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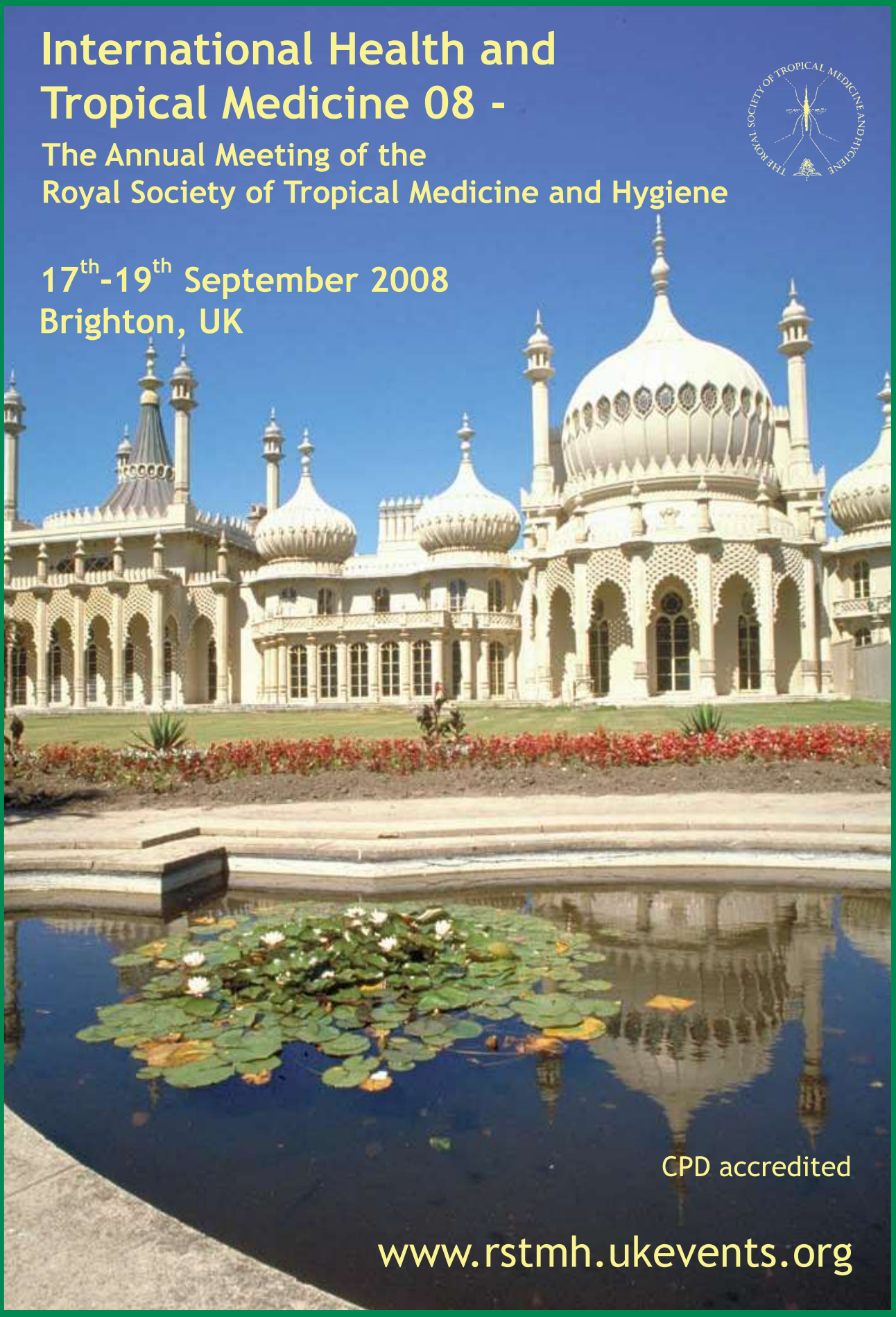

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Final Programme and Abstracts

village-specific peaks for linkage: in Um Salala at 1p22 and 5q34 ($p=1.6x10^{-4}$, p=0.047 respectively), in El Rugab at 1q31.1, 5q35.3 and at 6q27 (p=0.007, p=0.002, $p=8.95x10^{-5}$) To confirm linkage, 21 multicase pedigrees (scan2 families) were genotyped across positive regions.
Analysis of scan1+2 families stratified by village demonstrated a major gene on 6q27 (LOD score 3.07; $p=8.6x10^{-5}$) and on 1q31.1 (LOD score 1.25; p=0.008) in ElRugab only, on 1p22 (LOD score 1.19; P=0.009) for Um-Salala. These results indicate that VL susceptibility might be complex inheritance and that population substructure could be vital in the implication of the disease in different populations.

