

Remembering Africanization: annotated transcript of staff reunion, Cambridge, Darwin College, 6 August 2013

Edited by P. Wenzel Geissler

Led by P. Wenzel Geissler, Rene Gerrets, Ann H. Kelly and Branwyn Poleykett¹

(with thanks to Gisela Tuchtenhagen for filming, Andy Michaelis for sound recording and photography, and Francesca Raphaely for editorial assistance)²



FIGURE 1 The 2013 reunion of old Amani scientists and technicians.
Photographs: Andy Michaelis.

Participants

Ms Vyvienne Attenburrow, born 1946: British laboratory technician who was in Amani from January 1972 to 1974. Although employed by the UK ODA, she

¹Geissler, Gerrets and Kelly were (together with Peter Mangesho of NIMR, Tanzania) the lead researchers studying Amani as one site of the ESRC-ORA Project ‘Memorials and Remains of Medical Science in Africa’ (MEREAF) from 2012–18; Poleykett joined the research team for one productive field season in Amani, and for the reunion.

²During the several years that elapsed after this first reunion and the second reunion and subsequent publication, the reunion participants were given an opportunity to add information to the transcript if they so wished, which below is rendered in notes as ‘*X notes*’.

emphasizes that she was seconded to the East African Community, and her salary paid by the Community (with a UK-paid supplement).

Dr Frances Bushrod, born 1947: British parasitologist and entomologist; worked in the 1970s with the Liverpool School of Tropical Medicine; in Amani as a PhD student and researcher on Bancroftian filariasis from 1972 to 1978.

Dr Aleid Kortmann, born 1939: Dutch MD; in Amani from 1967 to the 1970s (first in Muheza Field Station, then at Amani itself), as accompanying wife of the late MD and researcher Henri Kortmann (born 1939).

Mr Daudi Lelijveld, born 1959: son of Ineka and Jan Lelijveld; raised in Amani with his brother Hubert and younger sister Carmen.

Mrs Ineka Lelijveld, born 1930: Dutch, wife of Dr Jan Lelijveld (see below); lived in Amani from 1966 to 1970.

Dr Jan Lelijveld, born 1929: Dutch MD, first non-British and last European Director of Amani; lived in Amani from 1966 to 1970.

Dr Hubert Lelijveld, born 1961: son of Ineka and Jan Lelijveld; raised in Amani; brought his daughter to the reunion.

Dr John Raybould, born 1935: British medical entomologist and blackfly expert; lived and worked in Amani from 1960 to 1976. He named his first daughter Benika Amani.

Dr Katsuko Raybould, born 1945: Japanese botanist and ecologist ('plant sociologist'); lived and worked in Amani from 1969 to 1976, where she met John Raybould, her future husband.

Dr Alister Voller, born 1937: British immunologist, who obtained his PhD from the London School of Hygiene and Tropical Medicine (LSHTM); he lived and worked intermittently in Amani in 1970, 1971 and 1973, while based at the LSHTM, where he was a Reader at the time.

Mrs Eva Voller, born 1944: Swedish wife of Allister Voller; did not live in Amani, but named her first daughter Amani.

Dr Graham White, born 1941: British medical entomologist; who lived and worked in Amani from 1967 to 1972.

Mrs Dorothy Wilkes, born 1933: wife of Tony Wilkes; lived in Amani from 1958 to 1965 and later, during the 1980s, at Muheza field station.

Mr Tony Wilkes, born 1933: British entomologist, who lived and worked in Amani from 1958 to 1965 and later, during the 1980s, at Muheza field station.

Transcript

Wenzel Geissler: Good afternoon. I am sorry to interrupt the [...] train of your conversation. [...] We wrote to you that we would have a 'witness seminar', which is a format that some historians use to collect voices of the past ... well, you don't look very much like voices of the past, so voices *about* the past. [*chuckling and comments*] [There have been] witness seminars run by the Wellcome Trust about colonial medicine³ [...] that

³See: Reynolds, L.A. and E.M. Tansey (2001). British Contributions to Medical Research and Education in Africa after the Second World War. London, The Wellcome Trust Centre for the

