

Lions and tigers and cats, oh no

Okay, so you've survived a mauling by a lion or tiger. Think your problems are over? Think again.

Many of the big cats, like their domesticated relatives, harbor *Pasteurella multocida*. This bacterium is capable of launching a second attack in humans after a bite or scratch has been inflicted. A report from the University of British Columbia in Vancouver, which appears in the June 14 *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*, describes two such encounters. One occurred after a young Masai warrior in Kenya fought a lion as a test of manhood, and the other happened when an 11-year-old girl in British Columbia was allowed to pet a Bengal tiger at a zoo.

Within a day after each attack, the victims developed serious *P. multocida* infections, resulting in high fever and requiring treatment with antibiotics.

The same infection can be inflicted by domestic cats; though few reports have linked the bacterium to their larger cousins, this "probably reflects the infrequency of survival after such encounters," the researchers note.

Elsewhere on the feline front, University of Connecticut researchers in Farmington report finding a likely bacterial candidate for another condition transmitted by cats, cat scratch disease. Other researchers have stained and photographed the bacterium, but this is the first modern isolation.

Cat scratch disease is marked by swollen lymph nodes and fever that follow the formation of a tiny skin lump at the site of a cat scratch. Most victims with the disease recover fully, and it often goes undiagnosed, says U. Conn.'s Michael A. Gerber.

The bacterium appears markedly similar to one described in a 1913 report on an ocular form of cat scratch disease, and may well be the same organism, says Gerber. The failure to find the organism since the early report may be because by the time the disease becomes evident the responsible microbes have all but disappeared, Gerber suggests.

Guns or babies?

As military spending increases, infant mortality rates increase as well, according to an analysis of data from 141 countries by Harvard and Boston University researchers. The relationship held for underdeveloped, middle developed and developed nations, they report in the June 14 *LANCET*. While the study shows a correlation and not a causation, the researchers say it is "highly plausible" that a causal link exists, since money spent on the military is unavailable for social programs that could decrease infant mortality.

The researchers considered 22 economic, social, health and military spending indicators independently. While the analysis did not permit a ranking of the factors, it did indicate which ones were strong enough to affect infant mortality, says Davis U. Himmelstein of Harvard.

As with previous studies, low infant mortality was linked with clean water, adequate nutrition and a high level of education in the country. The researchers looked at data from 1972 and 1979 and found that an increase in arms spending led to an increase in the infant mortality rate. A reduction in economic development, health resources and social spending was also related to a higher incidence of infant deaths.

Military spending is a "highly significant predictor of infant mortality," says Himmelstein. In Japan, which spends less than 1 percent of its gross national product on the military, the infant mortality rate is about 6 deaths before the age of one year per 1,000 live births, while the United States, with a 6 percent military spending rate, has an infant mortality rate of about 11 per 1,000, he points out. "The study suggests a good deal of the difference may be due to military spending," says Himmelstein.

But authors of several letters in the July 6 *LANCET* claim there is not enough evidence to support a direct causal relationship.

AIDS update

A new round of AIDS (acquired immune deficiency syndrome) studies has yielded further clues about the disease. Researchers have discovered one mechanism by which the AIDS virus cripples the immune system, shown that some antibodies to AIDS may indeed have a protective effect, and broadened the definition of AIDS to include patients who test positive for AIDS antibodies but who have diseases not previously thought to indicate AIDS.

AIDS patients are already known to have very few T4 cells, the white blood cells that recognize and respond to foreign proteins—and thus activate the immune system (SN: 5/5/84, p. 286). Now researchers at the National Institutes of Health in Bethesda, Md. have found that T4 cells from AIDS victims "have an intrinsic defect in their ability to recognize and respond to soluble antigen," says a report by H. Clifford Lane and colleagues in the July 11 *NEW ENGLAND JOURNAL OF MEDICINE*. Also, AIDS virus seems to replicate only in T4 cells. Thus, although the disease has a multitude of symptoms and effects, the action of the virus appears to be very specific. The researchers suggest that when the time comes that the progress of AIDS can be halted, they will need some method of reconstituting the immune system, and this new information may help them.

Meanwhile, two studies by Robin A. Weiss and colleagues and Marjorie Robert-Guroff and colleagues in the July 4 *NATURE* found that antibodies from the blood of AIDS patients, "pre-AIDS" patients and those who had the antibody but were not sick were all somewhat effective against the AIDS virus. Although AIDS victims were already known to produce antibodies to the AIDS virus, no one knew whether these antibodies actually had a detrimental, or "neutralizing" effect on the virus. The researchers also found higher levels of AIDS antibodies in persons with so-called pre-AIDS than in those with full-blown AIDS. Whether the presence of the AIDS antibody makes pre-AIDS patients' symptoms milder, or whether their milder symptoms allow the production of more antibodies remains to be seen, but researchers are encouraged. Although the effectiveness of the antibodies against the AIDS virus was not proved *in vivo*, the results may be an important first step in the possible development of a vaccine.

Finally, the Centers for Disease Control (CDC) in Atlanta, broadened the definition of what constitutes a case of AIDS by adding several more diseases to the list of 12 AIDS markers. "We had been receiving reports of some diseases associated with AIDS that we were not counting as AIDS," says Richard Selik of the CDC. "The availability of the test [for AIDS antibodies in blood] gave us justification for adding some diseases." Before the test was available, these diseases were not considered indicators of AIDS.

"This change in the case definition reflects the fact that the test is being used for diagnostic purposes," he adds. Although initial reports (SN: 1/19/85, p. 36) held that the test would be used only to screen blood, Selik says that diagnosing AIDS by using the test—in conjunction with other markers for AIDS—is appropriate.

The CDC says the reclassification will affect less than 1 percent of cases. Dean Echenberg, director of Communicable Disease Control for the San Francisco Department of Public Health, agrees that the change will have only "minimal effects, perhaps a couple of more cases this year than would have been classified as AIDS under the old rules—out of hundreds."

But Echenberg adds, "I think it is very important that clinical AIDS be defined broadly enough so that those who have AIDS can get the treatment they need; but that the definition we use for surveillance isn't changed so much that we can't track the course of the disease."

The CDC says that as of July 8, the number of persons diagnosed as having AIDS in the United States is 11,505. More than 5,700 have died, almost 1,000 of these since April.