MalariaWorld Nr. 144 (24 December 2007)

It is the time of year to look back at 2007. It was only in June that we took over the MIMCom Malaria News Update from the US National Library of Medicine (NLM) and renamed it MalariaWorld. Here we would like to express our gratitude to Ms. Julia Royall from NLM for her enthusiasm and continuing support.

We have since e-published MalariaWorld weekly and have seen the number of subscribers grow with nearly 400 over the last six months (approaching 2500 in total). We have also expanded our weekly literature search to well beyond 125 journals and numerous news websites.

It is our aim to become the most comprehensive malaria information web-portal available. We will soon launch the first MalariaWorld in HTML format. The MalariaWorld homepage is now available at **www.malaria-world.com** and a more extended website is currently under construction. We are full of new plans too. For the future, we will do our level best to improve and expand our services to you. Please share your ideas with us at any time. It is your MalariaWorld!

We wish you all a very healthy, peaceful, and prosperous 2008.

Bart & Inga

▪▪▪ Publications ▪▪▪

Expression of Toll-like receptors on antigen-presenting cells in patients with falciparum malaria (Subscription)
Somying Loharungsikul, Marita Troye-Blomberg, Petra Amoudruz, Sathit Pichyangkul, Kosol Yongvanitchit, Sornchai Looareesuwan, Yuvadee Mahakunkijcharoen, Suphannee Sarntivijai and Srisin Khusmith
Acta Tropica, *Volume 105, Issue 1*, *January 2008*, *Pages 10-15*
These findings suggested that TLRs might play role in innate immune recognition in which the differential expression of TLRs on APCs could be regulated by the *P. falciparum* parasite.

Seasonal patterns of Plasmodium falciparum gametocyte prevalence and density in a rural population of Burkina Faso (Subscription)
André Lin Ouédraogo, Sake J. de Vlas, Issa Nébié, Edith Ilboudo-Sanogo, J. Teun Bousema, Aboubakar S. Ouattara, Jan Peter Verhave, Nadine Cuzin-Ouattara and Robert W. Sauerwein
Acta Tropica, Volume 105, Issue 1, January 2008, Pages 28-34
In this study, season appears to be an independent parameter that determines gametocyte prevalence and density and should be considered to be included in epidemiological studies on malaria transmission.

Abandoning small-scale fish farming in western Kenya leads to higher malaria vector abundance (Subscription)
Annabel F.V. Howard and Francois X. Omlin
Acta Tropica, Volume 105, Issue 1, January 2008, Pages 67-73
This study highlights the potential public health problems associated with the abandonment of small-scale fish farming in the highlands of western Kenya.

Marked differences in the prevalence of chloroquine resistance between urban and rural communities in Burkina Faso (Subscription)

Peter E. Meissner, Germain Mandi, Frank P. Mockenhaupt, Steffen Witte, Boubacar Coulibaly, Ulrich Mansmann, Claudia Frey, Heiko Merkle, Juergen Burhenne, Ingeborg Walter-Sack and Olaf Müller
Acta Tropica, Volume 105, Issue 1, January 2008, Pages 81-86
Even within circumscribed geographical areas, CQ efficacy can vary dramatically. The differences in the prevalence of *pfcrt* T76 and in CQ failure rates are probably explained by a higher drug pressure in the urban area compared to the rural study area. This finding has important implications for national malaria policies.

Serial analysis of gene expression in Plasmodium berghei salivary gland sporozoites (Open access)
Rosinski-Chupin I, Chertemps T, Boisson B, Perrot S, Bischoff E, Briolay J, Couble P, Menard R, Brey P, Baldacci P
BMC Genomics, 2007 8:466 (19 December 2007)
These novel sporozoite expressed genes, especially those expressed at high levels in salivary gland sporozoites, are likely to play a role in Plasmodium infectivity in the mammalian host.

Pharmacokinetics and clinical efficacy of lorazepam in children with severe malaria and convulsions (Subscription)
Simon N. Muchohi, Kenneth Obiero, Charles R. J. C. Newton, Bernhards R. Ogutu, Geoffrey Edwards & Gilbert O. Kokwaro
British Journal of Clinical Pharmacology, Volume 65 Issue 1 Page 12-21, January 2008
Administration of LZP (0.1 mg kg−1) resulted in rapid achievement of plasma LZP concentrations within the reported effective therapeutic range without significant cardiorespiratory effects. I.m administration of LZP may be more practical in rural healthcare facilities in Africa, where venous access may not be feasible.

The Exoneme Helps Malaria Parasites to Break out of Blood Cells (Subscription)
CJ Janse, AP Waters
Cell, Volume 131, Issue 6, 14 December 2007, Pages 1036-1038
Malaria parasites must invade the erythrocytes of its host, to be able to grow and multiply. Having depleted the host cell of its nutrients, the parasites break out to invade new erythrocytes. In this issue of *Cell*, Yeoh et al. (2007) discover a new organelle, the exoneme, that contains a protease SUB1, which helps the parasite to escape from old erythrocytes and invade new ones.

