

# Lionel Penrose

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**Lionel Sharples Penrose**, FRS (11 June 1898 – 12 May 1972) was a British psychiatrist, medical geneticist, mathematician and chess theorist, who carried out pioneering work on the genetics of mental retardation. He was educated at the Quaker Leighton Park School and St. John's College, Cambridge.

Penrose's "Colchester Survey" of 1938 was the earliest serious attempt to study the genetics of mental retardation. He found that the relatives of patients with severe mental retardation were usually unaffected but some of them were affected with similar severity to the original patient, whereas the relatives of patients with mild mental retardation tended mostly to have mild or borderline disability. Penrose went on to identify and study many of the genetic and chromosomal causes of mental retardation (then called mental deficiency). This body of work culminated in the book, *The Biology of Mental Defect* (Sidgwick and Jackson, Ltd., London, U.K., 1949).

Penrose was a central figure in British medical genetics following World War II. From 1945 to 1965 he occupied the Galton Chair at the Galton Laboratory at University College London. He received a number of awards and honors including the 1960 Albert Lasker Award for Basic Medical Research.<sup>[1]</sup> The Lasker citation read: "Professor Penrose and his associates have been responsible over the years for studies which touch all aspects of human genetics, include genetic analyses of most of the known hereditary diseases, contributions to mathematical genetics, biochemical genetics, the study of gene linkage in man, and theoretical work on the mutagenic effect of ionizing radiations. Most recently their attention has been turned to abnormalities of human chromosomes associated with congenital defects, particularly mongolism (Down syndrome)."

In British psychiatry, '**Penrose's Law**' states that the population size of prisons and psychiatric hospitals are inversely related, although this is generally viewed as something of an oversimplification.

Penrose, a member of the Society of Friends (Quakers), was a lead figure in the Medical Association for the Prevention of War in the 1950s.

Penrose developed the Penrose method, a method for apportioning seats in a global assembly based on the square root of each nation's population. Such a voting system is based on the voting power of any voter (measured by the Penrose–Banzhaf index) decreasing with the size of the voting body as one over its square root.

## Family

Penrose married Margaret Leathes in 1928 and they had four children:

- Oliver, born 1929, professor of Mathematics
- Sir Roger, born 1931, mathematical physicist (with whom Lionel co-authored papers on the Penrose triangle)
- Jonathan, born 1933, chess player
- Shirley, the geneticist S. V. Hodgson

After Penrose's death, Margaret married the mathematician Max Newman (1897–1984). She died in

1989.

Penrose' Father was James Doyle Penrose, and his brother was Sir Roland Penrose, both British artists.<sup>[2][3]</sup>

## References

- ↑ "Albert Lasker Basic Medical Research Award 1960 winners" ([http://www.laskerfoundation.org/awards/1960\\_b\\_description.htm](http://www.laskerfoundation.org/awards/1960_b_description.htm)) . Lasker Foundation. [http://www.laskerfoundation.org/awards/1960\\_b\\_description.htm](http://www.laskerfoundation.org/awards/1960_b_description.htm). Retrieved 2009-01-19.
- ↑ A. M. Cooke, 'Penrose, Lionel Sharples (1898–1972)', rev., Oxford Dictionary of National Biography, Oxford University Press, 2004 accessed 19 Jan 2009 (<http://www.oxforddnb.com/view/article/31537>)
- ↑ Laxova, Renata. "Lionel Sharples Penrose, 1898–1972: A Personal Memoir in Celebration of the Centenary of His Birth" (<http://www.genetics.org/cgi/content/full/150/4/1333>) . *Genetics*, Vol. 150, 1333-1340, December 1998. Genetics Society of America. <http://www.genetics.org/cgi/content/full/150/4/1333>. Retrieved 2009-01-19.

## External links

- Lionel Sharples Penrose, 1898–1972: A Personal Memoir in Celebration of the Centenary of His Birth (<http://www.genetics.org/cgi/content/full/150/4/1333>) , written by Renata Laxova and published in the journal *Genetics*, Vol. 150, Pages 1333-1340, December 1998.
- Lasker Award to LS Penrose ([http://www.laskerfoundation.org/awards/1960\\_b\\_description.htm](http://www.laskerfoundation.org/awards/1960_b_description.htm))

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