium lake. Gradually, a hazy sheet of soot and debris settles on the freshly shaken ground. From somewhere far in the distance travel the echoes of mighty tidal waves colliding with a stoic shore. All around, pillars of fire spring up, feeding on plant litter and amassed atmospheric gas. Once warm rays of sunlight now suffocate in the clutching grip of ash, and once lush plants begin to shrivel. The whole green planet has been transformed into a crimson dreamscape.

For a while, life on earth persisted more or less unchanged, save for a slight red hue. Yet as Father Time marched on, Mother Nature began to suffer. The seasons grew shorter, the cold became frigid, and the hot became sweltering. Life on earth turned from leafy paradise into desert terror. The gentle caress of sunlight never returned, causing plants to suffer without a source of light producing energy. The repercussions of this sent a ripple effect up the food chain, until every bearer of life on the planet felt that living was nothing more than a mere forcing of excruciating beats out of a heart stripped of the will to live. From the large, yet gentle *datousaurus* to the small and ferocious *sinornithosaurus,* the contagion effects of the meteor ran painfully deep. In one cruel trick of the universe, an entire species was eradicated.

Every flightless dinosaur met death. All others over 25 kilograms also fell. Yet their legacy was carried through to all future eras of natural history. In 1996, Li Yumin, Chinese fossil hunter, uncovered the first identified remains of *Sinosauropteryx* in the Liaoning province of Northeast China. The carnivore spanned approximately 1.1 meters and lived in the Early Cretaceous age. For the first time in history, scientists were able to make attempts to identify color patterns on a dinosaur by studying pigments preserved in the fossil. From this, it was hypothesized that *Sinosauropteryx* was brick-red with alternating shades on its tail. And it then took little time for paleontologists to realize that *Sinosauropteryx* was the key in unlocking the link between modern birds and winged dinosaurs. Since then, scientists have discovered many other dinosaurs entombed in the soil under China. Amidst the chaos and frenzy of construction in Gaxian province, unsuspecting workers uncovered the fossilized remains of *Gandititan cavocaudatus.* Possessing a history of approximately 90 million years, the remains were undiscovered until 2021, when they were found in a miraculously preserved state with about 40% of the whole dinosaur skeleton present. It was estimated that the sauropod (long necks, long tails, four thick legs) was on the smaller end, at 14 meters long. In 2024, scientists in the Fujian province found another unidentified fossil of an unknown bird-dinosaur, now known as *Fujianvenator prodigiosus.* The skeleton was assumed to belong to a creature that lived in the Jurassic Age and had a combination of traits belonging to running dinosaurs and present-day wading birds (herons, storks, ibises, etc). The same year, *Dinocephalosaurus orientalis,* a water dweller with an abnormally long neck, was discovered in Guizhou amidst limestone deposits.

The identification of smudged fingerprints left by these prehistoric titans have left the human population enraptured in beauty and mystery. We find delight in studying these relics of the past and marvel at the might and the majesty of these kings of the Jurassic age. But this wonder is often short-lived. We reach the end of the article or the documentary and those complex scientific names promptly exit the other ear. Too often do we overlook the magnitude of these beasts, not on the scale of human existence, but on the scope of the universe. As a child, I found amusement in growing dinosaurs out of little plastic tablets, peeling back the thin cardboard to reveal a 3 by 4 grid of condensed foam raptors and T-Rexes. I would observe with wonder as those half-inch sponges transformed into miniature pterodactyls and bronctosauri that were foreign to me outside the silver screen. However, as with most children's toys, interest was quickly lost and those colorful reptilian mounds made their way to their final destination via garbage truck. My fascination was piqued in the delight of having a new toy. But my joy crumbled the second I could not gain anything more for myself. Looking back, I pity those dinosaurs for their descent from being the kings of the Earth to cheap icons used to fuel rampant capitalism.

