What does ‘Tropical Medicine’ stand for today?
What does ‘Tropical Medicine’ stand for today?

_Inaugural lecture_

delivered upon accession to the office of Hoogleraar Tropische Geneeskunde at the University of Amsterdam on 26 January 2011

by

Martin Peter Grobusch
Ik ben erg verheugd dat vandaag tussen vrienden en collega’s van het AMC, en tussen vele anderen uit Nederland, ook dierbare gasten uit het buitenland aanwezig zijn. Dat geeft me een mooi excuus met mijn nu nog povere Nederlands geen taalkundige hoogstandjes te hoeven uitvoeren, en vanaf hier wat meer comfortabel verder te gaan in de Engelse taal.

What are the origins of ‘Tropical Medicine’?

Infectious diseases afflicting humans such as the poliomyelitis depicted here, tuberculosis, or leprosy, amongst many others, have been unwanted companions of mankind since the very early days. Some of them were commonplace in the past in areas of the world where they are nowadays considered ‘exotic’; some are even on the brink of becoming afflictions of the past, while others are emerging, or re-emerging; some have only recently been recognized as novel pathogens.

‘The Tropics’ in both geographical and astronomical terms in the strict sense of the Greek ‘tropai heliou’ simply refers to the area between the northern Tropic of Cancer and the southern Tropic of Capricorn at about 23.5 degrees of latitude from the equator, marking the sun’s most northerly and southerly points during its annual journey. However, the attribute ‘tropical’ is often used as a proxy for describing mainly transmissible ailments of people who live often under poor conditions in the far less affluent global regions characterized as ‘the South’ (from a Western or Northern perspective).

The origins of ‘Tropical Medicine’ as a medical discipline, or subdiscipline, lie in the murky past and hence remain ill-defined to a considerable degree, but certainly date back at least to the age of exploration; a time when Joan Blaeu’s map of the Netherlands drawn during the Golden Age looked like this (with us being located somewhere here); and when seafarers brought back still
somewhat blurred, but in other aspects astonishingly accurate pictures of the world as it was, and as we know it today. However, early travellers certainly encountered and also brought back with them souvenirs such as, in this case, cholera calling at US American ports, or the plague, a once all-too-well-known foe which savagely ripped through more than just Europe’s population in the Middle Ages.

Throughout the 19th century ‘Tropical Medicine’ dealt with what was in fact the occupational health of explorers and colonialists (in the aftermath of the particular encounter shown here, it is understood that some surgical rather than medical skills were needed in order to get David Livingstone back onto his feet).

Soon the added value of dealing with infectious diseases threatening the thriving overseas businesses became evident (this cartoon comments on Sir Ronald Ross’s funding campaigns to fight malaria in the British colonies), and investments in the field of tropical medicine and hygiene made by the colonial powers peaked around the turn of the 20th century.

Already several decades earlier, an ever increasing number of seafaring men were arriving back home in Europe with often unknown, if not mysterious conditions – and were kept out of town on unrigged veteran sailing ships such as the one here on the River Thames off Greenwich – which quickly needed to be replaced by bigger vessels, which in turn also became too small, and too remotely moored, to cater for the treatment of the afflicted sailor. Treatment became a priority over simple quarantine given the growing body of knowledge in the field. As a consequence, Institutes of Tropical Medicine and Hygiene as well as Hospitals for Tropical Diseases mushroomed around the seaports of Europe’s colonial powers and seafaring nations such as this one in London. In some places – as in the case of Hamburg’s Bernhard Nocht Institute – they were built in response to imported conditions that caused epidemics, in Hamburg’s case cholera, establishing themselves firmly on land in the often dilapidated and ‘unhygienic’ quarters of the poor.

