

PRACTICAL ALLERGY

A detailed botanical illustration in a light, textured style, possibly a woodcut or engraving, set against a dark, textured background. The illustration depicts a plant with several pinnate leaves, each composed of many small, oval leaflets. A prominent, long, drooping raceme of numerous small, light-colored flowers or fruits extends from the upper left towards the center of the cover. The overall aesthetic is that of a classic scientific or medical text.

M. COLEMAN HARRIS
and
NORMAN SHURE

BUTTERWORTHS

PRACTICAL ALLERGY

by

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TO THE DISTAFF,
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and
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Preface

A major portion of allergy practice currently is in the hands of the general practitioner and of the specialist whose practice is not limited to allergy and who does not devote much of his time to this important and increasing phase of medical practice. This, in part, is a result of the simplification and standardization of skin-testing procedures and the availability of potent and long-lasting allergy extracts from commercial sources. Because of this, a much larger segment of the population with allergic diseases is receiving more allergy therapy than previously when all the available allergy care was concentrated in very limited practices.

Yet, despite numerous postgraduate courses offered each year and the voluminous literature available on the subject, the knowledge of the part-time allergist has not kept pace with his increasing practice. To some extent, this is due to the apparent controversies and paradoxes which one notes when trying to read the current literature on allergy in medical journals and in available textbooks.

Admittedly, all answers to questions in this complex field of hypersensitivity diseases are not known. The specialty of allergy is in a period of transition from treatment on a more-or-less empiric basis to that of an increasing awareness and understanding of the interrelationships of the hyperimmune response, the glands of internal secretion, the relation of serotonin to anaphylactic shock, and such diverse factors as changes in barometric pressure and personal emotional problems. The fact remains, however, that the bulk of the patients with uncomplicated allergy, such as hay fever, are

being treated by the physician who is not particularly concerned with the unexplained aspects of this dynamic subject. Therefore, there is need for a comparatively simple textbook which this doctor can use and refer to, a *vade mecum* of the handling of diseases of allergic origin.

This text, which we hope fills this need, is based on the experience of the authors in teaching senior medical students at the College of Medical Evangelists, Los Angeles, California. In our opinion, if there is any one fault in this volume, it is that of oversimplification. This is intentional and is designed to enhance the ability of the doctor to treat the patient with hypersensitivity disease.

We hope, in addition, that the medical student, in fighting his way through the complex maze of specialty courses, will find this book useful, uncomplicated, and practical.

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M. COLEMAN HARRIS
NORMAN SHURE

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AEROSOLS: Atomizer. Nebulization. Vaporization.

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History of Allergy

The earliest record of what may have been an allergic reaction is in the year 3000 B.C. when Shen Nung, Emperor of China, forbade pregnant women to eat fish (especially shrimp), chicken, or horsemeat. He thought ingestion of these foods was causing ulceration of the skin. In the first century B.C., Lucretius uttered his oft-quoted maxim, "One man's meat is another man's poison." It is usually considered that he had allergy in mind. Migraine, now considered by many due to an allergic reaction, was first described by Aretaeus in A.D. 110. Galen (A.D. 130-200) was another early investigator who described migraine. He made further observation that some individuals always sneezed in the presence of certain flowers and plants, although, of course, he had no conception of the process involved.

In the Babylonian Talmud (Fifth Century A.D.), a treatment for gastrointestinal symptoms suspicious of egg allergy is described. Egg white in small increasing amounts was prescribed; this corresponds amazingly to present-day food allergy desensitization. The literature of the early Jews abounds in dietary restrictions and food prohibitions which suggests that observed reactions were allergic in nature. The term "asthma" first appears in the writings of Hippocrates. In his sixty-fourth aphorism, Hippocrates gives further evidence of his keen perception regarding allergy when he states that "It is a bad thing to give milk to persons having headache."

Knowledge continued despite lack of recording and it is not until the Sixteenth Century that we find record of further allergy observations. The effect of plants, flowers, shrubs, or trees on certain individuals, recognized earlier by Galen, was again recognized in 1565 by Botallus, by Van Helmont in 1600, and by Benningerus in 1673. Ledel and Hunerwold ten years later and De Rebecque and Riedlin in the 1690's leaned toward a theory that roses caused sneezing attacks. Willis in 1621 was one of the first to suggest that certain foods could cause asthmatic paroxysms. Timaeus in 1667 and Scott in 1776 described asthma as due to inhalation, specifically the "effluvia" of ipecacanha.

