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WEEKEND MAGAZINE

The World Could Become One Big 'Jurassic Park'

by Andrew Kimbrell

JURASSIC Park is this year's blockbuster movie. The world appears fascinated with Michael Crichton's tale of scientists genetically engineering dinosaur cells discovered in fossils, and then recreating and cloning the long-extinct species. This is fantasy, but most people are unaware of the real-life exploits of current genetic engineers — science facts that in many cases are as chilling as any science fiction.

Over the last decade, US government and private researchers have expended billions of taxpayer dollars in the creation of tens of thousands of genetically engineered animals never before seen. Pigs have been genetically designed to contain human growth genes in the hopes of creating 'super pigs' that would have more meat. Carp, catfish and trout also have been engineered with a number of genes from humans, cattle and rats to increase their growth and increase reproduction.

Many people are concerned about the creation of novel animals and plants. Of immediate urgency is the threat of 'biological pollution'. When hundreds, and soon thousands, of novel genetically engineered animals are taken out of the laboratory and introduced into the environment, ecological havoc could result. Scientists compare the risks of releasing genetically engineered organisms into the environment with those encountered in introducing exotic organisms — such as Dutch elm disease and the gypsy moth — into the North American environment. At present, no regulations limit release of genetically engineered animals.

Genetic engineers in the United States and Canada now have cloned higher mammals, including cattle. While glitches have occurred, in one case causing the creation of giant 'freak' cows, biotechnologists now feel they can alter animals to be more efficient sources of food and then clone unlimited copies of the 'perfect' lamb, pig or cow.

As researchers genetically engineer and clone plants and animals, will thy take the next step: the engineering and cloning of humans? Many scientists feel the current ability to clone larger animals makes it likely that the first human will be cloned within the next two decades. One writer notes that 'genetic engineering has the potential to create a vast army of identical clones, each produced to some preset specification. Cannon fodder, scientists, opera singers, all could be manufactured to order if the effort that went into putting men on the moon were directed to this new form of exploration.' Human clones also could be used for transplant organs and research embryos.

In the USA and elsewhere, sex-selection abortions have surged. In these, couples ascertain the gender of their unborn child and abort if the gender is 'wrong'. Scientists now tell us that they soon will discover the genes responsible for height, weight, IQ, skin pigmentation, shyness and numerous other non-disease traits. Many couples almost certainly will utilise genetic screening to discover the traits of their unborn children and choose to implant an embryo, or abort a foetus, on these bases.

Biotechnology companies already are making hundreds of millions of dollars each year in the sale of genetically engineered human growth hormone. This is being injected into thousands of children, not because they are sick, but because they are normal but short in a society that favours the tall.

Michael Crichton has said that 'biotechnology and genetic engineering are very powerful. *Jurassic Park* suggests that control of nature is elusive. And just as war is too important to leave to the generals, science is too important to leave to scientists.'

Policy-makers should take heed. Now is the time to limit genetic engineering to the treatment of serious disease, and to ensure that life forms are not engineered, cloned and patented. As the technology of genetic engineering accelerates, we must make sure that human choices control technology rather than technology controlling human destiny.

— *Third World Network Features*

Andrew Kimbrell is policy director for the Foundation on Economic Trends, a biotechnology group.

Although 'Jurassic Park' is fiction for now, it could become a reality if no immediate control is put on genetic engineering.

'Biotechnology promises the greatest revolution in human history. By the end of this decade, it will have outdistanced atomic power and computers in its effect on our everyday lives. But the biotechnology revolution is...uncontrolled. No one supervises it. No federal laws regulate it. There is no coherent government policy, in America or anywhere else in the world. Genetic research continues at a more furious pace than ever. But it is done in secret, and in haste, and for profit.'

Michael Crichton, author of *Jurassic Park*, in the introduction to the book.

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Lack of Oxygen, Not Asteroid, Killed Dinosaurs

AP reports from Boston

DINOSAURS gasped their way to extinction when oxygen became too scarce to support their inefficient respiratory systems, according to a new theory that challenges the notion a giant asteroid wiped them out.

The hypothesis is based on an analysis of ancient air trapped in 20 million-year-old fossils. It casts doubt on the widely held theory that the dinosaurs starved to death after a giant asteroid hit the planet 65 million years ago, sending up dust that blocked the sun and killed plant life.

"They had been on their way out" by the time the meteor purportedly hit, said Gary Landis, a US Geological Survey geologist and one of four scientists who were to present their theory at the Geological Society of America's annual meeting on October 27.

"The dinosaurs did not keel over with their feet up in the air, but they found it increasingly difficult to compete in their environment."