P.21 Reduction in malaria-associated anaemia on Bioko Island, Equatorial Guinea (EG)

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Background: The Bioko Island Malaria Control project (BIMCP) is a partnership of government, extractive industries led by Marathon Oil, non-profits led by Medical Care Development International, and academic organizations including the South African Medical Research Council, London School of Hygiene and Tropical Medicine, Yale and Harvard Universities. The BIMCP conducted seven rounds of indoor spraying on Bioko Island since 2004, and strengthened improved case management in 2005 distributing artemisinin-based treatments, iron, vitamin A (VA) supplements and deworming drugs. Objectives: We assessed the possible impact of malaria control activities on malaria-associated anaemia.
Materials and Methods: The BIMCP conducted an annual household survey in all inhabited areas of Bioko. Sampling was stratified in 18 sites to cover all ecological niches. Sample size was intended to show changes inside each sentinel site. Haemoglobin was measured with Hemocue portable photometers and parasitemia with ICT Malaria rapid diagnostic tests (RDTs).
Results: Anaemia (Haemoglobin < 11 g/dL) prevalence declined in children under 5 years of age, more markedly among those without malarial parasitemia (unadjusted proportions):

	2004	2005	2006	2007	2008
RDT+	89.2 %	89.1 %	87.4 %	76.2 %	50.6 %
RDT-	65.9 %	70.5 %	63.0 %	62.8 %	34.7 %

Discussion: In addition to a possible cumulative effect of malaria control activities, related activities such as iron and VA supplementation, dietary diversification after counselling, and deworming could have had an additive effect in the reduction in anaemia prevalence. The delayed effect could be result of increased adherence to treatment guidelines by providers and caretakers, as documented by supervisory data and exit interviews with mothers.

P.22 Genetic Diversity at the Domain II Locus of Plasmodium vivax Apical Membrane Antigen-1 (PvAMA-1) in Sri Lankan Isolates

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In depth understanding of genetic diversity and population structure of candidate antigens is essential for the development of new control strategies, including vaccines and more effective drugs against malaria.
Diversifying selection was previously observed strongly in Domain II of *Plasmodium vivax* AMA-1 in Sri Lanka. Thus, the genetic diversity of Domain II of PvAMA-1 was investigated by PCR amplification and direct sequencing of 44 single clonal field isolates, 29 from a malaria endemic area (EA) and 15 from a non-endemic area (NEA). Eighteen haplotypes, 23 polymorphic sites and 24 nucleotide polymorphisms were observed; while one site was trimorphic, the rest were dimorphic with six sites being singleton variants. Pairwise diversity ($\pi = 0.0092$) was lower than was reported earlier using a smaller sample size ($\pi = 0.0097$). Twenty of 24 nucleotide polymorphisms caused non-synonymous substitutions and the ratio of non-synonymous (NS) to synonymous (S) substitutions was >1 indicating positive selection acting on this region.
Higher nucleotide diversity ($\pi = 0.01$) and polymorphic sites (S = 22) were observed in the EA compared with NEA ($\pi = 0.008$, S = 18). Though not significant, a higher number of NS changes were observed in EA (19) than in NEA (14). NS to S substitution ratio was higher in the EA (dN/dS = 1.83), compared with NEA (dN/dS = 1.00). Allelic diversity and positive selection acting on Domain II of PvAMA-1 gene was evident possibly due to immune pressure, even under low and unstable malaria transmission conditions prevalent in the island.

P.23 Scabies: U.K. epidemiology by region, age and sex

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EPIC provided the Parasite Epidemiology Unit (Southampton) with UK THIN (The Health Information Network) data from 1997 to 2005 of 2M patients covering the 12 regions of the UK. Read codes for Scabies were extracted. The full sex and age datasets allowed the following hypotheses to be tested:
A. Of the proposed, approximately 10 year, cycles
B. Gender bias
C. Regional variation by testing the 12 regions of the UK against each other.
UK wide infestation rose and fell steadily peaking in 2000/2001 most obviously in London, the South East and Northern Ireland. There was however regional variation with, for example, the North East and Scotland peaking in 1997. Rise and fall in all areas were consistent with the hypothesis of 10 year cycles. Gender bias, not reported elsewhere, was found with 22037 males infested in the period compared with 27776 females. The 9 year average annual rate per thousand was 2.81 /1000 in females and 2.27/1000 in males (relative risk 1.24) In all years the North East of England showed the highest rate per thousand (5.91/1000 in females and 4.62/1000 in males) with lowest rate in London (1.26/1000 in females and 1.2/1000 in males). The regions were ranked: North East, North West, Yorkshire and Humberside, West