But as mentioned before, what are considered ‘tropical conditions’ today were often firmly rooted in Europe itself. As the last remaining malaria-endemic country in Western and fairly Northern Europe and long after malaria had been pushed back already from Denmark, Germany, France and England, The Netherlands was only officially declared free from harbouring malaria with transmission occurring locally as late as the early 1970s, after having endured numerous epidemics of Plasmodium vivax malaria in the swampy marshes of Friesland, Zeeland, and North Holland in particular. At this stage, I’d like to quickly side-step for a second and thank José Wetstein, one of our distinguished Tropencentrum veterans, for having filled me in so knowledgeably about the malarious past of my new home country.
Particularly in the last decades of the 19th and in the first half of the 20th century, the subspecialty of Tropical Medicine blossomed fully – in Rotterdam and here in Amsterdam at the Colonial Institute, now the Royal Tropical Institute, and in conjunction with the University of Amsterdam – and I am looking back in pride on a pedigree of distinguished leaders in the science and art of tropical medicine and related disciplines including Schueffner and Swellen-grebel, as depicted amongst equally honourable colleagues here in the painting by Lizzy Ansingh, with the latest addition to this hall of fame certainly being my esteemed predecessor Piet Kager, for whom I took the liberty of borrowing the frame from the previous picture, until further notice.

But what did the discipline of Tropical Medicine encompass once it took shape? The classic domains of Tropical Medicine were hygiene (a discipline which formed the basis of today’s Public Health), parasitology and entomology, linking strange afflictions (such as Romaña’s sign, or the Chagoma, as depicted here in one of the classic atlases of Tropical Medicine) to exotic infectious agents (in this case Trypanosoma cruzi) to even more exotic, often obscure disease-transmitting creatures like this ‘kissing bug’ (Rhodnius prolixus) in this example of Chagas’ Disease, at home in parts of South America3; which interestingly has only recently become more frequently recognized in European countries other than Spain as an imported condition of note.

What does ‘Tropical Medicine’ encompass today?

Tropical Medicine is a highly dynamic field, and an impressive example is the spread of West Nile Fever throughout mainland USA within a decade despite its early recognition and concerted control efforts exerted4. The wealth of infectious diseases emerging or re-emerging over the past one and a half decades alone, such as SARS or Chikungunya Fever, would allow for several hours of inaugural lecturing on its own. I shall spare you that.

Tropical Medicine is geographical medicine

Let us assume, for example, that a young woman originating from somewhere in Southeast Asia presents to a physician here in Europe. Her complaint is a waxing-and-waning very painful swelling of her left hand, and the young university hospital clinician born and bred in Europe does what he is supposed to do after some reasoning – he may have a scan of her hand and wrist performed, showing that there is an inflammation of the deep soft tissues in the
area; the subsequent biopsy shows massive destruction of those tissues with bleeding and oedema and a pronounced eosinophilia with a matching pattern in her peripheral blood. And in the end the attending physician finds this all so exciting and off-the-beaten-track that he turns the whole story into a case report.

But if the same lady had presented herself somewhere in the region where she originated from, and where she had contracted her condition before moving to Europe, it would have been clear without much further ado that her complaints originated from a migrating worm larva which she had contracted from undercooked local foodstuffs such as a bullfrog or this catfish.

So, in essence, what we are considering as an exotic case of gnathostomiasis in Europe is commonplace in parts of South America and particularly so in Southeast and East Asia, where the disease is well known as ‘shanghai rheumatism’ or ‘yangtsekiang edema’, amongst other synonyms.

However, right from its beginning, Tropical Medicine cut across, and encompassed, many more medical disciplines and scientific areas, as well as ecological, geographical, societal and political issues.

Tropical Medicine is not only about ‘infectious diseases in the tropics’, it is about medicine in the tropics and in the less affluent world in general and encompasses all disciplines as represented here, for example, by cataract surgery in rural India; with chronic conditions such as cardiovascular and metabolic disorders playing an ever-increasing role; it is intertwined and influenced by ecological change, human migration, population and overpopulation, all kinds of interaction with the planet’s flora and fauna, and sadly, human tragedy and man-made disasters – and that holds true today more than ever as we move from looking at things more from a global health perspective rather than in separate disciplines.