Subcellular Discharge of a Serine Protease Mediates Release of Invasive Malaria Parasites from Host Erythrocytes (Subscription)
Sharon Yeoh, Rebecca A. O'Donnell, Konstantinos Koussis, Anton R. Dluzewski, Keith H. Ansell, Simon A. Osborne, Fiona Hackett, Chrislaine Withers-Martinez, Graham H. Mitchell, Lawrence H. Bannister, Justin S. Bryans, Catherine A. Kettleborough and Michael J. Blackman
Cell, Volume 131, Issue 6, 14 December 2007, Pages 1072-1083
Our findings reveal the presence in the malarial parasitophorous vacuole of a regulated, PfSUB1-mediated proteolytic processing event required for release of viable parasites from the host erythrocyte.

Plasmodium knowlesi Malaria in Humans Is Widely Distributed and Potentially Life Threatening (Open access)
Janet Cox-Singh, Timothy M. E. Davis, Kim-Sung Lee, Sunita S. G. Shamsul, Asmad Matusop, Shanmuga Ratnam, Hasan A. Rahman, David J. Conway, and Balbir S
Clinical Infectious Diseases 15 January 2008, Vol. 46, No. 2: 165-171
Human infection with *P. knowlesi,* commonly misidentified as the more benign *P. malariae,* are widely distributed across Malaysian Borneo and extend to Peninsular Malaysia. Because *P. knowlesi* replicates every 24 h, rapid diagnosis and prompt effective treatment are essential. In the absence of a specific routine diagnostic test

for *P. knowlesi* malaria, we recommend that patients who reside in or have traveled to Southeast Asia and who have received a *"P. malariae"* hyperparasitemia diagnosis by microscopy receive intensive management as appropriate for severe falciparum malaria.

Editorial Commentary: Plasmodium knowlesi: The Fifth Human Malaria Parasite (Open access)
N. J. White
Clinical Infectious Diseases 15 January 2008, Vol. 46, No. 2: 172-173
Despite its simian preference, it is legitimate to claim *P. knowlesi* to be the fifth human malaria parasite.

Identification and characterization of the receptor for the Bacillus sphaericus binary toxin in the malaria vector mosquito, Anopheles gambiae (Subscription)
O Opota, JF Charles, S Warot, D Pauron, I Darboux
Comparative Biochemistry and Physiology Part B: Biochemistry and Molecular Biology, Article in Press, Corrected Proof
Overall, our results indicate that the three mosquito genes examined share a very similar organization and are strongly conserved at the amino acid level, in particular in the NH_2-terminus, a region believed to contain the ligand binding site, suggesting that relatively few amino acids residues are critical for high affinity binding of the toxin.

Childhood asymptomatic malaria and nutritional status among Port Harcourt children (Open access)
ZA Jeremiah**,** EK Uko
East Afr J Public Health 2007 Oct;4(2): 55-8
We concluded that the presence of under nutrition places children (especially below 5 years of age) at higher risk of malaria related morbidity. Children in malaria endemic areas need adequate nutrition to withstand the negative impact of malaria.

Consumer survey of malaria fact card: an educational and communication tool in Tanzania (Open access)
Chambuso, M.; Mugoyela, V. & Kalala, W.
East Afr J Public Health 2007 Oct;4(2):59-63
We conclude that the malaria fact card is useful as a health educational and communication tool. It is recommended that pharmacists should provide quality and educative information through use of communication tools such as updated malaria fact cards.

Appraisal on the prevalence of malaria and anaemia in pregnancy and factors influencing uptake of intermittent preventive therapy with sulfadoxine-pyrimethamine in Kibaha district, Tanzania (Open access)
Tarimo, Donath S.
East Afr J Public Health 2007 Oct;4(2): 80-3
Severe malarial anaemia is still a health problem in pregnancy, conceivably due to low coverage of IPT with SP because of erratic availability of SP. There is a major gap on appropriate timing for IPT with SP that should be corrected.

Genetic exchange in 2La inversion heterokaryotypes of Anopheles gambiae (Subscription)
A. D. Stump, M. Pombi, L. Goeddel, J. M. C. Ribeiro, J. A. Wilder, A. D. Torre and N. J. Besansky
Insect Molecular Biology, Volume 16 Issue 6 Page 703-709, December 2007
These results suggest that reduced recombination is a necessary but not sufficient mechanism for genetic isolation between alternative arrangements, and that the targets of natural selection can be identified against the different chromosomal backgrounds.

