FILE NAME: General Electric (GE)

DATE: 1943

DOC#: GE037

DOCUMENT DESCRIPTION: Book Excerpt - Principles and Practice of Industrial Medicine

BC GE file #37

book except 1943

The Principles

of

INDUSTRIAL

Edited

FRED J. WAM
Professor, Preventive and
MEDICAL COLLEGE

CONTRIB

Otis L. Anderson
R. N. Anderson
Anna M. Baetjer
J. J. Bloomfield
J. A. Calhoun
J. M. Carlisle
George H. Cross
Donald E. Cumming
Charles F. Engel
John H. Foulger
Augustus Gibson
T. Lyle Hazlett
Albert Hemming
F. F. Heyroth
Joanna Johnson
R. T. Johnstone
George Zur

A William W
BALTIM
THE WILLIAMS & WI
1943

ANDERSON, OTIS L., B.Sc., M.D., F.A
Surgeon, United States Public H
sion of Venereal Diseases, Nati
Maryland.

ANDERSON, RICHARD N., B.A., M.A.
Director of the Division of Rehab
tion of the Virginia State Dep
Virginia.

BAETJER, ANNA M., Sc.D.
Associate in Physiological Hygie
Health, The Johns Hopkins U

BLOOMFIELD, J. J.
Sanitary Engineer, United States
States' Relations Section, Divis
Institute of Health, Bethesda,

CALHOUN, J. A., M.D.
Medical Director, American Visc
ware.

CARLISLE, J. M., M.D.
Medical Director, Merck and
Professor of Industrial Medic
Medicine, Philadelphia, Pennsy
of Industrial Health and Hygie
of Health.

CROSS, GEORGE H., M.D.
Associate Professor of Ophthalm
Graduate School of Medicine, C

CUMMING, DONALD E., B.S.*
Associate Professor, Department
of Industrial Hygiene, Universit
Denver, Colorado.

ENGEL, CHARLES F., M.D.
Assistant Medical Director, West
ing Company, East Pittsburgh

FOULGER, JOHN H., M.D., PH.D., F.A.
Medical Director, Haskell Labora
mington, Delaware; Associate
Medical College of Virginia, Ric

* Deceased December, 1942.

GIBSON, AUGUSTUS, M.D.
Physician, Merck and Company, Rahway, New Jersey.

HAZLETT, T. LYLE, M.D.
Medical Director, Westinghouse Electric and Manufacturing Company; Professor, Industrial Hygiene, University of Pittsburgh, Pittsburgh, Pennsylvania.

HEMMING, ALBERT, M.B., Ch.B.
Physician, Merck and Company, Rahway, New Jersey.

HEYROTH, FRANCIS F., M.D.
Assistant Professor of Research Physiology, Kettering Laboratory of Applied Physiology, College of Medicine, University of Cincinnati, Cincinnati, Ohio.

JOHNSON, JOANNA, R. N.
Supervisor, Industrial Nursing Division, Employers Mutual Liability Insurance Company, Milwaukee, Wisconsin.

JOHNSTONE, RUTHERFORD T., A.B., M.D.
Director of the Department of Occupational Diseases, Golden State Hospital, Los Angeles, California; Formerly Assistant Professor of Medicine, University of Pittsburgh School of Medicine, Pittsburgh, Pennsylvania.

KEHOE, ROBERT A., M.D.
Research Professor of Physiology, Director, Kettering Laboratory of Applied Physiology, College of Medicine, University of Cincinnati, Cincinnati, Ohio.

KRONENBERG, MILTON H., M.D.
Chief, Division of Industrial Hygiene, and Industrial Medical Supervisor, Department of Public Health, State of Illinois; Assistant Professor of Bacteriology and Public Health, University of Illinois Chicago, Illinois.

KUECHLE, B. E., A.B.
Vice-President and Claims Manager, Employers Mutual Liability Insurance Company, Wausau, Wisconsin.

LUCKIESH, MATTHEW, D.Sc., D.E.
Director, Lighting Research Laboratory, General Electric Company, Nela Park, Cleveland, Ohio.

MACHLE, WILLARD, M.D.
Associate Professor of Research Physiology, Associate Director, Kettering Laboratory of Applied Physiology, College of Medicine, University of Cincinnati, Cincinnati, Ohio.

McKEE, R. W., PH.D.
Instructor in Industrial Hygiene, School of Public Health, Harvard University, Boston, Massachusetts.

MORRIS, SARAH I., M.D., F.A.C
Professor of Preventive Mec
sylvania, Philadelphia, Pe

MORSE, KENNETH, M.S.
Industrial Engineer, Divisi
Department of Public He

MOSS, FRANK K., E.E.
Physicist, Lighting Research
Nela Park, Cleveland, Oh

PETERSON, C. M., M.D.
Secretary, Council on Indus
tion, Chicago, Illinois.