The theory also carries implications for humans because it presumes that worldwide atmospheric changes can occur 10 to 20 times faster than previously thought, the researchers said.

Landis and his colleagues tested air found trapped in amber in coal trenches in east-central Minnesota. They found that the proportion of oxygen in the atmosphere fell from a high of 35 per cent to a low of 28 per cent within the relatively short time of between 300,000 and 500,000 years.

"It would be like taking a dinosaur for a stroll from sea level up to 6,000 to 7,000 feet (1,830 to 2,135 meters)," Landis said.

The oxygen-rich air resulted from volcanic activity that pumped out carbon dioxide, which was converted into oxygen by plants.

Dinosaurs evolved during this time, when oxygen was plentiful, and had a weak respiratory system, according to the theory known as the Pele Hypothesis. Pele is a Polynesian goddess of volcanoes.

"The dinosaurs survived and thrived in that environment because they didn't have to have anything more efficient," Landis said.

An 80-foot-long (24.5-meter) apatosaurus, also known as a brontosaurus, had a set of nostrils about the same size as a horse's, for example, said Richard A Hengst, a Purdue University physiologist.

"There were some serious problems with trying to get air into that animal," Hengst said.

"What I began to realize as I looked at this was that the only way they could carry out even normal activities was to have more oxygen in the air in the first place," he said. "Dinosaurs could not have existed without having more oxygen in the air to start with."

The scientists said that smaller cold-blooded animals around at the time, such as snakes, lizards and turtles, were able to survive because of their relatively modest oxygen needs. So did some of the smaller mammals with more efficient respiratory systems, the scientists said.

About two-thirds of known species of dinosaurs were gone by the time the asteroid is believed to have fallen in what is now Mexico's Yucatan Peninsula, the researchers believe.

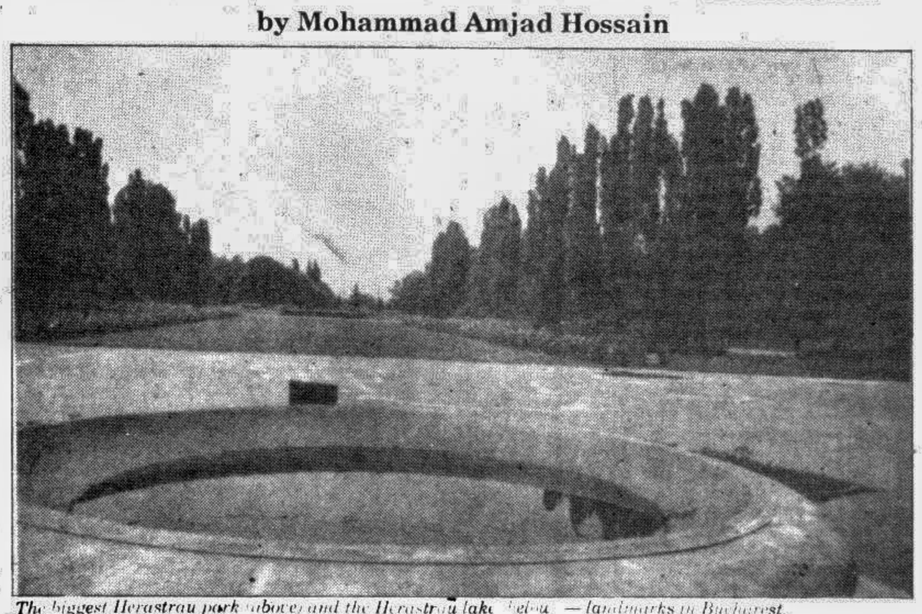
"They were basically all gone, fully extinct" by then, Landis said. "It was a gradual extinction."