Identification and molecular characterization of a novel protein Saglin as a target of monoclonal antibodies affecting salivary gland infectivity of Plasmodium sporozoites (Subscription)
M. A. Okulate, D. E. Kalume, R. Reddy, T. Kristiansen, M. Bhattacharyya, R. Chaerkady, A. Pandey and N. Kumar
Insect Molecular Biology, Volume 16 Issue 6 Page 711-722, December 2007
The amino acid sequence of Saglin contains a signal peptide suggesting that Saglin is a secreted protein. If Saglin is indeed involved in the process of invasion of *A. gambiae* salivary glands by sporozoites of *Plasmodium*, it could provide a novel target for future investigations aimed at interruption of malaria transmission.

X and Y chromosome inheritance and mixtures of rDNA intergenic spacer regions in Anopheles gambiae (Subscription)
E. E. Wilkins, P. I. Howell and M. Q. Benedict
Insect Molecular Biology, Volume 16 Issue 6 Page 735-741, December 2007
These results demonstrate that M and S IGS types can occur within the rDNA arrays of a chromatid in laboratory *A. gambiae* stocks, and some *A. gambiae* s.s. have rDNA on the Y chromosome.

Letter to the Editor: Chorea in a 29-year-old Nigerian following antimalarial treatment with artesunate (Subscription)
O.A. Busari and G. Oligbu
International Journal of Infectious Diseases, In Press, Corrected Proof
No abstract available

Purine nucleobase transport in the intraerythrocytic malaria parasite (Subscription)
Megan J. Downie, Kevin J. Saliba, Stefan Bröer, Susan M. Howitt and Kiaran Kirk
International Journal for Parasitology, *Volume 38, Issue 2*, *February 2008*, *Pages 203-209*
The results indicate that nucleobases enter the intraerythrocytic parasite via a rapid, equilibrative process that has kinetic characteristics similar to those of PfENT1.

High gametocyte complexity and mosquito infectivity of Plasmodium falciparum in the Gambia (Subscription)
Davis Nwakanma, Amani Kheir, Mercy Sowa, Sam Dunyo, Musa Jawara, Margaret Pinder, Paul Milligan, David Walliker and Hamza A. Babiker
International Journal for Parasitology, *Volume 38, Issue 2*, *February 2008*, *Pages 219-227*
These findings emphasise the crucial role of gametocyte complexity and infectivity in generating the remarkable diversity of *P. falciparum* genotypes seen in infected people, even in an area of seasonal transmission.

Natural regulatory ($CD4^+CD25^+FOXP^+$) T cells control the production of pro-inflammatory cytokines during Plasmodium chabaudi adami infection and do not contribute to immune evasion (Subscription)
M. Cambos, B. Bélanger, A. Jacques, A. Roulet and T. Scorza
International Journal for Parasitology, *Volume 38, Issue 2*, *February 2008*, *Pages 229-238*
Taken together, our data suggest that the expansion and activation of natural Treg cells represent a counter-regulatory response to the overwhelming inflammation associated with lethal *P.c. adami*. This response to infection involves TH1 lymphocytes as well as cells from the innate immune system.

Ethnopharmacology and malaria: New hypothetical leads or old efficient antimalarials (Subscription)
G. Bourdy, M.L. Willcox, H. Ginsburg, Ph. Rasoanaivo, B. Graz and E. Deharo

International Journal for Parasitology, Volume 38, Issue 1, January 2008, Pages 33-41
Discrepancies often observed between strong ethnopharmacological reputation and laboratory results are discussed, as well as new research perspectives.

Immunogenicity of Plasmodium yoelii merozoite surface protein 4/5 produced in transgenic plants (Subscription)
Lina Wang, Diane E. Webster, Alison E. Campbell, Ian B. Dry, Steve L. Wesselingh and Ross L. Coppel
International Journal for Parasitology, Volume 38, Issue 1, January 2008, Pages 103-110
Further strategies are needed to achieve a protective dose, including improvements to antigen expression levels in plants and strategies to enhance the immunogenicity of the expressed antigen.

Suppression of Lethal Plasmodium yoelii Malaria following Protective Immunization Requires Antibody-, IL-4-, and IFN-{gamma}-Dependent ResponsesInduced by Vaccination and/or Challenge Infection (Subscription)
Patricia M. Petritus and James M. Burns, Jr.
J Immunol 2008;180 444-453
Combined, the data indicate that induction of protective responses by merozoite surface protein-based vaccines depends on IL-4 and IFN-γ-dependent pathways and that vaccine efficacy is significantly influenced by host responses elicited upon infection.

Efficient Development of Plasmodium Liver Stage–Specific Memory CD8+ T Cells during the Course of Blood-Stage Malarial Infection (Subscription)
Julius C. R. Hafalla, Urvashi Rai, Dabeiba Bernal-Rubio, Ana Rodriguez, and Fidel Zavala
The Journal of Infectious Diseases 2007;196:1827–1835
Thus, erythrocytic infection does not preclude the establishment of memory $CD8^+$ T cell responses to malarial liver stages.