So in summary, I understand Tropical Medicine as an entity encompassing medicine in the tropics, or medicine in the less affluent world, with a personal focus on infectious diseases.
Where and how does the Tropencentrum within the AMC fit into the picture?

The Tropencentrum is firmly rooted within Infectious Diseases, Tropical Medicine and AIDS in Internal Medicine at the AMC, with numerous collaborations and links in the AMC and its academic environment, in Amsterdam and the whole of the Netherlands, and with numerous partners globally.

Here you can see our group, currently more than two dozen strong and growing, whilst discussing recent developments in the field during one of our daily lunch breaks.

What are our core tasks and other activities?

Teaching undergraduates and postgraduates is an important task, a pleasure and a privilege, but practising travel and infectious diseases medicine is our core business at our home base in the AMC. We cater for more than 13,000 clients per year including a growing number of immune-compromised and chronically ill patients preparing for travel, by offering advice, immunizations and other prophylactics – although there may still be a few unexpected situations to be encountered out there, and we may not be able to assist with preparing for them.

Not only in our center, but in the whole country and beyond, the increasing number of travellers with pre-existing conditions is becoming a focus of interest. Afflictions such as diabetes or HIV may contribute to making the traveller prone to certain conditions in general, or more than the average healthy traveller, which may be encountered during the journey. Most of them are directly or indirectly immune-compromising, as this overview on pre-travel conditions encountered during just a few months in early 2010 at our travel medicine practice shows (compiled by our incoming PhD student Rosanne Wieten). Rosanne will significantly contribute over the coming years to the work we have just begun to conduct on this topic of broader interest.

We care for about 1,500 travellers per year who return with a medical problem from their travels. Those few who need admission will be looked after on one of the internal medical wards, to whose service we contribute jointly as part of the Division of Internal Medicine. Most patients, however, can be adequately cared for on an outpatient basis. A harmless worm infection acquired on Brazil’s sandy beaches, a not-necessarily-so-harmless stingray injury acquired off the beach in the Dominican Republic, an African tick bite fever as a camping souvenir from South Africa, and dengue fever from Thailand may
serve as examples of what we may encounter during a busy day. Sometimes the villain is caught in action, such as this tick transmitting Lyme disease, or borreliosis, from a destination as exotic as the dark forests of Austria. Some diagnoses may be rarities, such as this relapsing fever diagnosed when looking for malaria parasites in a backpacker returning from Central America. We must also acknowledge that in a certain proportion of patients, the final diagnosis remains obscure, which is an important area for future research in more depth; yet those conditions are usually unspecific in nature, short-lived and self-limiting, certainly less dramatic than the unfortunate incident depicted here.

An important area of activities is to train Dutch military medical staff in the tropical medicine discipline both clinically in practice and theoretically during courses, and to advise on tropical medicine issues and be ‘on standby’ for the military Medical Services. Pieter van Thiel together with his staff is an integral part of both the military and our Tropencentrum, caring for troops in relation to mission or training. Cutaneous leishmaniasis from jungle training in Belize or from a mission in Afghanistan is an important example of patient care to that end.7,8

But we reach far out, and whilst patient care is certainly our most important and immediate duty, research as a tool of eminent importance in the quest for promoting global health is also very close to our hearts. Research activities focus on evaluating new diagnostics, investigating novel interventions, bringing those novel tools to the field and integrating them into control measures, as well as community teaching and training in all kinds of health matters.

For example, here Michèle van Vugt is seen during one of the field trips to Africa she has been undertaking in the context of both self-initiated malaria and HIV research projects and training sessions, and ongoing joint ventures with the NGO Pharmaccess and the Health Insurance Fund.

Researching and implementing malaria control efforts feature prominently on our priority list, and Peter de Vries with his group does a lot of important work to that end. Here he can be identified, if we are lucky – here he is – during a field trip to Rwanda where he is currently initiating a large, grant-funded, community-based malaria control study together with local scientists, Michèle van Vugt and collaborators from all over the Netherlands.9

Having now touched briefly at least upon the activities of my current senior medical staff members individually, it is my pleasure to introduce Bram Goor-
huis. We are proud of having won him as our new senior medical staff member. He will be joining us soon, and will be instrumental in allowing us to tap much more thoroughly into our huge database of pre- and post-travel care encounters than staff constraints have allowed for over the past couple of years.

