Wheat (Triticum), a member of the grass family, and a relatively cheap source of calories, is the most widely used crop plant. The United States is its largest producer: 33 million tons annually, with an average yield of 25 bushels per acre as compared with 60 bushels in The Netherlands and 12 bushels in the USSR. Total world production of wheat is 225 million tons annually. Large wheat producing countries are: USSR, China, Canada, France, India, Italy, Turkey, Australia and Argentina. About 72 lb of flour and 28 lb of feed are produced from 100 lb of wheat. Different types of wheat are used for bread, spaghetti, macaroni and similar products and for rolls and pastry. Cultivation of wheat as bread cereal has been traced by archeological investigations to a period 7000 years ago. Of the many thousands of varieties of wheat in the world, almost 200 kinds are grown in the United States. Storage, shipping, cleaning and milling as well as handling the finished product, flour, may entail exposure to harmful organic inhalants. During the past decades pertinent case reports and description of respiratory diseases have been published under suggestive names, such as grain handler disease, grain fever, cerealia fever, farmer's lung, threshers' disease, miller's asthma, baker's asthma. Manifestations of these entities are thought to be due to inhalation of organic substances which act as tissue irritants or as allergens, together with products of molds capable of inducing localized hypersensitivity reactions with the lung as the shock organ. Individuals in the respective occupations may become sensitized to these substances. Hypersensitivity increases in proportion with the length of exposure. After protracted exposure, inhalation of the pathogens for a few minutes may bring on the disease. Repeated acute episodes are likely to result in chronic disease. According to authoritative opinions, the condition should be regarded as hypersensitivity pneumonitis. It can be reproduced in rabbits experimentally. The essential pathologic substrate is acute, interstitial granulomatous inflammatory changes. The peribronchiolar granules are composed of giant cells of foreign body type. There are proliferation of alveolar surface cells, production and thickening of reticulin fibers. Repeated exposure to causal agents may result in permanent pathologic alterations, such as fibrosis, bronchiectasis and emphysema. Symptoms during the acute phase may be mild or severe and may simulate influenza. They include cough, wheezing, paroxysms of dyspnea, slight mucopurulent sputum, tightness in the chest, malaise, chills and fever. Dyspnea may be more pronounced than physical and x-ray findings would suggest. It may persist after the acute phase. Undue exertion and exposure to cold are likely to aggravate cough and dyspnea. Basilar crepitant rales are noted. Roentgenograms reveal diffuse reticuloalveolaromatous changes. Sometimes x-ray findings are negative. Lung function studies show low static compliance, moderately impaired ventilatory function, decreased FEV1, arterial oxygen desaturation resulting from alveolar-capillary block. X-ray clearing may not be associated with proportionate clinical improvement or pulmonary functional competence. Concerning certain respiratory diseases in millers, bakers and confectioners, Kovats and Bugyi (Occupational Mycotic Diseases of the Lung, Budapest, Akademiai Kiado, 1988) arrived at the following conclusions. "The clinical picture may be A. parasites of flour producing hypersensitivity as well as other diseases, which occur mainly in obsolete plants of the milling and baking industries; B. manifestations of hypersensitivity produced by flour dust; C. toxomycotic diseases quasi superimposed on the former changes by fungi growing on cereals and flour and contaminating them; D. changes of hypersensitivity produced by flour-improving substances; E. allergy to coloring and taste-improving materials commonly used in confectionery."

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