The adverse effect of certain qualities of urban locales was recognized as early as the 12th century in the writings of philosopher, Talmudic scholar, rabbi, and physician Moses Maimonides (1135-1204 CE). As chief physician in the court of Sultan Salah Ed-Din Al-Ayyubi (Saladin), Maimonides took charge of the management of asthma that affected prince Al-Afdal, Saladin’s eldest son and successor to his rule. In his *Treatise on Asthma*, a compilation of advisory letters to Al-Afdal, Maimonides noted that “his Highness had confided that the air of Alexandria is harmful to you and whenever you fear an attack of the illness you prefer to move to Cairo where the air is much dryer and calmer, making the attack more tolerable for you.”

Twentieth-century investigative studies demonstrated particular circumstances of inner-city and poverty-stricken housing conditions, effects of industrialization, and climatic and environmental influences on urban-related asthma. Brief accounts summarizing highlights of representative reports can be found in various sections of this thematic issue (see pages 537, 562, 599, and 608). (Images are courtesy of the National Library of Medicine collection.)

Initial investigation of seasonal (September-November) outbreaks of asthma in New Orleans by a pulmonary group pointed to exposure to grain dust allergens dispersed from a grain elevator. The impression was that of a residential-industrial circumstance simulating that reported by Figley in Toledo. Contrary to that postulation, John Salvaggio, MD (1933-1999), of Tulane University, conducted extensive studies concentrated on hospital emergency department visits that uncovered valid evidence for another explanation. His 2-year study focused on the relationship of climatologic variables to semiquantitative rotoslide pollen and fungal spore aerometric sampling data, and emergency room asthma admission rates at New Orleans Charity Hospital. An interrelationship between certain climatologic factors, high airborne spore and pollen concentrations, and asthma admission rates was documented. Large asthma “epidemics” (above 40 asthma admissions per 24 hours) occurred almost exclusively from June through December and in greater magnitude during September, October, and November. Asthma “epidemics” of considerable magnitude occurred in late October and November immediately following the peak Ambrosia pollination season. Salvaggio postulated that New Orleans epidemic asthma did not involve a point source chemical or particulate pollutant but rather resulted from sensitization of the local atopic population to diverse natural inhalant allergens acting in seasonal patterns.1

For many years it was known to Toledo, Ohio, physicians that an “asthma colony” existed within a circumscribed city district. Suspicion long had pointed to a linseed oil mill as the cause of the trouble. Many asthmatic patients noted that their attacks coincided with the odor of linseed oil carried in the wind coming directly from the mill. In 1928, pioneering allergy specialist Karl Figley (1887-1976) and Robert Elwood, Toledo commissioner of public health, joined forces in investigating the clustered incidence of asthma that affected residents in the proximity of the plant. In studying the processing of source materials, they negated the suspected implication of emanating oil fumes as the cause of the common respiratory disorder. Rather, they pointed to the fact that the oil mill not only manufactured linseed oil but also expressed castor oil from castor bean “pomace” sacked and sold as an ingredient of fertilizer. Most of the castor bean residue was recovered and sacked grinding the cake obtained after the bean has been pressed. A considerable amount of fine dust did not fall through the screen of the grinding-mill and was blown into the air through pipes projecting from the mill roof. The implicated sensitizing castor bean had been identified as a potent allergenic agricultural product by Bernton five years previously.

Figley KD, Elrod RH. Endemic asthma due to castor bean dust. JAMA 1928; 90:79-82.
ALLERGY ARCHIVES
INNER CITY ASTHMA, CLIMATIC AND ENVIRONMENTAL ALLERGENS

Willem Storm van Leeuwen, MD (1882-1933), of Leiden, the Netherlands, noted the disproportionally high prevalence of respiratory disease in damp low areas and among residents of houses along the Dutch canals. These observations led to his belief that common mold growths in all houses in the low countries, and in moist, especially hot climates were important agents of allergy and asthma. Fungi and spores found in beds, carpets, rugs, floors of houses, foundations, contaminated the respired air and likely were highly toxic for some persons. Although various fungi formed allergens, the most active were species of *Aspergillus*. Initial evidence favoring Storm van Leeuwen’s finding of 12 species of mold allergens was founded on results of allergic patients’ skin test reactions. More convincing proof demonstrated: (1) subcutaneous injections with mold extracts producing general symptoms of illness in allergics, and (2) sera of sensitive persons containing substances which may transfer specific sensitiveness locally to normal persons. In 1924, a trial of moving asthmatic patients from damp canal houses to environmentally controlled residences with pure air chambers at higher elevations offered symptom relief by eliminating exposure to fungal allergens.

Storm van Leeuwen W. Allergic Diseases; Diagnosis and Treatment of Bronchial Asthma, Hay Fever and other Allergic Diseases. Philadelphia: Lippincott, 1925.
Harry Bernton (1885-1979), MD, of Howard University and Washington’s Provident and Freedman’s Hospitals allergy clinics, noted the prevalence of asthma in populations within the lowest social and economic strata. His observation led to his consideration that inhalant route allergenicity of flying insects (May fly, sand fly, mushroom fly) might have an indigenous indoor insect counterpart. In 1964, with Halla Brown (1911-1993), MD, of George Washington University, they undertook a controlled study of households that revealed endemic cockroach infestation and contamination of inadequately protected food. Dead insects, their feces, and vomitus were demonstrated to be sources of allergens. In Bernton and Brown’s study, seven and five-tenths percent of 253 normal persons showed positive skin tests with extracts of cockroaches, compared with 28 percent of an unselected group of 114 allergic patients. Skin-sensitizing antibodies were present in the blood sera of skin test positive reactors and cockroach allergen had the capacity to provoke constitutional reactions in these reactors. Since cockroaches contaminate food substances, they concluded that derivative allergens, whether ingestant or inhalant, should be given critical consideration. Accordingly, they recommended the advisability of adding cockroach extract to the routine tests of allergic patients as indicated.