History of Allergy

Alan Edwards

The term ‘Allergy’ was first used by the Austrian paediatrician, Clemens von Pirquet (1874–1929) (Fig. 1), in a paper in the journal *Münchener Medizinische Wochenschrift* in 1906 [1].

In the latter years of the nineteenth century, great progress had been made in the treatment of diseases such as tetanus and diphtheria using antitoxins raised in animals by the injection of a toxin. Emil von Behring (1854–1917) carried out the first successful treatment of a diphtheria patient using diphtheria antitoxin raised in dogs in 1891.

However, it had also been recognised that giving an animal repeated injections of a toxic substance did not always provide protection against that toxin, immunity; sometimes it resulted in hypersensitivity or supersensitivity, the latter term used by Carl Praunitz [2] in his English translation of von Pirquet’s paper. von Behring described the sudden death of animals hyperimmunised against tetanus that occurred when they were subsequently injected with a small dose of the same toxin as a ‘paradoxical reaction’. Charles R. Richet (1850–1935) was among the first to recognise the significance of supersensitivity. He was also the first to use another important word, anaphylaxis. In a joint paper with Paul J. Portier (1866–1962) in the *Bulletin of the French Biological Society* in 1902 [3], he used it to describe the attribute which certain poisons possess of increasing instead of diminishing the sensitivity of an organism to their action. He described anaphylaxis as the condition opposite to protection (phylaxis).

To return to the paper by von Pirquet, he debated whether immunity and supersensitivity were separate entities or were related. He concluded that they were closely interrelated. He went on to write:

> What we need is a new generalised term, which prejudices nothing but expresses the change in condition which an animal experiences after contact with any organic poison, be it animate or inanimate.

*The vaccinated person behaves towards vaccine lymph, the syphilitic towards the virus of syphilis, the tuberculous patient towards tuberculin, the person injected with serum...*
towards the serum, in a different manner from him who has not previously been in contact with such an agent. Yet he is not insensitive to it. We can only say of him that his power to react has undergone a change.

For this general concept of a changed reactivity I propose the term Allergy. ‘Allos’ implies deviation from the original state, from the behaviour of the normal individual, as it is used in the words Allorhythmia, Allotropism.

Further on in the paper, he distinguishes between Allergen and Antigen.

The word antigen implies a substance capable of giving rise to an antibody. The term Allergen is more far reaching. The allergens comprise, besides the antigen proper the many protein substances which lead to no production of antibodies but to supersensitivity.

The paper was written before the identification of IgE antibodies and the mechanisms of supersensitivity were unknown.

Finally von Pirquet wrote:

The term immunity must be restricted to those processes in which the introduction of the foreign substance into the organism causes no clinically evident reaction, where, therefore, complete insensitivity exists

Over the years the term allergy has lost its original definition as provided by von Pirquet whereby it just implied a changed reactivity and is now used synonymously with hypersensitivity or supersensitivity. In a lecture on the hypersensitivity reactions given in 1991 [4], R.R.A. Coombs (1921–2006) argued for a return to von Pirquet’s original concept which he illustrated as shown in Fig. 2.