ROBERTSON, D. F., M.D.
Associate Medical Director,
Jersey.

ROSSITER, FRANK S., M.D.
Medical Director, Carnegi
Pennsylvania.

SAWYER, WILLIAM A., M.D.
Medical Director, Eastman I

SCHWARTZ, LOUIS, M.D.
Medical Director, United St
Dermatoses Investigations
National Institute of Healt

THOMPSON, LORIN A., PH.D.
Director, Population Study,
mond, Virginia.

WAMPLER, FRED J., M.A., M.D.,
Professor, Preventive and I
Out-Patient Clinic, Medical
Southern Biscuit Company

WILLIAMS, GEORGE ZUR, M.D.
Associate Professor of Pathol
mond, Virginia; Member of

VII. OTHER PNEUMOCONIOSES

There is considerable disagreement in the medical literature concerning the exact etiology of certain types of pulmonary fibrosis due to dust inhalation other than silica dust. Asbestosis, siderosis, and anthracosis are the most important of these fibroses.

Asbestosis

It has been well proven that a peculiar type of linear pulmonary fibrosis is caused by minute asbestos fibers inhaled by workers in industries utilizing asbestos for the manufacture of fire resisting material, insulation, certain fabrics and ropes, paints, roofing, tile, etc., as well as the manufacture of asbestos itself.

Asbestos is magnesium silicate and is the only silicate which has experimentally been proven to produce a pulmonary fibrosis without exposure to silica.

The onset and clinical course of asbestosis is similar to that of slowly progressing silicosis and the symptoms in the later stages are identical. Fatal termination is usually by complicating pneumonitis, cardio-vascular decompensation, or tuberculosis. The roentgenopathology is typical and not difficult to differentiate from silicosis. Gloyne and Merewether state that the roentgenological appearances of asbestosis are revealed typically as a general lack of translucency with a fine pinhead mottling. This is the characteristic "ground glass" appearance. The film should always be compared with a film of a normal patient and a film of a silicotic patient taken with the same exposure.

The diagnosis depends upon a definite history of exposure to asbestos dust including sufficient period of exposure, roentgenological appearance, decreased pulmonary capacity, and the finding of asbestos bodies in the sputum of patients not yet removed from exposure to the dust. These asbestos bodies are well described and usually illustrated in most text books of clinical pathology. The pathology may be summarized in the single statement that it consists of a persistent, progressive, diffuse perialveolar fibrosis of the lungs. The fibers may be seen on histological examination to lie embedded in the fibrous walls of alveoli and bronchioli and each fiber appears to be encrusted by an iron-containing yellow pigment. As would be expected, in the later stages the fibrosis becomes confluent and massive.

Siderosis

Siderosis is chiefly a red pigmentation of the lung tissue due to inhalation of iron-containing dust frequently found in hematite miners. Experimentally, fibrosis has not been produced by pure iron or iron oxide dust

and only when mixed with ha
fibrosis result. Therefore, unle
siderosis by itself is asymptom
clinical findings.

Black pigmentation of the lu
types of carbon particles is co
industrial cities. Most marked
There is some controversy conc
carbon dust of itself can produc
clusive experimental evidence th
It is the author's opinion that al
are due to an admixture of silica
fibrosis due to respiratory dise
produces no clinical findings or d

RE

American Public Health Association:
coniosis and the Committee on S
tional Diseases, Year Book, 1933,
Belt, T. H., Irwin, D., and King, E
persons without occupational exp
J., 34 (2): 125–133, 1936.
Burke, H. E.: The detection of mine
Hyg., 17: 27, 1935.
Cole, L. G., and Cole, W. G.: Dysp
113: 1216, 1939.
Cummins, S. L.: The augmentation of
tubercle bacilli. Brit. J. Exp. P
Drinker, P., and Hatch, T.: Industri
Ellman, P.: Pulmonary asbestosis: i
tures, and associated risk of tube
Gardner, L. U.: Pathology of so-cal
1240, 1933.
Gardner, L. U.: The pathology and
coniosis. J. A. M. A., 114: 535–54
Gardner, L. U.: Recent developments
Feb. 1940.
Gardner, L. U.: Studies on experime
of healing primary tubercles in the
carborundum dusts. Am. Rev. of
Gloyne, S. R., and Merewether, E. I
Hatch, T., and Thompson, E. W.: A ra
quantitation for routine plant ope
International Labour Office: Pneu
reports, series F (Ind. Hyg.), No.