## Reevaluation of the origin of races

In his book *The Origin of Races* (1962), Carleton S. Coon argued that the Caucasoid or White race crossed the threshold from *Homo erectus* to *Homo sapiens* at least 250,000 years ago. The Congoid or Negro race, he said, remained at the *Homo erectus* level until perhaps as recent as 40,000 years ago. Richard G. Klein of the University of Chicago now disputes Coon's theory. Klein says the dating of the skulls on which Coon partly based his argument "is almost certainly incorrect."

Coon's evidence came from four skulls, two European and two African. The European specimens, representing the White race, were the well-known Swanscombe and Steinheim skulls. They are recognized as among the earliest with brains large enough to qualify as *Homo sapiens*. The African specimens, representing the Black race, were the Broken Hill and Saldanha skulls. Known collectively as Rhodesian man, they are considered by some anthropologists to be the African version of the Neanderthal type.

Klein does not argue specifically with the typing of the skulls, but in the Aug. 3 NATURE he presents "recent evidence that these specimens are in fact far older" than the 40,000 years assigned to them. The specimen discovered in 1921 in Broken Hill, Northern Rhodesia (now Kabwe, Zambia), was found with a collection of Early Stone Age artifacts. Early Stone Age artifacts were also associated with the Saldanha skull when it was found in 1953 northeast of Saldanha Bay, South Africa. The radiocarbon dates available at the time suggested that 40,000 years was a good date for the type of tools found with the African skulls. But Klein says a recent reevaluation of the radiocarbon chronology of the southern African Stone Age indicates that the end of the Early Stone Age probably lies beyond the limits of the carbon-14 technique. If so, the African skulls need to be redated by other methods.

Klein says recent geological evidence places the Early Stone Age as far back as the Middle Pleistocene—more than 100,000 years. Evidence from animal bones associated with the skulls takes this date back even further. The bones are very similar to fauna found in two beds at Olduvai. Firm dates from the Olduvai beds have not been published but a combination of paleomagnetic evidence and sedimentation rates has produced a tentative date between 700,000 and 300,000 years ago.

The precise age of the skulls is uncertain, Klein admits, but he says the artifactual and faunal evidence suggests they are more than 125,000 years old. "It is clear," he concludes, "that they are much further back on the *Homo erectus-Homo sapiens* continuum than Coon thought, and certainly do not constitute good evidence for a very late persistence of *Homo erectus* in sub-Saharan Africa." □

## From dust to planetesimals

Astronomers think they understand how the cooling gas in the early solar nebula condensed to form dust grains and later how the larger planets were formed from collisions of objects several miles in diameters (planetesimals). But how the planetesimals themselves formed from the dust has been a puzzle.

Now Peter Goldreich and William R. Ward of the California Institute of Technology think they have the answer. In the Aug. 1 ASTROPHYSICAL JOURNAL they propose that the planetesimals were formed from gravitational collapse.

The scenario goes like this: The original solid particles condensing from the gas formed a thin, plate-like disk of debris orbiting the sun. Then the combined gravitational attraction of countless numbers of these grains broke up the disk to form separate clusters. Each cluster was composed of bits of debris all attracting one another. As the space between the grains continued to shrink, portions of the cluster collapsed in on themselves to form larger objects. These would form planetesimals about a half mile in diameter. "It took only one to ten years to produce bodies of this size," says Goldreich.

Clusters containing 10,000 of these larger bodies continued to rotate around themselves in a delicately balanced equilibrium, prevented from contracting to form one object by the strength of their rotational patterns. As the planetesimals interacted with the hydrogen gas in the nebula, however, their angular momentum was slowed and they also began to contract upon themselves. It would take several thousand years to form the larger planetesimals five miles in diameter from the one-half-mile-diameter bodies.

Once this large the planetesimals could then grow by direct encounter into planets.

## An 'improved' corn may retard growth

One of the Green Revolution's greatest successes has been to improve the protein content of corn (SN: 7/21/73, p. 42). One particular corn strain—the opaque-2-mutant—now contains all of the amino acids that people need in their diets. It is being used to improve the health of peoples in developing countries. In Colombia, children with the protein-deficiency disease kwashiorkor recovered on diets of the improved corn.

But the improved corn may have a drawback that rules out its being the sole source of food for children. In studies of healthy adult volunteers, two investigators at Boston City Hospital have found that a diet based exclusively on the corn decreases the secretion of growth hormone. The researchers, Thomas J. Merimee and S. Edwin Fineberg, attribute the decrease in growth hormone to the corn's high content of carbohydrate. They found that diets that were lower in carbohydrate content and equal or lower in total calories than the improved corn diet did not suppress growth hormone secretion.

Might children whose diet is largely composed of the corn also experience a decrease in growth hormone? No one knows. "Nor does anyone know if ultimate linear growth with this diet will be normal or abnormal," Fineberg told SCIENCE NEWS. Some investigators are now attempting to get these answers by conducting a study of children in Brazil. If the improved corn does turn out to have an adverse effect on growth, the corn can still be used to improve the health of children in developing countries, says Fineberg. But the children should also eat some other foods that are very low in carbohydrate, to counter the high carbohydrate in the opaque-2-mutant. □

## Emergency medicine: Veto may face override

Protesting that funding emergency medical service (EMS) is fundamentally a local matter, President Nixon last week vetoed the Emergency Medical Services Act of 1973, which would provide broad Federal assistance to communities trying to improve care.

Backed by the American Medical Association and almost every other major health organization in the country, the bill had passed by a unanimous vote of the Senate and by a 3 to 1 margin in the House. An angry Senate quickly overrode the veto and House leaders confidently predicted they could also muster the necessary