

mother." This term refers to the fact that the DNA mitochondrial (non-nuclear) genetic components in the cells of the various living human races today have been found to show relationships which indicate that all the races had to have come from either one woman or a small group of closely related women. Of course the eggs produced by these women had to be fertilized to produce offspring, but the male sex cells do not contribute any mitochondrial DNA to the offspring. So, the mother is the more distinctive parent, with respect to mitochondrial inheritance. (Mitochondria are the very small organelles within all our body cells, which release energy from the food substances within the cells. Each of them contains a small amount of DNA which is somewhat different from the DNA of the nuclei of the cells.)

The research which resulted in the conclusion that all modern human races came from a single source or "mitochondrial mother" group was done mainly by the geneticist Rebecca Cann of the University of Hawaii. She and her assistants in different parts of the world made mitochondrial tests on women who were from all the main areas and races of the world. They concluded that all had been derived from a single female source sometime between 100,000 and 200,000 years ago. Some of the geneticists have jokingly called this mitochondrial mother female group "Eve," but they are not referring to the real Biblical Eve, which we accept as "the mother of all living" (Genesis 3:20). (The story of this research was written up in many magazines and journals in 1987 and 1988. The January 11, 1988, Newsweek, p. 46-50 gives a fairly reliable account and explanation of it, on a semi-popular level.)

If this evidence concerning human origins from a single mitochondrial source is valid, it presents some problems for the previous paleoanthropological explanations of how the known human races of Asia and Africa arose. It has been supposed that some of these races arose from Homo erectus of the Far East (Asia), and some from Homo erectus of Africa, perhaps 500,000 years ago. But if all present-day races were derived from a single, small group of women (and men) not more than 200,000 years ago, many parts of the previous evolutionary explanations can not be correct.

It remains to be seen just what will come out of the conflict between the evolutionary paleontological method of studying the origin of man, and this new, genetic method (which also assumes evolution, but puts the origin of man at about 200,000 years instead of $1\frac{1}{2}$ million). But one important benefit which can come out of the new genetic evidence for a "mitochondrial mother," may be the pointing out of how biased, and sometimes truly hypothetical, the dating of the hominid fossils has been during the past decades. As was pointed out above, even though radiometric methods of determining dates can be reliable when properly used, the application of potassium-argon dating to the discovered fossils has almost always--if not always--been of low quality.

Likewise, as was explained in the paragraphs on the Java and Peking hominid discoveries, the dating methods used for these fossils did not produce reliable results. But the anthropologists did finally have to recognize that the Java and Peking skeletons were very similar to those of modern man, and change the early generic names of them (Pithecanthropus and Sinanthropus) to Homo. (See page 81, above.) Nevertheless, when they changed the names to Homo, they did not propose a more recent date, even though they were still not able to find any solid evidence of the old dates which they had been using. Evolutionary anthropologists and teachers simply find it difficult to discard their long-held bias for million-year periods for the development of modern man.

Because of all the inconclusive evidence regarding the dates of the progenitors of modern man, no scientist or other person needs to feel embarrassed to reject the older dates and to accept the 200,000-year date (or even one-half that age) for the origin of man.