Scientists salvaging dinosaur's fossil

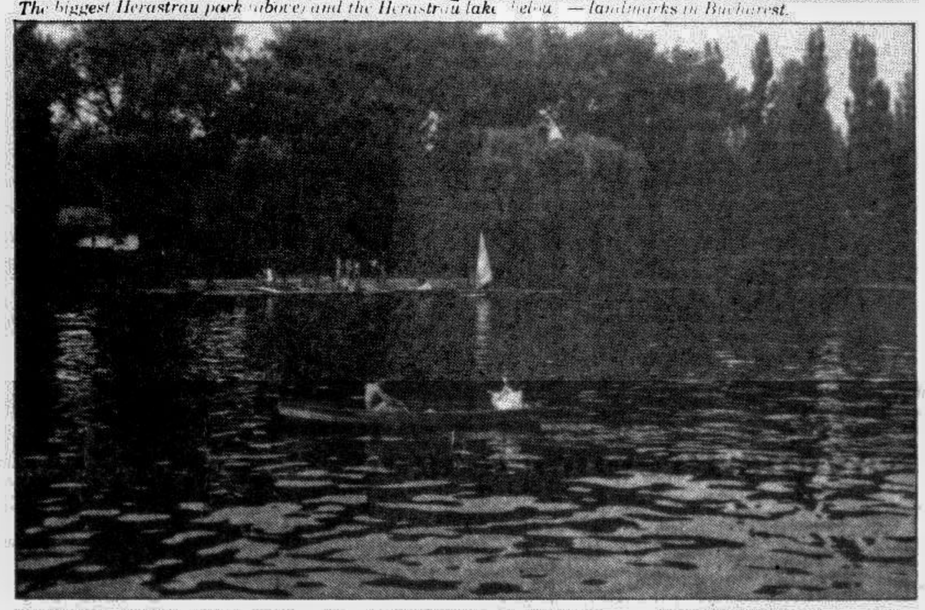
People and Places

A Tale of Two Cities Bucharest and Sofia

by Mohammad Amjad Hossain



The biggest Herastrau park (above) and the Herastrau lake (below) — landmarks in Bucharest.



SITUATED in the south-eastern part of Central Europe and covering the northern portion of the Balkan Peninsula on the lower Danube and bordering on the Black Sea, Romania has a history which dates back to third millennium BC. The Romanians are the descendants of the Dacians, who established independent states in this area in first century BC, and the Romans ruled them for 165 years in the first and second centuries AD. Three independent states were formed during these periods in Wallachia, Moldovia and Transylvania, which comprise to-day's Romania. These states were occupied by the Turks in sixteenth century. Transylvania was annexed by the Austro-Hungarian empire in 1699. Wallachia and Moldovia became independent in 1856, formed a Union in 1859, named the new state as Romania in 1862 and declared it a constitutional monarchy in 1866. On 30 December, 1947 King Mihai was forced to abdicate, the monarchy was abolished and Romania was declared a people's republic which was later renamed as a socialist republic in 1965, and became only Romania following overthrow of the regime of Nicolae Ceausescu on 23 December, 1989.

Bucharest became the capital of Romania in 1862. Sprawling over 605 square miles Bucharest stands in the Romanian plain on the Dimbovita river, 30 miles from the Bulgarian frontier. The river passes through Bucharest but the city does not lie divided like Budapest (Buda and Pest), the capital of Hungary. It would not be an exaggeration to say that the width of the river is comparable with that of a canal in Bangladesh, but its depth is undoubtedly big.

Until 1866 Bucharest was a primitive medieval town, but it developed as a city during the period of Ottoman empire when the main economic focus was concentrated on it. It became the capital of Wallachia in 1659. This growth coupled with changes in physical structures all around the city had made Bucharest 'the Paris of the East' (Eastern Europe). Bucharest became a modern city, but it was turned into a city of small apartments, demolishing old architectural buildings by Ceausescu regime. It gradually expanded with rising multistoried buildings and a gigantic white marble Palace of the People which was planned to house Romania's Parliament and several thousand top Communist bureaucrats. This Palace built at a huge cost and human suffering is, however, a monumental architectural feat of Romanian engineers and architects. The building was constructed on the pattern followed by the Emperor Nero of Rome on the Southern Slope of the Esquiline Hall. The tallest building is 24 storied Hotel Intercontinental which is located at the heart of the city facing National Theatre which has a long tradition. Nearby is the University of Bucharest, founded in 1819.

Fortified Monasteries

During the rule of Prince Constantin Brinco Veanu, (1688-1714), large and broad thoroughfares were built in Bucharest, which are known as *pouduri* i.e., streets paved with logs. Such large roads are not seen in the neighbouring countries. Another noticeable character of the city is that it has many fortifications and fortified monasteries and churches. It would not be out of place to point out that Bucharest is the city of Churches and monasteries like Dhaka — the city of mosques. It has many churches which are built in Byzantine style. The city's Orthodox, Catholic and Evengelical churches and monasteries, some of which date back to the sixteenth century, are repositories of artistic treasures. Apart from the Curtea Veche (old court) Church — Mihai Voda monastery (1591), the Antim monastery (1715) and the churches of Stavropoleos (1724) are also of considerable architectural interest. Several noted Orthodox churches in Bucharest of historic and cultural significance, including SFintu Vineri and the 18th century Spiridon, were demolished. There are also a Roman Catholic cathedral, several Protestant churches and a number of synagogues.

