for the conservation of the species and its habitat.

The long-cycle flowering and subsequent temporary die-off of bamboo, and consequent starvation of pandas, has received a great deal of publicity. The situation is very complex. In "proper" panda habitat, with a variety of bamboo species, each flowering intermittently but asynchronously, the pandas' food supply does not disappear. But human pressure has in particular resulted in the loss of the lower-altitude species of bamboo in many areas, in effect removing the pandas' emergency alternative rations. The animals can and do switch between different bamboo food types, as this study showed; but it also showed that they have very little spare time to spend in searching for and gathering their food. They are near the limits of their existence, for several reasons. The remedies for the situation will form the basis of the research team's next report. We shall await it just as eagerly. □

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Matter of a letter

Stillman Drake

The Galileo Affair: A Meeting of Faith and Science. Edited by G. V. Coyne, M. Heller and J. Życiński. *Specola Vaticana, V-00120 Stato Città Del Vaticano, Vatican City State: 1985. Pp.179. Pbk \$7 (individuals), \$9 (libraries).*

IN 1979 the Pope expressed concern that Galileo had suffered at the hands of persons and instrumentalities of the Catholic Church. Citing a passage from Galileo's open letter of 1615 on religion and science, addressed to the Grand Duchess of Tuscany, he implied that Galileo's theological position was sounder than that of his judges at his trial for suspected heresy, in 1633. The Pope proposed a thorough re-examination of the Galileo affair, placing blame wherever it historically belonged.

Several publications at Vatican City have subsequently appeared. Among the first was the complete official text of all documents relating to the affair now extant at Rome. Most recent is this book, the proceedings of a conference held at Cracow in 1984 and attended by historians, philosophers, scientists and theologians. History of the Galileo affair occupies the first section, followed by sections on Galileo and science, and on cultural repercussions of the Galileo affair.

As translator of Galileo's letter of 1615 and of his books, I oppose the claim (p.30) that the former "is filled with assertions that the Earth's motion, both diurnal and annual, can be conclusively proved by

necessary demonstrations based on sense experiences". No such categorical assertion was made. The part of the letter cited says no more than that after decades of unopposed study, Copernican astronomy was being attacked by philosophers just when it was beginning to appear well-founded by manifest experiences (telescopic) and necessary demonstrations (mathematical).

One such set of foundations was the phases of Venus announced at the beginning of 1611. Another was eclipses of Jupiter's satellites, published in 1613 with some predictions by Galileo and his remark that motion of the Earth had to be considered in calculating them. His calculations showed that the Earth was not at, or even near, the centre of Jupiter's orbit. The scholar concerned is also mistaken in assuming that Galileo alluded to his explanation of tides, which involved no measurements, mathematical calculations or predictions subsequently verified observationally.

In 1615 Galileo openly stated his Copernican belief; no action had yet been taken by theologians on the matter. The purpose of his letter was to show that any action would be untimely, not to prove any scientific conclusion. In 1616 an edict regulating Copernican books was issued. Thereafter Galileo discussed the matter only hypothetically, having promised in his letter to abide by Church action if, contrary to his advice, any were taken.

Thorough re-examination of the Galileo affair as proposed by the Pope is

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still far from accomplished. Another scholar at Cracow writes (p.137): "The revolutionary ideas of Galilean astronomy were due to fortunate conjectures and insights which had no critical empirical confirmation before 1838". No scientist altered his astronomy because of Bessel's observations. Moreover Galileo's calculations of satellite eclipses were not fortunate conjectures. Whether philosophers should reject them as critical empirical confirmation of the Earth's place and motions is at least questionable. Philosophy and rhetoric are no longer science, as they were until Galileo separated them from it.

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AIDS: the scientific story so far

June Goodfield

A Strange Virus of Unknown Origin. By Jacques Leibowitch. Translated by Richard C. Howard. *Available Press (Ballantine, New York): 1985. Pp.172. Pbk \$4.95 (United States), \$6.50 (Canada).*

ACQUIRED immune deficiency syndrome, AIDS, struck medical consciousness at a time when, as Robert C. Gallo points out in his foreword to this book, prominent scientists were predicting the end of the great human infectious epidemics. Though the disease had certainly already been present in a few special localities, it appeared where it might have been least expected, namely in technologically advanced, relatively healthy societies.

The medical community might have been taken by surprise, but the cause of AIDS was discovered with a speed probably unparalleled in the history of infectious diseases. A new virus, unique to human beings, preferentially attacks the helper T-lymphocytes, the very cells whose activity is crucial in the mounting of an adequate immune response. The immune deficiency thus provoked lays the victim open to a whole variety of invariably fatal opportunistic infections. As they watch the spread of AIDS gather momentum, medical scientists are realizing that, far from being over, a new, dangerous period of infectious epidemics may just be starting.

We are fortunate that a scientist involved in research into this disease from its very beginning has now written this excellent, slim book. Jacques Leibowitch is a clinical immunologist who has been both close to the problem and totally committed to its solution. Here he successfully demystifies AIDS, recognizing, as we all should, that to know your enemy well is the first step towards victory. Taking us on a survey through the history and origins of the epidemic, he presents a comprehensive and authoritative clinical and epidemiological picture that culminates with sections on prevention and the prospects for treatment — not at all bright as of now.

Everyone from professional scientists to the general public will find this book of great value. It is marred, however, by one stylistic fault. Though at the beginning the writing is fluent and witty, the book finishes in a series of choppy, condensed paragraphs covered liberally by sub-headings, so that it takes on the quality of a briefing paper for a select committee. □

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