

Paleontology: New pieces for a new puzzle



Puzzle piecers (left to right): F. Clark Howell, Mary Leakey, James M. Hester, Richard Leakey and Clifford J. Jolley with pieces of the puzzle.

NYU

The jigsaw puzzle known as paleontology will, if and when it is ever fitted together, yield a detailed picture of the family tree of the human race. But the job of getting all of the pieces into position is a frustrating one because there is no picture on the side of the puzzle box for the archaeologists to use as a model.

It is possible that the puzzle will never get put together. So it is time, says Clifford J. Jolley of New York University, for the archaeologists to sit back, reevaluate all of the pieces and start the puzzle all over again.

And this is just what was going on this week when 30 of the puzzle workers met in New York and laid their pieces on the table. The conference, the first of its scope in the past 10 years, was sponsored by the National Science Foundation, the Wenner-Gren Foundation and New York University. It included researchers from all of the important African archaeological sites.

It is not likely that the participants in the week-long conference will put the puzzle together or even decide which end is up. They might, however, agree to throw out some of their preconceived ideas about the final picture and look for new ways to rearrange the various pieces of the puzzle.

Work like that of C. Donald Johanson of Case Western Reserve University in Cleveland may force them to. He came to the conference immediately after completing three months of work in Ethiopia. And he brought with him what may turn out to be a whole box of pieces to the puzzle that no one even knew existed. Very little work has been done in Ethiopia, but in a short time Johanson's expedition has come up with a knee joint of an upright hominid and a skull fragment that may be more than three million years old. The eastern lowlands of Ethiopia, he says, could be very rich in fossil evidence and

as important as the other major sites.

Another researcher who is intent on starting the puzzle over again is Richard E. Leakey. After his 1972 expedition on the eastern shore of Lake Rudolf in northern Kenya, he described a skull (almost three million years old) that did not fit into the then-accepted version of human evolution. The size and age of the skull suggested that at least two types of early hominids existed in the same place at the same time (SN: 11/18/72, p. 324). And the summer of 1973 has yielded two more partial skulls that do not fit into the puzzle as it now stands.

After a preliminary examination of the 1973 fossils, Leakey says one of them may be similar to the 1972 find. But the other fits into no preconceived notion. Its size and shape seem to be totally outside the range of others of the same age—three million years.

With this evidence, Leakey has decided that a complete revision is necessary. The 1972 season suggested two contemporary lines of hominid. Leakey, therefore, begins his revision by throwing out the old names (*Homo* and *Australopithecus*). He just calls them "things A and B." And the 1973 finds may represent a thing C. Leakey isn't sure. "Enigmatic," is what he says.

In the past, Leakey has been very careful about rearranging the pieces of the puzzle in public. Now, he seems to be convinced that no progress can be made along the presently accepted lines of thought. The 1973 finds may be enigmatic but Leakey told SCIENCE NEWS that he is going to start saying some things that he feels need saying. He expects to shock some of his colleagues but, he says, it is time to say these things and get some new lines of conversation under way. Leakey's preliminary report on his enigmatic finds has been submitted to NATURE. He expects it to be published in March. □

Blunt talk to solar energy supporters

Solar energy seems such a reasonable alternative to the dirty combustion of limited fossil fuel that an increasing number of businessmen, legislators and citizens are asking why more has not been done to encourage development of this apparently perfect power source.

Some interesting answers to that question emerged last week from meetings in Washington of solar industry representatives, a heterogeneous mix of basement-workshop tinkers and "Fortune 500" executives. The executives met first, called together for an interim report on a study being conducted by the Arthur D. Little Co., aimed at finding the best way to introduce solar energy to the general marketplace. Among the 67 companies to ante up the \$15,000 admission price were General Electric, Westinghouse, DuPont, leaders of the glass, chemical and aerospace industries and, significantly, 20 Japanese manufacturers.

The meeting was closed to all but paid participants, but SCIENCE NEWS has learned that A. D. Little's message was decidedly bullish. Solar energy, the companies were told, indeed has market potential, but establishing the market will be difficult. Incentives, such as tax write-offs for expensive initial installation, could speed the market, but Little reportedly recommended that quickest public acceptance would come for small, low-temperature devices that can be sold at a relatively low cost. In effect, the sales pitch recommended is, "Here's how I can save you 20 percent on your heating bill for only an \$800 investment," rather than, "For \$5,000 I can heat your house for free for 20 years."

The latter approach has, of course, been popular for some years with the more enthusiastic advocates of solar energy, represented principally by small companies that plan for large-scale operations while existing on solar heaters for swimming pools. At a meeting called to form the Solar Energy Industries Association, a handful of big industry representatives clustered together in the rear seats while a hundred-odd smaller entrepreneurs got an unusually stern lesson in economics and political science from various speakers.

Answering criticism that the government has not provided enough help in developing a solar industry, Gorman C. Smith of the Atomic Energy Commission—which is now in the solar R & D funding business—lectured his audience on what he called "The First Law of Economics: That there is no such thing as a free lunch." Solar