During the communist regime, religious practice was active and widespread, although closely controlled and circumscribed by the government. The government subsidized some religious groups, but actions by central and local authorities, which abridged basic religious rights, were a continuing source of concern. While I was on a visit in 1987 to Caldrusani monastery, which was set up in wood in seventeenth century, I found to my amazement a few Romanian elderly ladies were offering prayers in the church imperceptibly. Founded by ruling Prince Matei Basarab in 1636, Caldarusani monastery contains a collection of medieval art objects and a few early paintings by renowned Romanian painter Nicolae Grigorescu.

The situation has radically changed following popular uprising in 1989. Large number of people are assembling in the churches to offer prayer on Sundays, in particular, without any fear of humiliation. Romania has other traditional religions, including Islam. There is a sizeable number of Muslims in Romania of whom around to hundred are living in Bucharest. Muslim community comprises some 52,000 members of Turkish and Tatar nationality. Following invasion of south-eastern Europe by Turkey in the sixteenth century, Islam reached the other parts of Balkan peninsula. There is a mosque (Jamia) in the outskirt of Bucharest where Muslims offer regular prayers and the mosque is crowded during the time of Eid congregations. The origin of the mosque was not traceable, but the present Imam of the mosque, who is paid by the government, said that it was set up during the time of Ottoman empire. The Imam, who is of Turkish origin, conducts Khutba, both in Turkish and Romanian languages. He enjoys respect and honour. Most of the embassies of the Muslim countries invite him on national and religious occasions. Although Bucharest mosque is known by itself but the grand Mufti is elected from Constanta Mosque which is the biggest mosque in Romania.

Cultural Activities

Bucharest is the seat of cultural activities. Apart from Philharmonic orchestra and many other professional and amateur musical groups, Bucharest has 19 theatres, some of which like National Theatre, the theatre of opera, have long traditions.

Going also by the name of garden city owing to its vast expanses of verdures, Bucharest is surrounded by beautiful forests and lakes. Herastrau Park on 470 acres encompassing an village museum, an open air theatre and a flower exhibition; Cismigiu lake and garden; Youth Park; Liberty Park and Botanical Garden are worth-seeing, in Bucharest.

Among other notable museums, the village museum which founded in 1936 is the largest and possibly second of its kind in Europe. It is made up of peasant houses numbering 312 representative buildings brought from various parts of the country. These buildings include stables, barns, store houses, summer cook houses, wells, road side cross, old wood church, wind mill and folk technique workshops which project Romanian folk architecture. This museum provides information on the life and activities of the people of the past centuries. The attraction of the museum is that some of the houses in this museum resemble housing pattern in villages of Bangladesh.

Imposing National assembly building, Cotroceni Palace, Romanian athenaeum, notable for its columned facade (1888), the Palace of Justice in French neo-Renaissance style (1895) and the Kisselef Park modelled on the Parisian Champs-Elysees — attract attention of the travellers. Apart from buses and trolley buses, electric tramway operates along the thoroughfare called OBOR — Cotrocent. Brainchild of Nicolae Ceausescu, Bucharest sub-way began operation in 1979 covering eight kilometres. At present the sub-way covers approximately 60 kilometres. Seventyfour Romanian made trains carry daily over 800,000 passengers, the number of passengers increase during winter season. The sub-way, built entirely by Romanian raw materials and equipment and their engineers, is regarded as successful workmanship.

It is said that Bucharest was among the first cities in the world to be lighted by kerosene lamps in 1856 followed by gas in 1871. Electricity was introduced in mid 40's.

From Otopeni international airport one can enter the city after crossing ten miles route overviewing attractive natural landscapes with meadows and oakgroves. The road takes turn from Scintela square which has been renamed as Piata Presei Libere after the fall of Ceausescu in 1989. From here a number of newspapers are published daily. As a result it is known as Fleet Street of London. The old Scintia House is the largest printing enterprise in Bucharest. The statue of Lenin which was erected in front of the Scinteia House as a mark of gratitude to the former Soviet Union was demolished by the people of Bucharest overnight following popular uprising in 1989. The main thoroughfare passes by Arcul d' Triump (a triumphal arch) which was built in 1930 to commemorate the success of the unified Romania after the First World War. It may be of interest to note that Bucharest has witnessed many historic developments which include the Russian-Turkish treaty of 1812 and the treaty which ended the Balkan wars in 1913.

