

# NEWS



## DR ANN ORREN

### Pioneer South African Allergist and Immunologist

Dr Ann Orren is one of the key pioneers of allergy in South Africa. Not only have her widely quoted IgE studies been important for South African allergy, but her identification of the Bermuda grass *Cynodon dactylis* allergen was of international significance.

Ann was born in Worthing in England and educated at Elleslie Girls' High, Sea Point. She completed a BSc degree in 1960 (majoring in Mathematics and Physics with distinction), obtained her MB ChB from the University of Cape Town in 1966, and qualified as a specialist microbiologist in 1986.

Ann always maintained a keen interest in research. She is married to Professor Michael Orren (Emeritus Professor of Oceanography, National University of Ireland, Galway) and has two daughters and a grandchild.

The IgE molecule was discovered by Johansson and Ishizaki in 1968 and because its distribution and significance in different populations was unknown, particularly in the African continent, Ann initiated the first studies of IgE levels in different population groups, using sera obtained from blood donors, and immune diffusion using a Mancini technique.

She also compared IgE values in people infected with *Ascaris lumbricoides* and other parasites with those of uninfected individuals. She received an MD in 1974 from the University of Cape Town. Her studies were conducted in the Department of Clinical Science and Immunology under the guidance of Professor Eugene Dowdle.

A major new finding from her IgE studies was that the ranges of IgE encountered in the 'European', coloured and Xhosa populations differed significantly, with the mean values in the Xhosa adult population above 500 Ku/L.<sup>1</sup> Reasons for this observed variation are still not completely understood, although parasite infestation may partially account for some of the differences.

The normal ranges for IgE values established by Dr Orren in South African populations have become references for routine use in clinical evaluation of allergies, still used at the present time. The isolation and characterisation of the major allergen in Bermuda grass involved extensive and tedious immunological techniques including ultracentrifugation, isoelectric focusing, sephadex and DEAE cellular chromatography.

The publication of the molecular characteristics of the Bermuda grass major Cyn d 1 allergen in the *South African Medical Journal*<sup>2</sup> was a first, and illustrated the high level of molecular immunological expertise available at the immunology laboratory at the University of Cape Town. This paper has been widely cited and was critically important for the future standardisation of the Bermuda grass skin-prick tests and vaccine production.

Over the past 18 years Dr Orren has devoted her intellectual and research energies to understanding the immunological and molecular basis for the increased prevalence of C6 deficiency in the South Africa population in the Western Cape.

I was fortunate to be actively involved in assisting her with the clinical identification and management of over 50 C6-deficient patients who were identified either as index cases or siblings of patients presenting with recurrent meningococcal meningitis. Together we established a clinic at Grootte Schuur Hospital for ongoing management and surveillance of this unique group of patients and were able to show in follow-up studies that prophylaxis with monthly intramuscular penicillin prevented recurrence of meningitis attacks in these patients.<sup>3</sup>

At the same time Dr Orren identified a unique subset of patients with partial C6 deficiency, and in collaboration with Sir Prof Peter Lachman's molecular Immunopathology MRC Unit in Cambridge, identified the genes and several polymorphic variants of the C6 gene. Numerous international publications have followed this important work.<sup>4,6</sup>

Dr Orren's scientific explorations have come full circle because she is currently on a voluntary 'sabbatical' in South Africa, conducting a 15-20 year follow-up study of the C6D patients in our Immunology Clinic at Grootte Schuur Hospital. She will also be studying the expression of allergic and pseudoallergic reactions in these subjects, compared with matched non-C6-deficient controls.

The role of the complement system (e.g. C5a) in mast cell degranulation appears to be important in auto-immune anti-IgE-receptor-mediated urticaria, but its role

in other allergic processes remains largely unexplored.

Dr Orren's contributions have been significant and unique. It is therefore appropriate that the Allergy Society recently awarded Dr Ann Orren honorary life membership of the Society in recognition of her work.



## Professor Paul C Potter

MD, FCP(SA), FAAAAI

Director: ADCRU

## REFERENCES

1. Orren A, Walls RS, Dowdle EB. Serum immunoglobulin E concentrations of allergic patients and blood donors, influence of allergy, sex and race on IgE values. *S Afr Med J* 1975; **49**: 1387-1390.
2. Orren A, Dowdle EB. Studies on Bermuda grass pollen allergens. *S Afr Med J* 1977; **51**: 586-591.
3. Potter PC, Frasch CE, Van der Sande JM, Looper RC, Patel Y, Orren A. Studies of prophylaxis against *N. meningitidis* infections in patients with complement component C6 deficiency. *J Infect Dis* 1990; **161**: 932-937.
4. Orren A. Screening for complement deficiency methods. *Mol Biol* 2000; **150**: 139-158.
5. Orren A. Molecular mechanisms of complement component C6 deficiency: A hyper variable exon 6 responsible for three of six reported defects. *Clin Exp Immunol* 2000; **119**: 255-258.
6. Morgan BP, Orren A. Vaccination against meningococcus in complement deficient individuals. *Clin Exp Immunol* 1998; **114**: 327-329.