

be aware of the inspector's needs, role and goals. This book clearly outlines these points.

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Dumping in Dixie, by R.D. Bullard, Pub. by Westview Press, 5500 Central Ave., Boulder, CO 80301, 165 pp. (inc. References and Index, 1990; Second Ed., 1994, hard cover \$58.00; paperback, \$21.50), ISBN 0-8133-7964-7. Westview Press is now a part of Harper Collins, New York City.

Most studies of environmental concerns arise from the toxicity and ecological effects; this book is directed to the effects of releases on social justice, race, class, and politics. The issues center on equity, fairness, and the struggle for social justice by Africo-Americans and other nationalities. The author, a sociologist at a Houston, TX university, studied the local landfills and dumpsites, and their relation to humans living nearby. Chapter I explores the barriers to environmental and social justice by non-white Americans in the U.S. and reflects the growing militancy among such residents. An overview of the sociological and ecological changes that have taken place in the southern region is presented in Chapter II. Chapter III includes detailed community profiles and background data on the environmental disputes investigated, the response, and a description of dispute resolution mechanisms. The results of the household surveys are discussed in Chapter IV. Chapter V looks ahead, and outlines the strategies for the 1990s, based on lessons learned, grassroot mobilization, and politics.

The unusual approach of this book is in reviewing the disputes and their resolution into focus, and assuming that non-whites occupy a significant place in certain areas, and noting that their feelings are often overlooked or overridden.

Since the minorities deserve the same consideration as native Americans, the book is recommended for the human/toxicity/response review. It is a book well worth considering.

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Effects of A-Bomb Radiation on the Human Body, English Edition. Edited by I. Shigematsu et al., Translated by B. Harrison, Harwood Academic Publishers, Australia, UK and the US. Copyright 1995 by Bunkodo Co., Ltd., Tokyo 113 Japan, British Library Cataloging ISBN 3-7186-5418-0, 419 pp., \$50.00. American Distributor is Gordon & Breach, Newark, NJ.

To most people who do not read Japanese, the effects of the bombs dropped on Hiroshima (the Little Boy) using uranium-235 and the second using plutonium-239 (released over Nagasaki) resulted in 114 000 and about 70 000 deaths respectively. The

atomic bomb differed from conventional explosions in that besides the bomb blast it was accompanied by intense heat and radiation, with the dissipation of energy believed to have been in the ratio of bomb blast (50%), heat (35%) and radiation (15%). The explosion created an extremely high pressure at the point of detonation equal to several hundred thousand atmospheres; the surrounding air expanded greatly to form the bomb blast and a shock wave which traveled outwards of about 11 km after 30 s. The well-known mushroom cloud resulted.

Heat to the extent of one million degrees C at the instant of detonation is known while the heat content on the surface of the fireball was calculated to be approximately 7000 °C after 0.3 s. Thermal radiation proved fatal to unprotected people within about 1.2 km of the blast caused 20–30% of the total deaths to these burned.

The initial radiation was composed primarily of gamma rays and neutrons. Residual radiation from the products of nuclear fission and the uranium-235 that had not undergone nuclear fission dispersed in mid air, and were converted into a radiation source consisting of gamma rays, beta rays, and alpha rays, which were termed “death ash”. The “black rain” which fell from the northern to western districts of Hiroshima, and in the eastern parts of Nagasaki, spread the residual radioactivity to distant places. Studies by the Hiroshima City Office have been available, but some of the data and its application is not clear, regarding relationship between number of casualties and distance from the hypocenter.

This volume attempts to analyze the less-than-fatal effects of the bombs. As would be expected, various parts and organs of the body were affected. Each major subject has a detailed chapter with references, starting with malignant tumors and benign tumors. Endocrine and metabolic diseases, including thyroid diseases, parathyroid diseases, and diabetes mellitus are considered. Hematologic and hematopoietic organ disease is shown to be important, as are the psychoneurological and psychological effects. Ocular lesions, including atomic bomb cataracts, are studied in detail, as are circulatory diseases. Respiratory diseases (including pulmonary fibrosis) are given full attention. Hepatic disorders, including viruses and nutrition, make it necessary to perform further studies in order to determine whether the adverse effects are due to the direct action of radiation, or whether the radiation acts indirectly through the effects of causative agents.

Gynecologic diseases are discussed in terms of effects on menstruation including post-bombing amenorrhea, and the ages of menarche and menopause.

Keloids, or burns caused by the bomb exposure covered large areas of the body surface with second or third degree burns. Both initial period scars (in 60 to 70% of the burn cases), and non-active phase scars remain 10 years after the bomb exposure.

Musculo-skeletal diseases are discussed under bone tumors and effects of prenatal exposure on bone tissue. Bones are said to be resistant to radiation; it has been reported that effects result from high-dose irradiation, but no reports to date report such damage among bomb survivors.

Microcephaly, or developing brain damage, is discussed in terms of the gestational age of prenatally exposed bomb survivors and their school work as they have matured. The developmental process and morphological characteristics of histogen-

esis of the human cerebral cortex are said to be basically the same as in other mammals.

Mortality rates and cancer incident in prenatally exposed atomic bomb survivors are explored, but are small for the first 10 years of life.

In directly exposed survivors, ionizing radiation causes the chromatin (i.e. DNA) to break. After breakage, repair takes place between the break points with the chromatin reconstituting its original state. If the radiation dose is large the number of break points also becomes large, and it is possible for repair to occur between different break points, resulting in structural rearrangements. Such abnormalities due to misrepair are termed “exchange-type aberrations”.

Now that data such as suggested above are available, it is the reviewer’s hope that nations which possess the atomic device will seriously consider the human effects, as well as political, as well as use the elements and processes for generation of power and electricity.

The volume is exceptionally well printed on high-quality paper, and contains an index of 14 pages. Each chapter has significant references. The volume is highly recommended both for its contents and presentation.

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