Yet I, like many others, missed the opportunity for introspection. Do we not, in multiple aspects, closely resemble clade Dinosauria? Having ascended to the top of the food chain with egos bolstered with addictive illusions of invincibility, we have carelessly thrown away our duty of stewarding the earth. We trade our morality away with reckless abandon to be the richest in our cities and to possess the most destructive technology. We believe that if, somehow, we can build a neo-tower of Babel, that we might have a chance at pinning down immortality. But as we destroy our planet, mining relentlessly for precious metals and ever decreasing oil supplies, we cease to remind ourselves that our planet can one day destroy us. For the dinosaurs, it took a meteorite strike. But at the rate that we speed through life, our very existence on this planet has become the biggest threat to our survival. The dinosaurs ruled the earth for 165 million years, and the modern man has only roamed it for 200,000. The human race is a mere speck in the face of eternity, and life of the individual is comparably microscopic. So when we unearth unknown dinosaurs, we must consider that these could be fossilized reflections of our future. How would we change if a glimpse into a crystal ball revealed an alien species excavating the remains of *Homo sapiens,* Asian female, 5 foot 3, omnivore?

The decision has fallen to us: will we speculate about the future as we scrutinize the past, or will we 'educate' ourselves while shrouded in ignorance? Will we delay action and study fossils until the fossil fuels make the air too thick to breathe? Until the smog is so turbid that our screams are completely dampened behind a tear-inducing curtain of toxic gas? *We* are the poison that is killing us. The seas perpetually toss our plastic footprints back at us as we massacre the rainforests that heal the air we need to survive. And still, we could not care less. Must we bear the shame of being fluent in both ignorance *and* imprudence? What most do not know about the extinction of the dinosaurs is that prior to the asteroid crash, the earth was already undergoing a period of climate change. Volcanic activity in modern south Asia caused a dramatic influx of gas into the atmosphere which drastically altered the global climate. This lit the flame at the end of the rope which eventually exploded in the plummeting numbers of vegetation. Of course, the dinosaurs could not have done anything to backtrack or revise the hand they had been dealt. But now history is repeating. Except now the gasses being pumped into the atmosphere are completely controllable. Now, they are being pumped out of industrial buildings that *we* created and depend upon for everyday life. And still, the gasses being pumped into the atmosphere are what will end the species. Now, the ones causing climate are *us.* Now, the decline of the species will not come as a result of an unforeseen meteor strike, but as the predictable result of human error and greed.

I could go on. But we must not neglect to remember the once most prominent creatures that spanned three ages of the universe. We must not allow the next dominating species to ooh and ahh over their remains and forget the consequences they died to remind us of. So we must start peeling off the duct tape and plastic wrap that has bound our planet for so long, and begin to appreciate that the same earth which was once home to the rulers of the Mesozoic Era is now home to us.

Links

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Creative Writing

Non-Fiction

Group 5

The Relationship Between Geography and Dinosaur Migration

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Do you know the birds are actually a kind of dinosaur? Dinosaurs, a various group of reptiles. Tracking to the earliest time they appeared, it was the Triassic period, from 243 and 233.23 million years ago. However, in the Late Cretaceous, dinosaur ultimately disappeared and the gradually became the fossils, which are found by people today. The paleontologists discover that the fossils record the movement and migration of the dinosaurs, which allows them to have more information to explore the geographic change at that era. The discovery of new dinosaur fossils helps scientists to explore the geography in the era of dinosaurs, and the dinosaur migration shown in fossils the change or evolution of plants, the climate and the landform.

Dinosaurs played an important role in plant evolution, and when they moved into one place, they not only affected the distribution of plants, but also may have contributed to the development of plant diversity because of their diet. For example, those large herbivorous dinosaurs, including species like stegosaurs and sauropods, played an important role in shaping the plant life of their era through their preference of the diet of cycads and conifers. These massive creatures exerted a form of natural selection on the vegetation, and their favorite plants were those capable of rapid growth and reproduction, such as angiosperms or flowering plants, which got a floral revolution in the landscape during the Late Cretaceous. Furthermore, the dinosaurs had a profound impact on the diversity of plants. By targeting specific plant species for consumption, they changed the ecological balance within plant communities. This disturbance created opportunity for other variety of plant species to establish them and flourish. Therefore, they could enhance the overall biodiversity in the ecosystem. Additionally, dinosaurs served as agents of seed dispersal, a critical process for plant reproduction and distribution. As they consumed plant and travelled to another land, they transported seeds away from their parent plants, facilitating the spread of plant species across vast distance. This seed dispersion was essential for the expansion and colonization of new habitats by various plants, contributing to the rich type of prehistoric flora.

