

Joseph Alsop

Rewriting Human History

PHILADELPHIA—The first and most decisive chapter in the history of civilization is being briskly rewritten. The revision began in Thailand. It is being completed here in Philadelphia. It is not so drastic as the 19th-century scientists' rejection of Archbishop Usher's long-accepted proof that God created the universe in 4004 B.C. But it is quite drastic enough to be causing a major scholarly storm.

All this began at a large, low mound in northeast Thailand, where the little village of Ban Chieng sits on top of an enormous prehistoric graveyard. The countless ancient graves contain offerings to the dead. The most visually striking offerings are richly swelling

Mr. Alsop writes a monthly column.

pottery vessels of unique design, with a mauve-to-buff body decorated with swirling linear patterns in vermilion. But the sensational finds are the bronze bells, bracelets, axes and adzes that the Ban Chieng graves also contain.

The Ban Chieng graveyard is being excavated co-operatively by one of the Thai government's archaeologists, Dr. Pisit Charoenwongsa, and Dr. Chester Gorman of Philadelphia's University Museum. The museum's Applied Science Center is also doing the tests that date the material from Ban Chieng. It is the evidence of the tests, in turn, that makes the Ban Chieng material sensational; for the tests give the Ban Chieng bronzes dates between 3500 and 4500 B.C.

Reports on the Ban Chieng finds have begun to be published. But to understand why they are so sensational, you have to begin at the beginning—with the reconstruction of the human past that long ago replaced Archbishop Usher's Bible-based chronology. Before the industrial revolution, in brief, there were two other, vastly earlier revolutions that even more completely transformed the patterns of human life on earth.

The first was "the neolithic revolution," as the prehistorians now call the introduction of settled farming somewhere between 10,000 and 12,000 years ago. Without the food surpluses that farming produces, the entire human population of this planet could never have numbered more than the present population of a single medium-to-big city of the modern age.

The "metallurgical revolution" then followed after some thousands of years. Without worked metals, mankind could never have achieved all those improvements in war-making, tool-making, and kindred activities that have so vastly raised the quality of life for all of us. What we are pleased to call civilization was in fact born of the metallurgical revolution; and it is this part of the story of the human past that is being torn to bits and put together again in most unexpected ways by the bronzes from Ban Chieng.

To put the meaning of these bronzes in a more contemporary context, you need only think of the all-transforming industrial revolution that began in England and Western Europe. Then suppose that historians and archaeologists had come up with certain proof that, instead of being Western in origin, the industrial revolution really began in Ceylon or Java. The resulting changes in our picture of the past would surely take a bit of getting used to.

Until very recently, in fact, the world's archaeologists, prehistorians and cultural historians were just as sure they knew where the neolithic and metallurgical revolutions occurred as we are sure today about the scene of the industrial revolution. Civilization was universally supposed to have been invented in the Middle East. Here, it was believed, settled farming and serious metal-working both began for the first time in human history.

In the past couple of decades, however, unsettling new discoveries have begun to be made in more than one area, including the Middle East itself. Here, the most upsetting find was made by the British archaeologist, James Mellaart, at the Catal Huyuk mound in central Turkey. The mound contained the remains of what can only be called a proto-city dating from the seventh millennium B.C.

The proto-city at Catal Huyuk had a remarkably well-developed cult of a somewhat macabre character. Among the standard decorations of the many

temples Mellaart found in Istanbul, there were numerous female breasts carved into the walls. In the Middle Ages, some years before American archaeologists joined the work there. The turning point occurred when the collector member of the Thai royal family, Princess Chumbhot, sent some of her Ban Chieng pottery to Philadelphia to be tested for dating at the museum. Thermoluminescence tests, which measure residual radioactivity, gave a date around 4500 B.C. for Princess Chumbhot's Ban Chieng pots—yet some of the pots had been found with bronzes inside them!