At the AMC, our natural partners are institutes, departments and working groups which relate closely or in some broader context to Tropical Medicine. We are, for example, gathering our biomedical research work under the umbrella of the Center of Infection and Immunity Amsterdam (CINIMA) led by Tom van der Poll. And we are contributing to the work of the Amsterdam Institute for Global Health and Development (AIGHD) founded and led by Joep Lange.

We naturally share a great deal of overlapping areas of interests with our partners at KIT, the Royal Tropical Institute. We also contribute to the work of funding bodies in various constituencies such as scientific boards, for example the European and Developing Countries Clinical Trials Platform (EDCTP) based in The Hague, and we play our role in both of the two Sentinel Surveillance Networks which are primarily designed for monitoring infectious diseases imported into Europe, called EuroTravNet and, as depicted here, TropNetEurop, respectively.

But let me also take you briefly to those workplaces overseas which are personally very close to my heart, and with which I continue to retain strong links, and let me start with Lambaréné in Gabon.

On the outskirts of this town in the Central African rainforest lies the hospital founded by Albert Schweitzer in the early 20th century, and it is named in his honour. Medical research with a focus on all aspects of malariology but today covering virtually all of the infectious diseases relevant to the area took off there when Professor Peter Kremsner took the lead in 1992, and the physical growth in the number of Medical Research Unit members over the past few years alone may explain the exponential increase in activities and output in terms of research results and, equally important, trained scientists from Africa and abroad, thus highlighting its role amongst the leading research institutions on the continent. And so does the fact that in this very place on this very occasion, we find to my utmost pleasure two other esteemed present and past Lambaréné work group leaders, namely Maria Yaksdanbakhsh from the University of Leiden and Adrian Luty, in the auditorium, along with Peter Kremsner himself.
But what are we looking at in the Medical Research Unit with the various research groups active there?

Severity of malaria, here represented by the transmitting female anopheline mosquito, an electron micrograph of an infected red blood cell, and a thick film, a ‘dikke druppel’ that we still use to diagnose malaria like in the old days, may serve as an example for many fields of importance, and the identification of predictive factors that will allow us to identify which one out of a group of febrile children presenting to the Medical Research Unit for diagnosis and treatment is at risk of progressing to severe disease, such as this boy who fell into coma shortly after having been diagnosed with malaria. We can look at socioeconomic factors associated with the risk for malaria and severity of malaria such as distance from a health facility; we can look at parameters such as child growth and body weight in relation to age; we can look at gene expression profiles and try to make sense of them as a modern approach to finding the needle in the haystack; or we can apply modern adjuvant diagnostic tools such as flow cytometric detection of malaria pigment, or hemozoin\textsuperscript{15,16}, in white blood cells as a predictor of progression towards severe malaria. What counts in the end is that we contribute to the reduction of the overall burden, and the severity of this still eminent ‘tropical’ condition, so that fewer children come down with it, and more of those who do survive to stagger home holding their granny’s hand, as our boy depicted here was able to in the end.

However, our most important task in malariology is to work towards improved control with the long-term goal of elimination and maybe even subsequent eradication, and prioritising the development and optimization of low-cost tools to help prevent rather than treat malaria\textsuperscript{17,18}. The best example is Intermittent Preventive Treatment of malaria in infants, or IPTi, as an instrument. We showed it to be an effective and inexpensive additional tool which was recently adopted by WHO to prevent malaria in areas of high and stable malaria transmission with an acceptable resistance level against the drug used.