Anopheles gambiae s.s. breeding in polluted water bodies in urban Lagos, southwestern Nigeria (Open access)
T.S. Awolola, A.O. Oduola, J.B. Obansa, N.J. Chukwurar & J.P. Unyimadu
J Vector Borne Dis 44, December 2007, pp. 241–244
These results indicate that An. gambiae s.s. is adapting to a wide range of water pollution in this urban area. The survival of the mosquito in widespread polluted water bodies across Lagos metropolis could be responsible for the rise in the incidence of malaria.

Morphological method for sexing anopheline larvae (Open access)
S.N. Emami, H. Vatandoost, M.A. Oshaghi, F. Mohtarami, E. Javadian & A. Raeisi
J Vector Borne Dis 44, December 2007, pp. 245–249
The sex separation at the larval stage will provide a clue for embryonic origin of sex organs, insecticide selection at the larval stage, sex related genes, male sterility and other measures.

Prevalence of malaria as co-infection in HIV-infected individuals in a malaria endemic area of southeastern Nigeria (Open access)
C.C. Onyenekwe, N. Ukibe, S.C. Meludu, A. Ilika, N. Aboh, N. Ofiaeli, M. Ezaeni & A. Onochie
J Vector Borne Dis 44, December 2007, pp. 250–254
The present study observed different prevalence rates of P. falciparum malaria amongst the three groups. The prevalence was tripled in symptomatic HIV seropositive group. This shows a clear departure from possible obtainable prevalence of malaria infection alone in this malaria endemic area. Due to the mortality rates associated with malaria infection in an endemic area, it may be necessary that routine malaria screening be adopted as part of the management policy to check the co-infection.

Change of serum transferrin receptor due to malarial infection, an experiment in Plasmodium gallinaceum infected chicken model (Open access)
Viroj Wiwanitkit, Nara Paritpokee, Suwannee Nithiuthai, Chaiyaporn Boonchalermvichian & Narudee Bhokaisawan
J Vector Borne Dis 44, December 2007, pp. 255–258
Although the trend of increase was observed but no significance was observed ($p > 0.05$). The results from this pilot study can be a good basic data for the further study in this area.

Age as a risk factor for thrombocytopenia and anaemia in children treated for acute uncomplicated falciparum malaria (Open access)
Aduragbenro D. Adedapo, Catherine O. Falade, Rachel T. Kotila & George O. Ademowo
J Vector Borne Dis 44, December 2007, pp. 266–271
While thrombocytopenia was the most common haematological finding and may be of diagnostic importance, anaemia and leucocytosis were more common in the under fives.

Short research communication: Dynamics of malaria in Bikaner, Rajasthan, India (1975–2006) (Open access)
D.K. Kochar, P. Sirohi, S.K. Kochar, M.P. Budania & J.P. Lakhotia
J Vector Borne Dis 44, December 2007, pp. 281–284
These data are very valuable in designing the treatment protocols and other preventive measures in the community. Whereas, most of the regions in India are showing dramatic increase in the number of P. falciparum cases, Bikaner is witnessing an increase in P. vivax infections.

Short research communication: Impact of maternal Plasmodium falciparum malaria and haematological parameters on pregnancy and its outcome in southeastern Nigeria (Open access)
C.J. Uneke, I. Sunday-Adeoye, F.E. Iyare, E.I. Ugwuja & D.D. Duhlinska
J Vector Borne Dis 44, December 2007, pp. 285–290
Therefore, these results suggest that maternal malaria may be the major determining factor to LBW in this study and that the haematological parameters may have played only a secondary role in LBW observed.

Adding artesunate to sulphadoxine-pyrimethamine greatly improves the treatment efficacy in children with uncomplicated falciparum malaria on the coast of Benin, West Africa (Open access)
Alain Nahum, Annette Erhart, Dorothee Gazard, Carine Agbowai, Chantal Van Overmeir, Harry Van Loen, Joris Menten, Martin Akogbeto, Marc Coosemans, Achille Massougbodji, Umberto D'Alessandro
Malaria Journal 2007, 6:170 (21 December 2007)
This randomized, open-label, clinical trial comparing sulphadoxine-pyrimethamine alone or combined with artesunate shows that this particular combination has applications in some situations.

Improved isolation of murine hepatocytes for in vitro malaria liver stage studies (Open access)
Ligia A Goncalves, Ana M Vigario, Carlos Penha-Goncalves
Malaria Journal 2007, 6:169 (20 December 2007)
Primary hepatocyte cultures are a valuable tool for the understanding of cellular and molecular phenomena occurring during malaria liver stage. This paper describes an improved procedure for the isolation of hepatocytes which allows a reproducible preparation of primary hepatocytes with consistent cell yields and controlled purity.

Estimated financial and human resources requirements for the treatment of malaria in Malawi (Open access)
Adamson S Muula, Emmanuel Rudatsikira, Seter Siziya, Ronald H Mataya
Malaria Journal 2007, 6:168 (19 December 2007)

An interesting and original application of economic modeling for the purpose of planning public health service delivery. The authors employ internationally-validated estimates for the incidence of malaria illness episodes and estimate the human and financial resources that would be required to meet this need.