The migration of dinosaurs was closely related to changes in the local climate. Sea levels, seasonal temperature alters, and changes in rainfall patterns all likely influenced dinosaur migration, which impacted their habitat, food sources, and ecosystem stability. Climate change, a critical factor in the prehistorical world, significantly influenced the migratory habits and overall survival of dinosaurs. Seasonal temperature fluctuations, which could turn the region intolerantly hot or cold, and likely triggered dinosaur migrations to regions with more moderate temperature. This environmental shift would have had profound implications for their possibility of successful reproduction and ability of surviving in these new habitats, as they had to adapt to varying thermal conditions. Moreover, alternations in rainfall patterns played an essential role in shaping the landscape of dinosaur era. Changes in precipitation levels directly impacted vegetation growth, which influenced the ability of food for the herbivorous dinosaurs. In period of drought, a death of plant could have compelled these plant-eaters to venture towards greener grassland, initiating a ripple effect

of migration. Predatory dinosaurs, dependent on their herbivorous prey for sustenance, would have followed this movement, establishing a chain of migration. These climate factors not only dictated the geographical distribution of dinosaurs, but also potentially influenced the evolution of various dinosaur traits, such as thermal tolerance and seeking strategies, as they navigated the challenge posed by a dynamic climate. The interaction between climate, habitat, and dinosaur behavior paints a complex picture of life in age of dinosaurs, where survival was intricately associated with ability to adapt to an ever-changing environment. For example, during the changing seasons, hadrosaurids, a type of duck-billed dinosaur in North America, could have embarked on annual journeys spanning hundreds of miles to search for more abundant food sources and suitable nesting area, which reflected migrations in response to seasonal shifts.

Dinosaurs migration may also triggered by the landform change. Geographic changes, such as the formation of mountains, the diversion of rivers or the expansion of lakes, would have altered the distribution of dinosaur habitats. These changes helped dinosaurs to find the information of new habitats, and likely triggered migration. At the same time, they changed the route of migration due to the changes in landform. The rising and falling sea level is a significant factor that impacts the dinosaur migration. The sea level was related to the dinosaur habitats, particularly those coastal-dwelling species. When sea level rose and coastal areas were flooded, dinosaurs were forced to move to inland. Also, with the rising sea level, the local climate became wetter, which affected the type and distribution of the vegetation. In order to seek the food resource, the dinosaurs changed their habitats and started to move. In comparison, the falling of the sea level created more exposed new land for dinosaurs to exploration, and the isolated areas connected to the main land. However, the dry weather brought by this phenomenon may reduce the vegetation growth, which led dinosaurs to migrate to follow the food sources.

In conclusion, the geographic changes associated with dinosaur migration deeply. The latest discovered dinosaur fossils have provided scientists with valuable clues to the geography of the dinosaur era. The dinosaur fossils record the migration patterns of dinosaurs, so that scientists are able to reveal how the dinosaurs and geography connected to each other in the past and discover the myth of geographic change in the age of dinosaurs.

Climate Change and the Extinction of Dinosaurs

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Dinosaur is one of the most mysterious creatures in the animal kingdom. Because its dominance over the earth hundreds of years ago in the prehistoric period, the entire species came to extinction suddenly and dramatically in the Cretaceous period eventually. Scientists and paleontologists have been embarking on the investigation of the causes of this great extinction of dinosaurs for a multitude of years. Among numerous theories that produced by the experts, the Asteroid Theory is the most common explanation of the perish of dinosaurs. It claims that 66 million years ago, an asteroid hit the Earth's surface, causing a huge earthquake and other disasters like tsunamis, resulting in dust and debris that formed dust cloud in the atmosphere. Thus the photosynthesis system of plant had been disturbed and the food chain had been also destroyed. Nevertheless, it is debated that whether dinosaurs were in decline or not before the strong impact of the asteroid. The Climate Change Theory is also an credible reason for the dinosaurs' demise. But it was always ignored by the public compared with the Theory of Asteroid. Nowadays, humans are facing nearly the same challenging situation with the dinosaurs in terms of the dramatic climate change with a global trend. By exploring the influence of climate change on the extinction of dinosaurs in prehistoric period, the principles of solving the global environmental crisis are revealed.