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FROM Bucharest one can travel by road, train and plane to reach Sofia capital of the Republic of Bulgaria. I had the privilege to travel several times by train to Sofia which takes ten and a half hours. Situated some 600 meters above sea level, Sofia is dominated by the snow capped peaks of the Vitosha the Lyvlin and the Lozen mountains, and is the country's political, industrial and cultural centre. Dating back some 7000 years, the centuries of change are reflected in the present day capital in a delightful land of past and present. Sofia is well placed for communication with Belgrade and Istanbul, and with the lower Danube and Struma valleys.

Traces of Neolithic settlements of the 4th Millennium BC have revealed that Sofia is one of the oldest of European urban communities. According to archaeological evidence, the Serdi, a Thracian tribe had established a settlement near the hot mineral springs as early as the 8th century BC. This community came under subjugation of the Romans who named the place Serdica. It became the autonomous town of Ulpia Serdica during the rule of the Emperor Trajan (98 — 117 BC). From the 3rd century the town became the main centre of the Roman province of Inner Dacia. The Chapel of St. Gorge, the church of St. Sophia date back to 4th and 6th century. In the 6th century, Byzantine influence increased under the reign of Emperor Justinian and the town derived its name from the restored church of St. Sofia.

Sofia was occupied by the Romans in 29 AD, sacked by the Huns in 447 and then fortified by the Byzantines. During 482 years Ottoman-Turkish, rule Sofia was the seat of the Turkish Governor General, and the town gradually gained distinctive oriental appearance. It has declined to the status of provincial town in mid 19th century. It grew in both area and population following liberation from Turkey on 4 January, 1878 with the help of Russian troops. After the fall of dictatorial communist regime of Tudor Zhivkov, the government of Bulgarian Socialist Party declared 4th January as the national day. The city played a leading role in the anti-fascist movement of World War-II. Presently the city extends across the terraces of the Iskur river and its tributaries. The average altitude is 550 metres, but it reaches 700 metres at the Vitosha foothill. At the foothill, facilities have been made for recreation while several cable lifts could be used to go upto the highest peak of Vitosha mountain. New houses along with historical monuments, including two mosques and parks, have added attraction to Sofia.

The city covers 1,310 square kilometres in the municipal area (Gradska Obshtina) and it is divided into seven administrative units.

Agricultural Country

The country is of a predominantly agricultural character but Sofia enjoys the status of an industrial centre with engineering and metal working industries, ferrous and non-ferrous engineering, plants producing electronic components and equipment, food industry, textiles and footwear factories. About three fourths of the national printing industry is located in the city.

Sofia has become a modern commercial market with specialised shops, hotels and restaurants. Hotel Sheraton, Hotel Vitosha, the Grand Hotel Sofia, Hotel Plizka and many other hotels, motels and private guest houses are catering to the needs of local people and tourists while modern buses, trolley buses, trains and taxis serve them on roads. To me the taxi and bus fares appeared quite cheap.

One interesting development to note is that consumer goods were readily available in the market before fall of communist regime of Tudor Zhivkov and were drained out of the city by tourists and diplomats whereas such items, practically became rare commodities in post revo-

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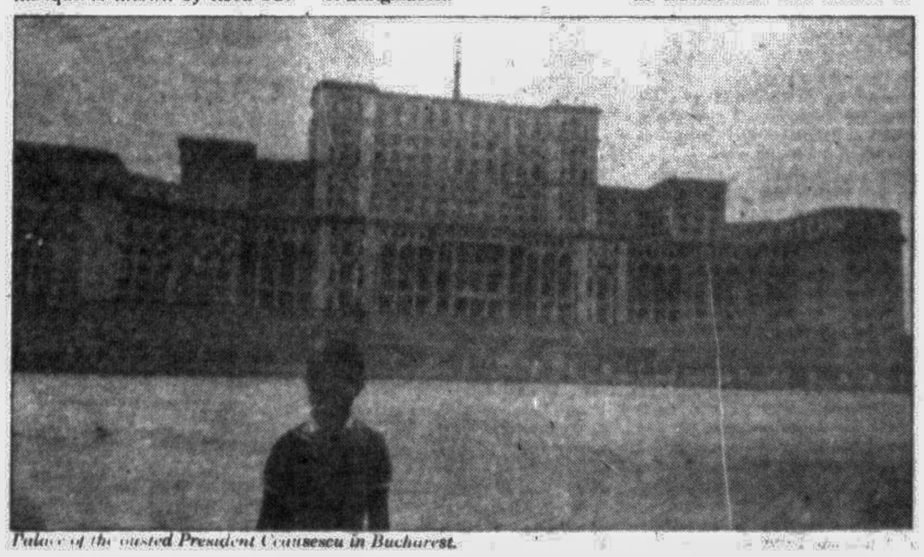

Palace of the ousted President Ceausescu in Bucharest.