Duffy blood group gene polymorphisms among malaria vivax patients in four areas of the Brazilian Amazon region (Open access)
Carlos E Cavasini, Luiz C DE Mattos, Alvaro AR D'Almeida Couto, Vanja SC D'Almeida Couto, Yuri Gollino, Laurence J Moretti, Claudia R Bonini-Domingos, Andrea RB Rossit, Lilian M Castilho, Ricardo LD Machado
Malaria Journal 2007, 6:167 (19 December 2007)
The Brazilian population has a highly heterogeneous ethnic composition, a result of the hybridization of the numerous native indigenous populations and immigrants from Europe, Africa and Asia. In the Amazon region, where P. vivax predominates, the frequency of the FYB-33 allele is higher than expected given the ethnic population.

Haemoglobin and haematocrit: the threefold conversion is also non valid for assessing anaemia in Plasmodium vivax malaria-endemic settings (Open access)
Alfonso J Rodriguez-Morales, Elia Sanchez, Melissa Arria, Miguel Vargas, Carmelina Piccolo, Rosa Colina, Carlos Franco-Paredes
Malaria Journal 2007, 6:166 (17 December 2007)
The study shows that the standard threefold conversion from haematocrit to haemoglobin underestimates the prevalence of anaemia and low levels of haemoglobin in children and adults with vivax malaria.

Complement activation in Ghanaian children with severe Plasmodium falciparum malaria (Open access)
Gideon K Helegbe, Bamenla Q Goka, Joergen AL Kurtzhals, Michael M Addae, Edwin Ollaga, John KA Tetteh, Daniel Dodoo, Michael F Ofori, George Obeng-Adjei, Kenji Hirayama, Gordon A Awandare, Bartholomew D Akanmori
Malaria Journal 2007, 6:165 (17 December 2007)
This study shows that complement activation contributes to anaemia and respiratory distress in acute childhood malaria, possibly through induction of erythrophagocytosis and haemolysis.

Sequence analysis of Plasmodium falciparum cytochrome b in multiple geographic sites (Open access)
Marie-Therese Ekala, Nimol Khim, Eric Legrand, Milijaona Randrianarivelojosia, Ronan Jambou, Thierry Fandeur, Didier Menard, Serge-Brice Assi, Marie-Claire Henry, Christophe Rogier, Christiane Bouchier, Odile Mercereau-Puijalon
Malaria Journal 2007, 6:164 (17 December 2007)
A study of sequence variation of Plasmodium falciparum cytochrome b from various locations on three continents discussing possible relevance to clinical failure.

Abundance, biting behaviour and parous rate of anopheline mosquito species in relation to malaria incidence in gold-mining areas of southern Venezuela (Subscription)
J. Moreno, Y. Rubio-Palis, E. Páez, E. Pérez V. Sánchez
Medical and Veterinary Entomology, Volume 21 Issue 4 Page 339-349, December 2007
The present study constitutes the first effort to characterize the bionomics of anophelines in malaria endemic foci in different ecological situations in relation to malaria transmission in southern Venezuela and to provide relevant information to be considered when planning and implementing vector control programmes.

Population dynamics of pest mosquitoes and potential malaria and West Nile virus vectors in relation to climatic factors and human activities in the Camargue, France (Subscription)
N. Ponçon, C. Toty, G. L'Ambert, G. Le Goff, C. Brengues, F. Schaffner, D. Fontenille

Medical and Veterinary Entomology, Volume 21 Issue 4 Page 350-357, December 2007
The population dynamics of these species varied considerably in relation to the species' biology, climatic conditions (rainfall, temperature and season), water management, implementation of mosquito control campaigns and landscape use.

Evidence for late Pleistocene population expansion of the malarial mosquitoes, Anopheles arabiensis and Anopheles gambiae in Nigeria (Subscription)
S. Matthews, L. Meehan, D. Onyabe, J. Vineis, I. Nock, I. Ndams, J. Conn
Medical and Veterinary Entomology, Volume 21 Issue 4 Page 358-369, December 2007
There was a trend towards decreasing genetic diversity in *An. arabiensis* from the northern savannah to the southern rainforest that corroborated previous data from microsatellites and polytene chromosomes.

An atypical orthologue of 6-pyruvoyltetrahydropterin synthase can provide the missing link in the folate biosynthesis pathway of malaria parasites (Subscription)
S Dittrich, SL Mitchell, AM Blagborough, Q Wang, P Wang, PF Sims, JE Hyde
Molecular Microbiology (OnlineEarly Articles)
Supported by site-directed mutagenesis experiments, we ascribe the novel catalytic activity of the malarial PTPS to a Cys to Glu change at its active site relative to all previously characterized PTPS molecules, including that of the human host.