The variation of the global climate in the Cretaceous period influence the extinction of the dinosaurs. This is due to the fact that dinosaurs were already in decline 50 million years before they were wiped out by the asteroid strike."Even though they were wiped out ultimately by the impact of the asteroid, they were actually already on their way out around 50 million years before the asteroid hit," according to a leader of research, Dr Manabu Sakamoto explained. New researches reveals that the rapid volcanic eruptions, not warming temperatures, were the primary cause of the Triassic-Jurassic extinction event 201.6 million years ago. Dinosaurs emerged from the late Triassic to the end of the Cretaceous Period of the Mesozoic era, a period when Earth's climate was warm and wet with no significant seasonal changes. Besides, temperatures during the dinosaurs era were about 10-15 degrees Celsius higher than they are today, and the warmer temperatures allowed animals to use less energy to maintain their body temperature, leaving more energy for growth and reproduce. Thus initially, dinosaurs thrived in the planet's consistently humid, tropical climate. However, in the late Mesozoic Era that corresponds with the extinction of the dinosaurs, evidences show that the planet slowly became cooler. A lava flows in India noted that a giant, gaseous volcanic plume might have initiated global climate change that threatened the survival of dinosaurs, lower temperatures caused ice to form over the North and South poles and the oceans to became colder. The sudden cooling, often called "volcanic winter", was devastating to many species that were unable to adapt quickly enough to the changing environment. There are terms called ectothermy and endothermy, describes whether most of and animal's heat is absorbed from the environment or generated by internal processes. Because the dinosaurs were cold-blooded animals, meaning they obtained body heat from the sun and the air they could not have been able to survive in significantly colder climates.

Yet some species of cold-blood animals, such as crocodiles, did manage to survive. These evidence above support an environmentally driven decline of dinosaurs well before the asteroid impact.

History is always astonishingly similar. In ancient times, dinosaurs were wiped out by the huge cooling. Now our earth is also in a serious situation, where the climate in a global range is highly fluctuated and intensive. Generally, the global precipitation is decreasing, the temperature level is only increasing from year to year, the glaciers in the Northern and Southern Poles are melting rapidly and massively, and the carbon dioxide levels in the atmosphere are rising, too. These various series of abnormal climate phenomenon represent that our earth is facing a potential crisis that everyone should pay attention to. A tendency is emerged that what the dinosaurs in Cretaceous Period had experienced has an extremely similar tendency with what today's humans are suffering from. For example, the climate of the past is reminiscent of Southern Sweden today. Modern day sweater temperatures in Southern Sweden vary between summer and winter, by 14 degree, from an average of 3 degrees in winter to 17 degrees in summer. This fluctuated is not far from what the researchers conclude about the late Cretaceous Period, when temperatures fluctuated on average by 12 degrees, from 15 degrees in winter to 27 degrees in summer. "Our summer are likely to be even hotter and drier than predicted thus far," according to Nicolas Thibault, a researcher who stresses that he is no longer able to assess the exact temperature change. Moreover, researches demonstrate that the global warming is increasing the amount of water vapor in the atmosphere, resulting in an increase in the frequency and intensity of extreme weather events such as heat waves and droughts. This extreme heat has a direct impact on human health. For instance, extreme heat or cold snaps can increase the risk of infections from influence viruses to dengue fever, and the fertility will be affected. Globally, people over 65 years of age and infants under 1 year of age are at significantly increased risk of heat exposure, especially in 2019, when heat-related premature deaths among people over 65 years of age reached a record high of 345,000. This shows that global warming has posed a serious threat to the health and life safety of certain population. We are facing the same condition with the dinosaurs that live millions of years ago in the same planet with us. By saying this, I mean that the climate change both put the safety of life on the earth in great danger. Although dinosaurs are known as the kind of creature that are far more giant and powerful than humans, they fail to survive under the inevitable threaten from the nature. Nevertheless, the traits that humans are different from the dinosaurs in prehistoric period is that, humans own intelligence and consciousness. The in time awareness of the crisis of humans common homeland—the earth, benefits humans by alarming people taking proper actions to protect environment before the it be destroyed totally.

Obviously, people have been deeply affected by global warming and are aware of the seriousness of the problem. Both the media and governments are promoting measures to improve global climate change. The climate change is just one of the sign that the nature send to people. And the fantastic fossils of dinosaurs are also the nature and history left to humans. The paleontologists and researchers contribute together to make the history speak, warning people what they miss to focus. Learn from the history and taking its value.