versity in Bethlehem, Pa.

Particularly intriguing, he says, is that the number of atoms in the actual nanospheres approaches the number that can be included in a computer simulation. This near match suggests that researchers will soon be able to confidently predict from computer models how materials behave. "This... opens up a world of possibilities for virtual-materials design," says Bob R. Keller of the National Institute of Standards and Technology in Boulder, Colo. —P. WEISS

Morbid Mystery Tour

Epidemic from China is encircling globe

An outbreak of deadly pneumonia that seems to have begun in southern China spread this month to at least two other continents, including North America. Initial tests have given clues to the identity of the pathogen involved in the infection, which health officials have dubbed severe acute respiratory syndrome (SARS).

At least 300 cases of SARS have been tallied in mainland China, where the epidemic has apparently been smoldering since last November. Elsewhere, more than 450 cases and at least 17 deaths have been attributed to the disease, according to the World Health Organization (WHO) in Geneva.

The new epidemic "reminds us that... an emerging problem in one part of the world will soon be a problem for all of us," said Julie Gerberding, director of the Centers for Disease Control and Prevention (CDC) in Atlanta.

Beyond mainland China, Hong Kong has thus far borne the brunt of the outbreak, with at least 10 deaths among 286 cases. Epidemiologists have traced many of the other infections to a man who was hospitalized on Feb. 26 in Hanoi, Vietnam, after traveling from mainland China via Hong Kong. Several doctors who treated that patient later became ill. From Hanoi and Hong Kong, infected people traveling by airplane spread the disease to Europe, North America, other parts of Asia, and possibly Australia. At least 40 suspected cases have been identified in the United States.

Infections have occurred primarily

through close and prolonged contact with sick individuals, WHO officials say. From 2 to 7 days after being exposed, an infected person suddenly develops a high fever and other flulike symptoms and suffers difficulty breathing. In some cases, respiratory problems are so severe that patients need artificial ventilators.

WHO, CDC, and numerous national health agencies have deployed teams of disease investigators and laboratory scientists to identify the pathogen and develop means to contain the outbreak. Investigators, who initially examined tissues from infected people for known viruses, bacteria, and other pathogens, suggest that a novel pathogen lies behind the epidemic.

Two candidate viruses had been identified by press time, one belonging to the paramyxovirus family and one to the coronavirus family. Paramyxoviruses produce well-known contagions such as measles and mumps. That family also includes the rare Nipah and Hendra viruses, both of which were discovered in the past decade after they emerged as deadly infections. Some coronaviruses commonly cause minor colds in people, but none has previously been linked to an outbreak as serious as the current one. —B. HARDER

Fine Toothcomb

New fossils add to primate-origins debate

Fossil hunters working in Egypt have unearthed jaw fragments and teeth belonging to the oldest known members of one of the main evolutionary branches of primates.

The 40-million-year-old specimens represent two ancient groups, one an ancestor of modern lorises—complete with a comb-like set of lower front teeth that confirms its identity—and the other, of bushbabies, say anthropologist Erik R. Seiffert of Duke University in Durham, N.C., and his colleagues. These new finds double the age of the sparse fossil record for lorises and bushbabies, which with lemurs make up a primate group called the strepsirrhines. It originated in Africa at least 50 million years ago, the scientists conclude in the March 27 *Nature*.

"The new fossils date to near the evolutionary split of lorises and bushbabies from lemurs, which occurred perhaps 45 million years ago," Seiffert says.

Such estimates fit with the traditional notion that the first primates appeared around 65 million years ago. However, other researchers using DNA analyses have concluded that primates arose approximately 90 million years ago (*SN*: 4/20/02, p. 243).

In a comment published with the new report, Robert D. Martin of the Field

TANGLED TREE Primate evolutionary diagram shows the two main living groups, strepsirrhines and haplorhines, with known fossil forms of strepsirrhines. Traditional model of primate evolution (dark lines) contrasts with DNA-based version (shaded lines).

Museum in Chicago cites the genetic data in support of his view that strepsirrhines originated in southern Asia around 80 million years ago. In his view, lorises and bushbabies took a unique evolutionary route 10 million years later, perhaps when lemurs became isolated on the island of Madagascar after it separated from India.

"The timing and location of primate origins remains a complex problem," cautions evolutionary biologist Anne D. Yoder of Yale University, who has conducted primate-DNA studies. "Still, the new fossils from Egypt are terribly exciting."

Seiffert's group excavated a site in the Fayum Depression on the eastern edge of the Sahara Desert. They assign some of their finds to the genus *Saharagalago*, an ancestor of living bushbabies that weighed around 1/4 pound. The rest come from the genus *Karanisia*, an ancient loris that tipped the scales at an estimated 2/3 pound.

Of particular interest, the researchers say, are teeth at the front of a *Karanisia* lower-jaw fragment that form a toothcomb like that of today's strepsirrhines. The toothcomb consists of elongated, flattened teeth that angle sharply forward. Microscopic grooves on the fossil teeth indicate that *Karanisia* used its toothcomb for grooming, just as its living relatives do, Seiffert says.

Despite an intriguing find in Pakistan several years ago, no definitive lemur fossils have been found, Martin holds (*SN*: 10/20/01, p. 245).

"We need to find lemur fossils [at Fayum]," Seiffert says. Without such a find, he notes, fossil reconstructions of primate origin will remain shaky. —B. BOWER