Osmiophilic bodies and the odd organelles of alveolates (Subscription)
K Hayton, TJ Templeton
Molecular Microbiology, Volume 67 Issue 2 Page 236-240, January 2008
In this issue, de Koning-Ward et al. describe the disruption of pfg377 in the virulent human malaria parasite, Plasmodium falciparum, which results in reduced osmiophilic body formation, a marked decrease in female fitness, and dramatically impaired infectivity to mosquitoes. These findings suggest that targeting PFG377 may be a strategy to block parasite transmission.

The role of osmiophilic bodies and Pfg377 expression in female gametocyte emergence and mosquito infectivity in the human malaria parasite Plasmodium falciparum (Subscription)
TF de Koning-Ward, A Olivieri, L Bertuccini, A Hood, F Silvestrini, K Charvalias, P íaz, G Camarda, TF McElwain, T Papenfuss, J Healer, L Baldassarri, BS Crabb, P Alano, LC Ranford-Cartwright
Molecular Microbiology, Volume 67, Issue 2, Page 278-290,
This reduced efficiency of emergence explains the significant defect in oocyst formation in mosquitoes fed blood meals containing Pfg377-negative gametocytes, resulting in an almost complete blockade of infection.

Kiss and spit: the dual roles of Toxoplasma rhoptries (Subscription)
John C. Boothroyd & Jean-Francois Dubremetz
Nature Reviews Microbiology 6, 79-88 (January 2008)
John C. Boothroyd and Jean-Francois Dubremetz review the roles of the apical rhoptry organelles in cell invasion by Apicomplexan parasites such as *Toxoplasma gondii* and *Plasmodium* spp. They propose a model in which an expansion of host range might have been the selective pressure for rhoptry-protein evolution.

Vesicle trafficking during sporozoite development in Plasmodium berghei: ultrastructural evidence for a novel trafficking mechanism (Subscription)
J. Schrevel, G. Asfaux-Foucher, J. Hopkins, V. Robert, C. Bourgouin, G. Prensier, L. Bannister
Parasitology, Volume 135, Issue 01, January 2008, pp 1 - 12
Filamentous links between vesicles and rootlet indicate that this is a previously undescribed vesicle transport organelle. Genesis of micronemes occurs late in bud maturation and starts as spheroidal dense-cored vesicles (pro-micronemes),

transforming to their mature bottle-like shape as they move apically. Filamentous links also occur between micronemes and subpellicular microtubules, indicating that as in merozoites, micronemes are trafficked actively along these structures.

Insecticidal activity of menthol derivatives against mosquitoes (Subscription)
R Samarasekera, IS Weerasinghe, KP Hemalal
Pest Management Science, Early View
In ester derivatives of L-menthol the optimum activity is dependent on the size and shape of the ester group and the presence of chlorine atoms in the ester group. In structurally related derivatives of L-menthol the optimum activity is dependent on the aromaticity, the degree of unsaturation, the position of the hydroxy group and the type of functional group. Copyright © 2007 Society of Chemical Industry.

Towards a Vaccine against Plasmodium vivax Malaria (Open access)
James G. Beeson and Brendan S. Crabb
PLoS Med 4(12): e350
The authors discuss a new study that suggests that *Plasmodium vivax* Duffy-binding protein could be a candidate antigen for developing a *P. vivax* vaccine.

Plasmodium vivax Invasion of Human Erythrocytes Inhibited by Antibodies Directed against the Duffy Binding Protein (Open access)
Brian T. Grimberg, Rachanee Udomsangpetch, Jia Xainli, Amy McHenry, Tasanee Panichakul, Jetsumon Sattabongkot, Liwang Cui, Moses Bockarie, Chetan Chitnis, John Adams, Peter A. Zimmerman, and Christopher L. King
PLoS Med 4(12): e337
Christopher King and colleagues found that both rabbit and human antibodies inhibited binding of rPvDBPII to the Duffy antigen N-terminal region and to Duffy-positive human erythrocytes, suggesting that a PvDBP-based vaccine may reduce blood stage *Plasmodium vivax* infection.

The twists and turns of Maurer's cleft trafficking in P. falciparum-infected erythrocytes (Subscription)
L Tilley, R Sougrat, T Lithgow, E Hanssen
Traffic OnlineAccepted Articles
Visualization of both resident and cargo proteins has helped decipher the signals and routes for trafficking of parasite proteins to the Maurer's clefts and beyond.

Perceptions and home management practices of malaria in some rural communities in Abeokuta, Nigeria (Subscription)
O.A. Idowu, C.F. Mafiana, I.J. Luwoye and O. Adehanloye
Travel Medicine and Infectious Disease, In Press, Corrected Proof, Available online 11 December 2007
Health education and improved health care services are recommended for these farmers in order for them to be able to translate extension services provided into maximum agricultural yields.

