



During a recent mathematics conference, the University of Louisville library displayed a few of the books in its valuable mathematics collection.

member that in the bathroom the toilet paper was rose-colored and perfumed," he wrote. "The window frames creaked so much in the wind that I was unable to sleep in the midst of all the abundance and luxury."

When Bullitt died, his widow donated the more valuable books to the University of Louisville, although schools like Harvard would have liked to obtain the collection. Later, the remainder of the collection also went to the university library, and the current checklist contains more than 300 items.

Albert Lewis, now helping to edit the papers of mathematician Bertrand Russell

at McMaster University in Hamilton, Ont., says the collection is very rich in the authors that it covers, and includes some very rare items. However, he calls it a "collector's collection" because most of the material is available elsewhere to mathematicians and interested historians in other forms or later editions. "It's a marvelous collection, nevertheless," Lewis says.

This kind of resource is useful, says Uta Merzbach, mathematics curator at the Smithsonian Institution in Washington, D.C., because it is sometimes helpful to check original editions of mathematical works. In later editions, particularly dur-

ing the 19th century, changes made by editors often obscured an author's original work.

But it wasn't historical research or the monetary value of the books that brought more than 50 mathematicians, attending a recent American Mathematical Society meeting in Louisville, to crowd into the university library's rare-book room. It was a chance to trace the mathematical formulae and geometrical diagrams of ancient authors, to puzzle out cryptic Greek and Latin phrases and to contemplate some of the greatest achievements in mathematics. It was a chance to touch a heritage.

—Ivars Peterson

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New data change image of poverty

Two new long-term studies question the prevailing belief that the poor form a permanent underclass in the United States that is perpetuated by welfare and a "culture of poverty."

A survey by the University of Michigan's Institute for Social Research in Ann Arbor shows that one in four people in this country lived in a family that required at least some welfare income between 1969 and 1978. Many of those who accepted government aid returned to self-sufficiency within a year or two, the researchers found. Only about 2 percent of the population depended heavily on welfare for more than seven of 10 years.

Many people on all rungs of the economic ladder experience "tremendous changes" in family composition, income and employment, says survey director Greg J. Duncan. As a result, welfare touches many lives.

About half of those who required welfare during the 1970s had a short-term need. "Many families receiving welfare... were in the early stages of recovery from an economic crisis caused by the death, departure or disability of the family's major wage earner," notes Duncan. Government assistance helped these people over a temporary rough spot.

In their annual interviews with individuals from a representative national sample of 5,000 families, Duncan and colleagues Richard D. Coe and Martha S. Hill also found that most of the children raised in families receiving welfare do not themselves go on welfare after leaving home.

Almost two-thirds of the people who are persistently poor are black. But most do not fit the stereotype of the apathetic "welfare mother" or young, unemployed male. One-third of the welfare-dependent population is old (over 65) or lives in families headed by the old; about 40 percent live in households headed by single women with children at home; two-thirds live in the South, mostly in rural areas.

In a book based on the survey, *Years of Poverty, Years of Plenty*, Duncan says that traditional one-time surveys of national poverty cannot track patterns of family economic change. The U.S. Census Bureau, for example, has found that the size of the richest, middle-income and poorest segments of the population remains fairly stable, but the Michigan study shows that membership in these segments changes significantly from year to year.

A related 40-year follow-up study of inner-city children appears in the March AMERICAN JOURNAL OF PSYCHIATRY. Psy-

chologist Jancis V.F. Long and psychiatrist George E. Vaillant, both of Harvard University in Cambridge, Mass., report that a majority of children from impoverished homes escape poverty. The researchers used data going back to 1940 on 456 white, nondelinquent youths in Boston, half of whom were from homes plagued by parental cruelty, alcoholism, dependency on economic aid and numerous other problems. All of the youths, aged 12 to 16, lived in poor neighborhoods and did not attend Boston's better public schools.

When 425 members of the original sample were checked 35 years later, about 80 percent of those from "multi-problem" homes had escaped poverty to the middle class or above. Both groups had been employed for more than 90 percent of their adult lives, both had similar income levels and showed little difference in criminal records or mental health. Childhood IQ and coping skills were most closely related to upward social mobility.

The researchers caution that their subjects were favored by being male, white and born during an era of economic growth. But a significant "resilience" was found for children from families with numerous social problems, they say. If deprived family backgrounds do not hold back the majority of urban children, add the investigators, economic aid and social interventions become "less hopeless and more urgent."

—B. Bower