On an especially cold day in February, 1633, Samuel Pepys, while walking through a park, suffered an asthmatic attack. Whether the attack was really due to the cold cannot be established, but it has been described as an early example of physical allergy. Later, Bouron in 1863 described a case of urticaria and syncope due to cold, and there is a classic description of urticaria due to cold which appears in the medical literature published by Blachez in 1872.

The first formal report of a fatal anaphylactic reaction following the injection of foreign protein into the human circulation was published by Dennis in 1667 when the death of a mentally deranged patient occurred after a second transfusion of calf's blood. The mechanism by which death was produced in these cases was not understood until 1875 when it was demonstrated that animal serum actually hemolyzed human red blood corpuscles.

In 1819, the London physician, John Bostock, reported a "Case of a Periodical Affection of the Eyes and Chest," which was in essence a history of his own affliction. His description of the sequence of hay fever symptoms is a classic. In part, he said:

"About the beginning or middle of June in every year the following symptoms make their appearance, with a greater or less degree of

violence. A sensation of heat and fullness is experienced in the eyes, first along the edge of the lid, and especially in the inner angles, but after some time over the whole of the ball. At the commencement the external appearance of the eye is little affected, except that there is a slight degree of redness and a discharge of tears. This state gradually increases, until the sensation becomes converted into what may be characterized as a combination of the most acute itching and smarting, accompanied with a feeling of small points striking upon or darting into the ball, at the same time that the eyes become extremely inflamed and discharge very copiously a thick mucous fluid . . .

"After this state of the eyes has subsided for a week or ten days, a general fullness is experienced in the head, and particularly about the forepart; to this succeeds irritation of the nose, producing sneezing, which occurs in fits of extreme violence, coming on in paroxysms, at uncertain intervals. To the sneezings are added a further sensation of tightness of the chest, and a difficulty of breathing, with a general irritation of the fauces and trachea. There is no absolute pain in any part of the chest, but a feeling of want of room to receive the air necessary for respiration, a huskiness of the voice, and an incapacity of speaking aloud for any time without inconvenience."

Nine years later, in 1828, Bostock read a second paper. This was entitled, "Of the Catarrhus Aestivus, or Summer Catarrh." In this paper, Bostock used the term "hay fever" for the first time. In 1836, John Elliotson, another Englishman, experimented with pollen and formally suggested in a medically published paper that the disease actually was due to pollen sensitivity. But it was Charles Harrison Blackley of Manchester who, by means of a skin test in 1867, proved and identified grass pollen as the fundamental cause of hay fever. He described his findings as follows:

"Whilst I was still suffering from my usual attack of hay fever, during the summer of 1865 (July 13th) as much pollen as could be obtained from two anthers on the *Lolium Italicum* was applied to the center of the anterior surface of one forearm after the skin had been abraded as in the ordinary mode of vaccinating. A space of about a quarter of an inch was abraded, and to this the quantity of pollen named was applied after being placed on a piece of wet lint the size of the abrasion. This was covered with a piece of thin gutta

percha and the whole was held in position by a strip of adhesive plaster. The center of the other forearm was treated in exactly the same manner save and except that no pollen was applied to it. The scratching with the lancet raised a wheal such as is seen in the urticaria or in stinging with nettles. In a few minutes after the pollen had been applied the abraded spot began to itch intensely; the parts immediately around the abrasion began to swell, but this was not apparently due to any action of the *cutis vera* . . . The swelling attained its maximum in six hours, and then remained stationary for another eight hours; after this it gradually subsided and in forty-eight hours it had entirely disappeared. The arm to which no pollen had been applied did not exhibit any sign of swelling."

In 1903, W. P. Dunbar of Hamburg, Germany, stimulated by the work of Bostock and Blackley, confirmed their observation that certain grass pollens caused hay fever. At about this same time, however, an important experiment bearing on allergy was reported by Richet. While traveling in the Indian Ocean a few years earlier, Richet had been impressed with the urticarial reaction produced on contact with the Portuguese man-of-war, a jelly fish. Continuing his experiments in France, he inoculated dogs with an extract of the sea anemone, a variety of stinging nettle; and found that, although the first injection was entirely harmless, a second injection, if given after a certain interval of time, resulted in a severe toxic reaction, sometimes fatal. It was Richet and his associates, Hericourt and Portier, who correlated their observations with the increasing reports of untoward reactions resulting from the use of the newly discovered diphtheria antitoxin and propounded the basic concepts which still remain valid: (1) A foreign substance on first injection is harmless; on reinjection may be harmful or even fatal; (2) an interval of several days is necessary between injections. For this, he coined the term, *anaphylaxis*, which literally means de-protection and is in contrast with *prophylaxis*, or preprotection.

Clemens von Pirquet, observing a similar reaction in