▪▪▪ Events ▪▪▪

Call for abstracts: 2nd East African Health and Scientific Conference 2008
Dates: March 26-28, 2008
Venue: Arusha, Tanzania
Deadline for submitting abstracts: 31 December, 2007
This is a last reminder that contributions are still invited for oral and poster presentations during the 2nd East African Health and Scientific Conference to be held in Arusha, Tanzania, March 26-28, 2008. Abstracts should be submitted on line to:
eachealthconference@nimr.or.tz
More information

▪▪▪ News ▪▪▪

23 December 2007, BBC
Sea cucumber 'new malaria weapon'
Sea cucumbers could provide a potential new weapon to block transmission of the malaria parasite, a study suggests.

20 December 2007, EurekAlert
McGill researchers report breakthrough in rapid malaria detection
A research team led by Dr. Paul Wiseman of the Departments of Physics and Chemistry at McGill University has developed a radically new technique that uses lasers and non-linear optical effects to detect malaria infection in human blood, according to a study published in the Biophysical Journal.

20 December 2007, Science Daily
Vaccine Against Malaria Will Reduce Disease, Study Suggests
Today, researchers at the Case Western Reserve University School of Medicine's Center for Global Health & Diseases published data potentially having a strong effect on the three billion people exposed to malaria every year. These novel findings show new antibodies inhibit infection by the Plasmodium vivax (P. vivax) malaria parasite.

20 December 2007, Newstrack India
Chloroquine is no more effective against Malaria
The most common and cheap anti-malarial drug available in India, Chloroquine, is no more effective in most of the districts in Orissa.

20 December 2007, Innovations report
China’s anti-malaria medicine producers face market collapse
Just three years ago, a global shortage of the anti-malaria medicine artemisinin alarmed medics fighting the killer disease, and spurred scientists who are developing alternative sources of the drug.

19 December 2007, radiojamaica.com
Malaria and dengue fever contained
The Health Ministry is reporting 373 confirmed cases of malaria since the outbreak began in November last year.

19 December 2007, Voice of America
Stem Cell Research Dominates 2007 Medical Field
At the end of 2007, researchers report significant progress in the development of a malaria vaccine. Ninety percent of the one-million children who get malaria worldwide each year live in sub-Saharan Africa.

19 December 2007, San Francisco Chronicle
Malaria's return / Researchers strive for a vaccine
But we've been here before. Initial success led decisionmakers to forget about malaria's danger and global reach. That can't be allowed to happen again.

19 December 2007, ABN Newswire
Eastland Medical (ASX:EMS) Aims To Significantly Increase Revenues ...
The decision to focus on the pharmaceutical development division of the company was made following the positive results of its single dose human clinical trials for its anti-malaria treatment ArTiMist, and is in line with comments made by Eastland Chairman Peter Jooste at the 2007 Annual General Meeting.

19 December 2007, the New Times

Rwanda: Malaria Epidemic Hit Players
The Cecafa medical commission has confirmed that malaria epidemic has been a major threat to various team camps at the on-going Senior Challenge Cup in Dar es Salaam, Tanzania.

19 December 2007, The Daily Observer
Gambia: 4,200 Bednets for NBR, CRR, LRR
The Gambia United Society in UK (GAUSUK), last Wednesday, handed over four thousand and two hundred (4,200) long lasting insecticide bednets to the Association of Youths Against Malaria (TAYAM).

19 December 2007, allAfrica.com
Mali: A Navy Admiral Fights Malaria [guest blog]
In the latest entry in his blog about a massive health drive, Steven Phillips tells of us about the unlikely presence of a navy admiral in landlocked Mali.

18 December 2007, AfricaNews
Gambia: Malaria No More! Bed nets distributed
A team of 3 young men from Curaçao and their coach participated in the challenging Amsterdam-Dakar rally.

18 December 2007, Goal.com
Real Madrid Casillas And Nadal Have Match Against Malaria
Iker Casillas and Rafa Nadal have organised a Match Against Malaria in Madrid on Thursday to raise money to buy vaccines for children.

18 December 2007, Medical News Today
Government Of Mali And Global Partners Launch Integrated Health ...
The Malian Ministry of Health, in collaboration with international partners, launched a national, integrated health campaign to vaccinate more than 2.8 million children against measles. The campaign will also distribute over two million insecticide-treated mosquito nets to prevent the spread of malaria-together these diseases take the lives of more than one million African children each year.

18 December 2007, Accra Mail
Ghana: Eradicate Malaria With Growth, Not Nets [opinion]
This month, the World Health Organization (WHO) will give four brands of Long-Lasting Insecticide-Treated mosquito net its seal of approval, increasing the total to seven. This is good news.

18 December 2007, allAfrica.com
Mali: U.S. Sports Stars Suit Up Against Malaria [guest blog]
Steven Phillips tells of the impact that American sports stars have on the campaign to make take life-saving health interventions to the children of Mali.