That sent the university museum's remarkable leader, Dr. Froelich Rainey, hurrying off to Bangkok to offer a co-operative arrangement to the Thai government's archaeologists. The result was the joint dig at Ban Chieng, which has now been carried on for two successive seasons by Drs. Gorman and Pisit Charoenwongsa. Great quantities of new material have been found, including gold and silver ornaments. In Bangkok this summer, where I was permitted to see Princess Chumbhot's collection and other Ban Chieng material, the experts were already predicting great things for the future.

That does not mean that any coherent social picture can as yet be deduced from the Ban Chieng material. The mound is a graveyard, pure and simple. It is one of many such mounds, covering a huge area of northeast Thailand; so the Ban Chieng culture flourished over a wide area. No habitation site has been found, however, so their graves are the only evidence for the way of life of the Ban Chieng people.

In some ways, the food offerings, showing that the Ban Chieng people cultivated rice, are just as important as the bronzes among their grave goods. Ban Chieng has in fact provided the earliest evidence of cultivated rice, that staple of the Asian diet. Over a long time will be needed, moreover, before there is anything like a scholarly consensus about the meaning of the Ban Chieng finds. Passionate Middle Easterners like Dr. Theodore Wertheim of the Smithsonian Institution have thus far even refused to accept the dates provided by the University Museum's Applied Science Center. Thermoluminescence is unreliable, they say, and they also attack the more dependable carbon-14 dating of 3500 B.C. that was cited by Dr. Chester Gorman in his Bangkok interview the other day.

Dr. Rainey, meanwhile, like the buccaneer of archaeology that he has always been, is already suggesting that bronze-making traveled westward, from Thailand to the Middle East. In Ur of the Chaldeas, he points out, bronze was still a most uncommon metal; and its essential alloy, tin, was valued more highly than gold itself. This, he suggests, means that Ur depended on tin exports from the region around Ban Chieng.

This may be a bit overbold. But the total transformation of early Chinese history—no small matter in itself—will be an automatic sequel if further testing sustains the Ban Chieng bronze dates. For many years, of course, scholars have agreed that rice cultivation came into China from the south and then spread northward to the earliest truly Chinese centers by the time of the Shang dynasty that began about 1700 B.C.

Now, however, confirmation of the Ban Chieng bronze dates will mean that bronze technology went north along with rice cultivation from the Southeast Asian area that all good Chinese have always regarded as barbarous. In sum, the Chinese scholars will be even more horrified by the new evidence than the Middle Easterners like Dr. Wertheim at the Smithsonian. But rear-guard actions against new facts are familiar dramas of scholarship; and no new historical truth has ever been established without much prior commotion.

Some of the recent finds have been "a bit like finding evidence for a nuclear power plant dating from the Middle Ages."

thing but ornaments. The organization of more complex societies, fully dependent on metal tools and weapons, therefore had to wait until the Bronze Age opened. Even three years ago, the entire scholarly world would have been convulsed with roars of laughter if anyone had suggested that northeast Thailand was the first place where men added tin to copper to get bronze. Yet the region of Thailand around Ban Chieng is actually the only place on earth where ample tin deposits coexist with large copper deposits.

Until three years ago, however, everyone knew that the Bronze Age began in the Middle East in the middle of the third millennium B.C. Everyone further knew that bronze only came to the Far East about half a millennium later, or a bit after 2000 B.C., when what we now call China began to develop from bronze-using centers in the Yellow River Valley. By some means or other—no one knew quite how—Chinese bronze technology was further thought to have been borrowed from the Middle East.

This is the crucial chapter of past history that the Ban Chieng finds promise to rewrite in toto. One has to say "promise," as yet, for another winter of elaborate testing will probably be required before the Philadelphia University Museum's Applied Science Center can announce ironclad proofs of the very early dates for the material from Ban Chieng. But after this summer's digging season, the responsible American archaeologist, Dr. Gorman, announced in Bangkok a few days ago that he already regarded the evidence as "conclusive." And he added that he considered 3500 B.C. as a conservative