The Tropical Diseases community has established over the years and recently with increasing speed what other important diagnoses may be lurking behind the clinical picture of a febrile child in the tropics as the archetype of a clinical problem in ‘The Tropics’, including bacterial diseases, often beginning as airways or urinary tract infections before progressing to life-threatening sepsis. They have been neglected for a long time, and are even today not accepted by all as what they are – eminent killers not only in the first world and if not tropical diseases, then diseases occurring in the tropics as well\textsuperscript{19}. One example of such a dangerous causative agent is the bacterium \textit{Staphylococcus aureus}. This is one problematic cause of often severe disease which we are looking at.
in a network of African sites, in partnership with some German institutes. As a model for several projects with various partners and topics linking our in-house expertise in clinical and laboratory-based approaches together, we are now setting off to study certain aspects of sepsis under tropical conditions together with Tom van der Poll’s group.

The ‘tropical world’ is changing as rapidly as one could only imagine. I would like to finally mention what will be linking my two main working places in Africa much closer together in the near future, which is tuberculosis research in terms of understanding its epidemiology, and in tackling burning issues of diagnosis and treatment of both drug-sensitive and drug-resistant tuberculosis. These are first pictures of the TB laboratory we are currently finishing building in Lambaréné. There we are soon to embark on the first large trial which will link Lambaréné to the ‘classical’ AMC partner sites in Kampala/Uganda and Beira/Mozambique, where the recently funded PROMPT trial masterminded by Frank Cobelens will explore strategies to improve our co-management of tuberculosis and HIV, which cannot be seen any longer as separate entities in highly co-endemic regions.

Which brings me finally back to my previous workplace in Johannesburg, South Africa, where tuberculosis is on the loose in the face of the coinciding pandemics of tuberculosis and HIV\textsuperscript{20}, culminating in co-infection rates of over 95% fortunately unparalleled elsewhere\textsuperscript{21}. The numbers of patients with drug-resistant TB reached dimensions which during my time there led us to convert the Hospital for Tropical Diseases into a 268-bed facility exclusively for those patients.

In the wake of a publication by South African colleagues which brought the burning problem of extensively drug-resistant TB overnight to the full attention of the world in 2006, it was a common perception for years that death rates in extensively drug-resistant tuberculosis patients almost invariably amounted to close to 100\%\textsuperscript{22}. However, when pooling data from several centers across South Africa a couple of years later, we were able to show that concerted efforts to treat to the highest possible standards lowered the rate to a still unacceptable 50\%\textsuperscript{23}. Moreover, in Johannesburg’s Sizwe Hospital, by optimizing the use of the few treatment tools we had at hand, we were able to lower our death rate of XDR-TB patients from intolerable heights to around 25\%, which is of course still 25\% too high.

In any case, one of the main tasks in tuberculosis research is, apart from improving on diagnostics, to identify and develop novel drugs, as we are short of treatment options which allow for swifter therapeutic success than the usual six months in drug-sensitive and the indeterminate period for multidrug and
higher degrees of resistant tuberculosis. To that end, we were happy to contribute with our recently founded clinical research facility at Sizwe Hospital to the report on initial success with a novel drug which in preliminary phase-two study results exhibited an extraordinary antimycobacterial activity, in terms that its addition to a standard 5-drug regimen for multidrug-resistant tuberculosis resulted in much faster and higher culture conversion rates (not to say: cure) than the standard regime\textsuperscript{24}.

But also here in South Africa, I would like to close the circle by coming back to where classical tropical medicine – parasitology – meets the most pressing infectious disease problems of today’s world in the form of cystic echinococcosis: a worm disease of herded animals and humans living in proximity together under poor hygienic conditions. As partners in another multinational research consortium, we are investigating the still ill-defined epidemiology of echinococcosis and interactions with HIV/AIDS in South Africa, where it seems in an alarming fashion to allow for severe clinical manifestations which remain asymptomatic for longer, and which are apparently more difficult to treat than in non-HIV-positive individuals, even more so if further complicated by viral inflammations of the liver, or hepatitides.

Looking at those various examples of our activities in the Tropencentrum, and having indicated some of our further anticipated expansions into the boundless field of tropical medicine, and coming to the end of my talk, what would be my overarching vision?