18 December 2007, New Vision
Uganda: A Decent Standard of Living Will Help Eradicate Malaria [opinion]
THE month, the World Health Organisation (WHO) will give four brands of the long-lasting insecticide-treated mosquito net its seal of approval, increasing the total to seven.

17 December 2007, Scienceline
If malaria can be transmitted through a mosquito's bite, why not HIV?
Slap! Another mosquito! I try to resist the urge to scratch, but it would be easier to refuse a glass of water on a 110-degree day. I scratch, and oh, glorious relief! The feeling is just momentary, though, because here comes that hot sensation, and now my skin is swelling into a hideous red bump. Who knows what disease that thing could be carrying? At least I can be sure it isn’t HIV.

17 December 2007, Ghana Broadcasting Corporation
Treated bed nets reduce incidence of malaria
The use of Insecticide Treated Bed nets is contributing significantly to the decline of malaria cases among pregnant women and children in the country.

17 December 2007, Accra Mail
Ghana: U.S. Joins Country's Anti-Malaria Crusade
The United States (U.S.) Ambassador to Ghana, Madam Pamela E. Bridgewater has launched a National Malaria Control Programme called the President's Malaria Initiative (PMI) at Agona Abodum in the Central Region.

17 December 2007, Public Agenda
Ghana: Controling Malaria Should Be a National Commitment [editorial]
Last week at a durbar at Agona Abodom in the Central Region, the President's Malaria Initiative (PMI) of George Bush was launched as part of global efforts to combat the killer disease.

17 December 2007, Public Agenda
Ghana: U.S. President's Malaria Initiative Begins
A year ago, United States President George W. Bush announced Ghana as a new focus country for the President's Malaria Initiative, (PMI).

15 December 2007, BBC
New target for anti-malaria drugs
Targeting a key protein may help overcome the malaria parasite's increasing resistance to conventional drugs, UK researchers say.

15 December 2007, Vero Beach Press-Journal
Seniors dance to 'Stayin' Alive' while fighting malaria in Sebastian
Seniors in the International Baccalaureate program at Sebastian River High School are committed to wiping out malaria, one mosquito net at a time.

14 December 2007, Live Science
The Modern Fight Against an Ancient Killing Machine
They come at night, just when the family is settling down for dinner or sleep. The only warning is an irritating whine, but sometimes there's no sound at all, just a pinch and later an itch. And much later the fevers, shivering, and perhaps death.

14 December 2007, Accra Mail
Ghana: Mal 47 Malaria Vaccine Trial - So Far So Good
Fifteen months after the first trial of the phase 2 (Mal 47) of the RTS'S malaria vaccine was administered to children in the Kintampo North and South Districts, ADM can confirm that most of these children are looking healthy and strong.

14 December 2007, Public Agenda
Ghana: Country Gets $51 Million for Malaria Control
In Ghana, malaria accounts for more than 44 percent of visits to health facilities. UNICEF estimates that 20 thousand Ghanaian children under the age of five die each year of malaria.

14 December 2007, Daily Trust
Nigeria: Eradicating Malaria [editorial]
At a "Health Summit" organised by the 19 Governors of Northern States in Kaduna recently it was emphasised that strategies should be developed to reduce the scourge of malaria.

14 December 2007, ReliefWeb
HIV/AIDS, tuberculosis and malaria: Nigeria to benefit from $1.7 billion grant

A total of $1.7billion USD has been approved as grants for west and central African states with almost half of the funds dedicated to the procurement of medicines and health commodities for AIDS, tuberculosis and malaria.

14 December 2007, GlobalHealthReporting.org
Climate Change Could Overwhelm Health Systems, Hamper Ability To Fight Malaria, Other Diseases, WHO Official Says
Inaction on climate change could overwhelm health systems worldwide and impede their ability to fight diseases like malaria, Maria Neira, director of public health and environment at the World Health Organization, said Thursday at the United Nations Climate Change Conference in Bali, Indonesia.

14 December 2007, The Rising Nepal
Malaria cases on rise in Morang
District Public Health Office in Morang informed that cases of malaria have been increased in the North-east part of the district for some time.

14 December 2007, Ghana Broadcasting Corporation
US Government to Combat Malaria in Selected Africa Countries
The US Government is to provide $1.2billion in the fight against malaria within the next five years in 15 African countries including Ghana.

14 December 2007, Yemen News Agency
Gulf countries support Yemen with $ 48 million for combating malaria
A source in the Ministry of Public Health and Population confirmed that the ministry has received a message from the executive bureau of Gulf Cooperation Council (GCC) agreeing on Yemen's plan on combating malaria and support estimated at $ 48 million.

13 December 2007, Scientific American
Malaria Parasites May Be Allies Against Drug Resistance
At least a million people die of malaria every year. And one problem with treating the disease may be…treating the disease. The current dosages of drugs used to fight malaria may sometimes