

Skulking after ancient bones

By Dave Fogerson
Of the Emerald

Poking around in human remains hardly sounds appealing to most people, but to University professor John Lukacs, it's the key to discovering the past.

Poring over the skeletons — the skulls and shards of jawbones and teeth — with a hand lens, Lukacs searches for clues revealing the health and condition of people before their demise.

He isn't a forensic pathologist, like television's Quincy, although he sometimes works in this capacity for state and local police and the county coroner. He's not a detective either, although his sleuthing methods are similar to that line of work.

Lukacs is a physical anthropologist, and the bones he works with are as old as 3,000 years.

"I'm anatomically oriented," Lukacs says. "I'm quite interested in how changes in culture — particularly the technology that goes into preparing food and the methods of getting food — affect the teeth and jaws."

Lukacs' work took him to Poone, India, perhaps more famous as the founding place of the Rajneesh religious sect than for its ancient burial sites.

In Poone, he examined 133 skeletons, brought in boxes from a burial site named Inamgaon. His work involved measuring, photographing, occasionally x-raying the skeletons and compiling the results of his research. The site has been excavated since 1968 by Indian archaeologists.

Lukacs bases his research on the hypothesis that as culture gets more complex, jawbone and tooth size decrease and the anatomy of the tooth gets less complex. According to the theory, the jawbone has been reduced in size over the ages in part because jaw muscles have become weaker through lack of use.

"The functions that teeth were performing in ancient man are being performed by tools," Lukacs says. "Rather than grind grains between teeth, you're grinding them on a grinding stone. You couldn't boil food till you had pottery,

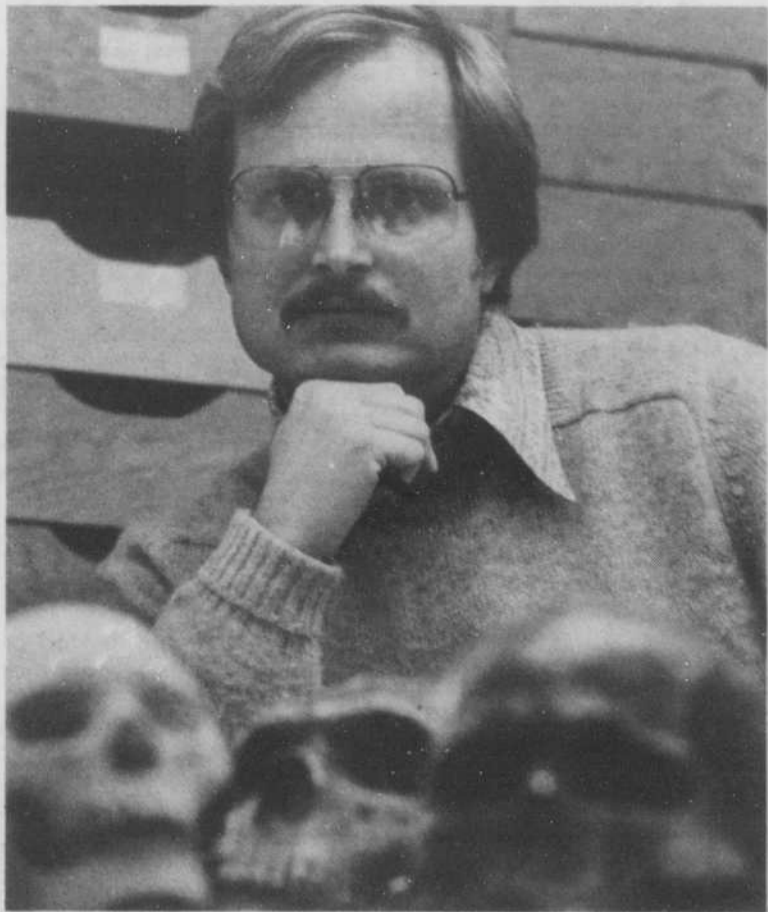


Photo by Bob Baker

Physical anthropologist John Lukacs examines skulls and shards of bone to reveal clues about ancient people.

so when you compare pre-pottery to post-pottery cultures you expect to find further reduction in the amount of stress on the jaws."

Lukacs envisions a "hypothetical 'homo-futuris' a thousand years down the line might have no teeth and a small, degenerative jaw" if this evolution is continued.

But Lukacs isn't satisfied with just knowing there were changes in the jaw and teeth — he wants to know how and why that evolved.

"The question is how that happens," he says. "What's the correlation between the reduction of teeth and jaws with changes in culture?"

Evidence shows that the transition from larger jaws and more complex teeth to smaller jaws and less complex teeth occur as agriculture replaces hunting and gathering as a way of life, Lukacs says.

This has been well-documented for Europe and western Asia, he says, and his findings in southern Asia are similar.

It has also been demonstrated that the time frame for

when a culture becomes agricultural and when jaw and tooth size reduction occurs is about the same for cultures around the world, Lukacs says.

"We talk about an agricultural revolution that happened 10,000 years ago, but it didn't happen simultaneously," he says. "These people (in southern Asia) just started getting into agriculture around 700-1,000 B.C., so it's an early farming community even though it's late in time compared with other farming sites.

However, Lukacs notes the change in time and technology is accompanied by about the same reduction in jaw and tooth size for the populations, suggesting a cause/effect relationship.

Lukacs plans on returning to India and studying fossil records in conjunction with dental records of modern people.

He values this kind of research as not only a data bank for practicing orthodontists, but a historical perspective on why humans are the way they are today.

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with local businesses," Jansen said.

The men complained that the school, which according to board policy may house educational groups in unused dorm rooms, has "overstepped their legal authority" by housing non-educational groups and participating in a nationwide Elderhostel program.

The three men also told the board that occupancy rates at Ashland motels had fallen from 80 percent to 65 percent.

Board vice chairer Loren Wyss told the businessmen the board was sympathetic but the college can also be viewed as a boon to business.

"A number of us are sympathetic," Wyss said. "We do

have to look at the running of institutions as businesses, too... sometimes institutional leaders make choices differently than the board would have made."

The board, which made no recommendation, told the businessmen they'd look into the situation and possibly discuss it further at their next meeting.

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