“Those who have visions must urgently see a doctor,” the former German head of government Helmut Schmidt once said during an interview, and although I should be safe today, I would like to condense my vision for the years to come as Chair of Tropical Medicine within ITA, the AMC and the University of Amsterdam down to the following:

“Tackling infectious diseases at our doorsteps and globally, with a growing team in-house and multiple partners within and outside the AMC, the Netherlands and around the world.”

Dear audience, for some reason I was strangely attracted to this recent journal title page, and by studying its lead article I realized that I have reached a most appropriate point in life, as I have now in this very lecture, the time to offer a word of thanks.
A word of thanks

I would like to start with thanking the College van Bestuur of the Universiteit van Amsterdam for my nomination, and the Raad van de Bestuur of the AMC for the trust put in me, as well as those colleagues who proposed my nomination. I am looking forward to many fruitful working years to come.

I would like to thank those colleagues who have supported me through the years, and far more than their professional role would have required them necessarily to do, on my way into and through internal medicine, infectious diseases and tropical medicine in particular – and I would like to single out first of all Hanns Martin Seitz, Professor Emeritus at the University of Bonn, who as an outstanding clinician and parasitologist – and a character of note – dragged me fully into the field which had attracted me into medical studies in the first place.

Bernhard Ruf needs to be mentioned, now Professor of Infectious Diseases in Leipzig, who tirelessly fought (and continues to do so) for the strengthening and recognition of the clinical subspecialty of infectious diseases which remains sadly under-recognized in Germany; and who was my ‘opleider interne geneeskunde-infectiologie’ at the Rudolf Virchow University Hospital, later part of the Charité, in Berlin.

Next to be mentioned is my dear friend Peter Kremsner, Professor and Head of the Institute of Tropical Medicine in Tübingen and Spiritus Rector behind the Lambaréné success story. Peter, in a very humble and breathtakingly efficient way, you make a lot of things happen for many people. Which leads me directly to my dear Professors Pedro Alonso and Marcel Tanner from Barcelona and Basle, respectively, whom we heard yesterday, and I would like to thank you both for your seemingly boundless capacity of not only having visions but for also seeing them through as if it was nothing. It is nice to enjoy your company when things are going well, but it is even far better having you guys around when the going gets tough – you show me how to do it!

Emilias Valadas and Thomas Hänscheid need to be mentioned, with whom I share fond memories of a great time in London. Thomas, I thank you for being such a good friend and fellow researcher.

Mathias Hermann from the University of the Saarland for being a brother in mind in many respects and congenial consortium leader in the fledgling field of bacteriological research in Africa and one of those great characters who easily bridge the gap in thinking, if there is any, between ID clinicians and clinical microbiologists.

In Johannesburg, many of the things we achieved there as a team in building infectious diseases capacity and addressing the most burning problems would
not have been possible without the steady support and friendship of the then Head of the Department of Medicine at Wits, Professor Yosuf Veriava.

I would like to thank my senior colleagues and all staff within Infectious Diseases, Tropical Medicine and AIDS at the AMC, for the ease which with I as a still not fluent speaker of Dutch was accepted into our local medical community; for the warm welcome and ongoing great support in my starting phase. Our former Dean Louise Gunning, our current Dean Marcel Levi, Hans Romijn, Joost Hoekstra, Jan Prins, Peter Reiss, Susanne Geerlings, to name just a few, but in particular Peter Speelman and in the first place Tom van der Poll need to be mentioned here for their great support. Peter and Tom, you are not only able team leaders but also very pleasant fellow travellers! Tom, after our first encounter, I knew it would be an excellent choice to join your team. The always open line of communication is an enormous asset and is maybe the most important key for success as a team in a complex yet rewarding work environment.

I am looking back onto so far eight exciting months here at the AMC and the University of Amsterdam – and without being able to single out all individuals, I would like to thank the whole of my marvellous Tropencentrum equipe which I was granted the privilege to lead. Marianne and Jacobien, with your teams you make it very easy for me to settle in and feel quickly welcome and at home.

