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The aerial environment which provides the beneficial gases for the sustenance of life on earth, is also a repository of many toxic gases, smoke, dust and various other inorganic and organic particulate matter. The organic particulate matter constitutes the biopollutants of the atmosphere, which include, viruses, bacteria, fungal spores, pollen, insect parts and other microfauna.

As early as 1935, Meiers defined aerobiology as a scientific discipline that focusses on the passive transport of airborne organisms in both extramural and intramural environments. Later, Jacobs (1951) elaborated the term to include dispersal of insect population, fungal spores, bacteria, viruses and pollen. Currently the science of aerobiology covers several aspects of plant, human and animal pathology, entomology, allergology, air pollution effects, palynology and phytogeography (Edmonds, 1979).

The aerobiological process (Frinking & Rijstdijk, 1977) consists of five integrated steps—source, release, dispersal deposition and impact; each stage being affected by environmental factors. The airborne
particulate matter ranges from 0.001 µm to more than 100 µm.

During the recent years, environmental biologists have drawn attention to the significant role of pollen grains in environmental pollution, as they often produce hazardous effects on human life and agricultural practices (Bandyopadhay, 1988). In human beings, they are responsible for the various allergic disorders, such as allergic rhinitis, contact dermatitis, bronchial asthma etc.

Allergic response was earlier defined as the acquired, specific, altered capacity to react. Pollinosis is the term used to indicate the disorders of "Seasonal Allergic Rhinitis and Asthma", caused by the inhalation of pollen grains. Allergic symptoms are characterised by seasonal occurrence of excessive sneezing, itching and nose running accompanied sometimes by itching and inflammation of the throat.

All pollen grains do not cause allergic symptoms and each allergic individual responds in quantitatively different degrees to different allergens to which he/she is exposed.
Genetic factors play a significant role in determining an individual's susceptibility towards allergy.

A pollen grain should fulfil certain conditions in order to be considered as an important aeroallergen (Thomman, 1931).

1) it should contain an excitant of hay fever
2) it should be wind borne easily
3) it should be produced in sufficiently large quantities
4) it should be sufficiently buoyant to enable transfer to considerable distance and
5) the plant producing the pollen must be widely and abundantly distributed.

Of the various types of allergic responses to pollen, the two very significant types are Type I or immediate hypersensitivity, which is characterised by the rapid appearance of skin weals at the site of allergic contact, and is mediated by antibodies immunoglobulin E (Ig E); and Type IV or delayed hypersensitivity, in which the symptoms appear several hours after allergen contact and is mediated by precipitating antibodies, immunoglobulin G (Ig G).
Distinct allergenic substances exist within the wall of the pollen grains, but each allergenic substance may differ in its immunogenicity i.e., its ability to stimulate Ig E antibody in response to allergy, due to differences in physicochemical structure, particularly, its molecular size.

Aerobiological work in relation to allergy involves botanical, pollen analytical and clinical aspects. Botanical aspect deals with preparation of an inventory of local plants, their classification into anemophilous, entomophilous and amphiphilous plants and phenological study of the local flora.

Pollen analytical studies include:

i) aerial survey of a given geographical region in order to determine the numerical frequency of each pollen/spore type in the aerospora.

ii) monitoring the seasonal variation of pollen/spore types

iii) assessing the effect of meteorological parameters on the incidence of pollen/spore types in the ambient air

iv) identification of dominant, allergenic, air borne pollen types; and

v) preparation of pollen calendar.
Clinical aspects of aerobiological studies involve, identification of allergic symptoms/reactions, preparation of antigens, testing the patient in order to determine the offending allergen and subsequent hyposensitisation.

Aerobiological studies involving pollen allergy would be more meaningful, if all the above aspects could be taken into consideration. Although, the abundance of a plant in a locality and incidence of pollen grains in the atmosphere provides clues to the allergenic types, it is only the direct or indirect skin test that really brings to light the causative agents of respiratory allergy. (Shivpuri, 1964).

In addition to their importance in allergy, aerobiological studies play a significant role in other disciplines of science. Long term monitoring of pollen/spores would reveal changes in vegetation, devastation of forests or reforestation.

Plant pathology is another field where aerobiology finds significance. Many fungal spores are capable of causing considerable damage to forests and agricultural crops. Knowledge of the type of pathogens, source,