Thank you, Michèle, Peter and Pieter, for filling me in on the locality-specific ins and outs, and for at least trying to share with me the manifold mysteries of how to turn real-life stories into what is called DBCs, by means of computation.

I would like to thank my dear secretary Tine Sibbing and also Marjon Tuijp, who so discretely and efficiently cover for my many deficits as a newcomer in where to find what and how to organise this or that – it is a pleasure working with you.

Altogether, you are creating a highly professional but very warm and caring atmosphere to work in, amongst us and for our patients and clients. Thank you for all your hard work!

The earlier-mentioned collaboration between AMC with the military Medical Services regarding tropical or global health serves as a model for other countries, for instance for that of my home country, and it has been highly appreciated throughout by all AMC collaborators and will be by me. I am particularly fond of the ease with which Pieter van Thiel and his team seamlessly blend into the Tropencentrum team, without having to resort to any sort of camouflage. Regarding this cooperation, I would like to mention in particular brigade-generaal-arts Rob van der Meer, commandeur-arts Elmer van den Berghaage and commandeur-arts Adriaan Hopperus Buma.
Piet Kager deserves a very special thanks for always being amenable for good advice and a friendly chat. I greatly appreciate that you, and I also would like to extend that to José Wetstein, still enjoy coming along occasionally, to join in our meetings and continue being part of the extended family. Please carry on that way!

Joep Lange, for being another sterling example of a man with a vision and for having an equally enormous capacity to put them into action – I greatly enjoy our professional endeavours, and the good laughs we have already had together. Thank you for your friendship, Joep.

I would further like to specially single out Menno de Jong for the shared interests and collegiality, and I am looking forward to having more time than we could afford up to now to tackle things together in future.

Tom van Gool, with whom I share many professional interests in this wormy world, for by any standards an astonishing amount of collaborative work that we have already embarked on, and the numerous thoughtful talks on parasitological and other issues important in life we have already had, with certainly more to come.

Henry de Vries as another dedicated natural partner whom we heard speaking here only very recently.

Tobias Rinke de Wit deserves special mention, with whom I am very much looking forward to working together.

Our colleagues from the KIT, and in particular Paul Klatser, Henk Schallig and Petra Mens – I think that we will have many opportunities to share ideas and work together on some of the pressing issues where our interests overlap.

I would also like to mention Frank Cobelens in particular – we are connected to each other by a memorable year at the London School of Hygiene and Tropical Medicine back in the mid-1990s – it is just great having the opportunity now to work so closely together after all those years, and it appears to me that we have already started to make the best out of it.

Roel Coutinho for pleasant conversation and a warm welcome, and all the other colleagues there, many of whom I have already met but even more I haven’t met so far, which is high on my to-do list for the coming months, for the warm welcome to the country and into the broader infectious diseases community.

And all the others I may have not managed to mention – you may not have been named today, but you are definitely not forgotten.

Last but of course not least – my dear family. My parents Anne and Peter, to whom I naturally owe many things in life; my ‘schoonouders’ Heilwig and Uwe Klipstein who tirelessly help us making our sometimes challenging family logistics manageable, with in rough times one professional heading for Africa with the other one coming back from there with the whole family in between.

WHAT DOES ‘TROPICAL MEDICINE’ STAND FOR TODAY?
My brother-in-law Bjorn who is a dearly loved uncle and his partner Moni, for being great fellow discoverers of Southern Africa’s countless beauties – let’s do it again!

My best friend, wife and love of my life, Kerstin, the other busy professor in the family, to whom I owe almost everything else of importance in my life, and who makes it somehow possible for me to function on that level.

Last but not least, our lovely and beloved children Lena and Jan, who remind me dearly and daily that there is something in life which is clearly even more important for me than wrestling with the bugs.

Ik heb gezegd.
Notes

11. http://www.aighd.org

WHAT DOES ‘TROPICAL MEDICINE’ STAND FOR TODAY?