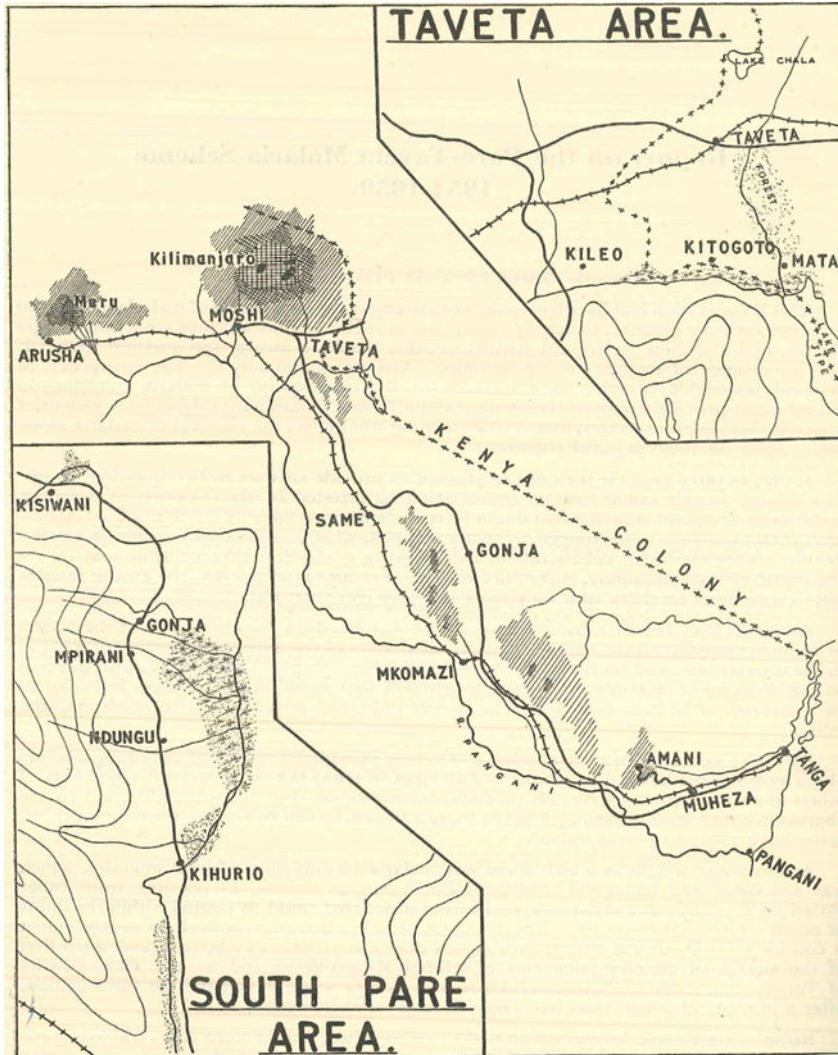


FIGURE 2: Amani and its field stations, Muheza, Tanga and Gonja/Pare, 1960. Source: East African Institute of Malaria and Vector-Borne Diseases (1960). *Report on the Pare-Taveta Malaria Scheme 1954–59*. Dar es Salaam, Government Printer, p. 2.

David Bradley⁴ organised with the forefathers of British science in Africa like Nelson⁵ and Garnham,⁶ and in a way ours is a follow-up on this. We know a lot about colonial medicine – so much that we can't hear more about it – and we somehow know how things are done [in African medical science] today, but we don't know anything about the transition. Few historians have studied the transition from colonial science to African science – the period that you called 'Africanization' in your time. And thus it is this 'Africanization' that interests us today. Our interest is not only scientific but just as much social, political ... you know, everyday life-ish. How was it to 'Africanise' science? As we discussed, we [ask this question] now to you, who were the last European contingent to work in Amani. [...] This is partly for logistical and partly methodological [reasons]. We will do the same in Tanzania, in Amani, but as for now it is your voices that we would like to record: what you did, why you did it and what came of it.

It is important for this kind of conversation is that it indeed *is* a conversation, mainly among you. So you should feel free to talk with each other and I will say as little as possible [...].

⁴Professor Emeritus at LSHTM. After studies at Cambridge and London, he lived and worked in Tanzania and Uganda for ten years, working on schistosomiasis, domestic water supply and health, as well as water-related diseases. He has advised WHO, DFID and World Bank on public health and research policy, and been President of the Royal Society of Tropical Medicine and Hygiene. See: <http://www.sbs.ox.ac.uk/faculty-research/skoll/knowledge-generation/applied-research/oxford-impact-0/researcher-profiles-0/dr-david-bradley>, accessed 18 January 2016.

During Bradley's time in Africa, he moved from Amani to the Mwanza East African Medical Research Institute (*see note 68 below*) in 1962, before moving on to the Entebbe East African Virus Research Institute (now the Uganda Virus Research Institute). All of these were part of the East African Common Services Organisation, later EA Community Research Institutes.

⁵Professor George Nelson, 1924–2009. He was Reader in Medical Parasitology at LSHTM from 1963, then Professor of Medical Helminthology 1966–1980, and Professor of Parasitology at the Liverpool School of Tropical Medicine, until his retirement in 1988. Following his early medical career in Uganda and Nairobi, he went on to set up internationally important research programmes on many of the key infections in Africa. *John notes* (when annotating this transcript): Nelson was part of the British Medical Research Council (MRC) team to inspect the work at Amani. (See M.W. Service and C.N.L. Macpherson (2009) George Stanley Nelson, *Annals of Tropical Medicine & Parasitology* 103(4): 369–372.)

⁶Professor Percy Cyril Claude Garnham, 1901–1994, who served in the colonial medical services in Kenya, Division of Insect-Borne Diseases, for over 20 years before joining the Parasitology Department at the LSHTM in 1947, where he was Head of Department from 1952–1968. His scientific achievements included the elucidation of the full life cycle of many species of malarial parasites. See: Anonymous (1995). P.C.C. Garnham. *Annals of Tropical Medicine & Parasitology* 89(2): 217–19. Garnham's long-term interest in the Amani Institute is indicated in Jan's comments below about the start of his own directorship. *John notes*: Although Garnham is often credited with eliminating onchocerciasis in Kenya, this is an error.

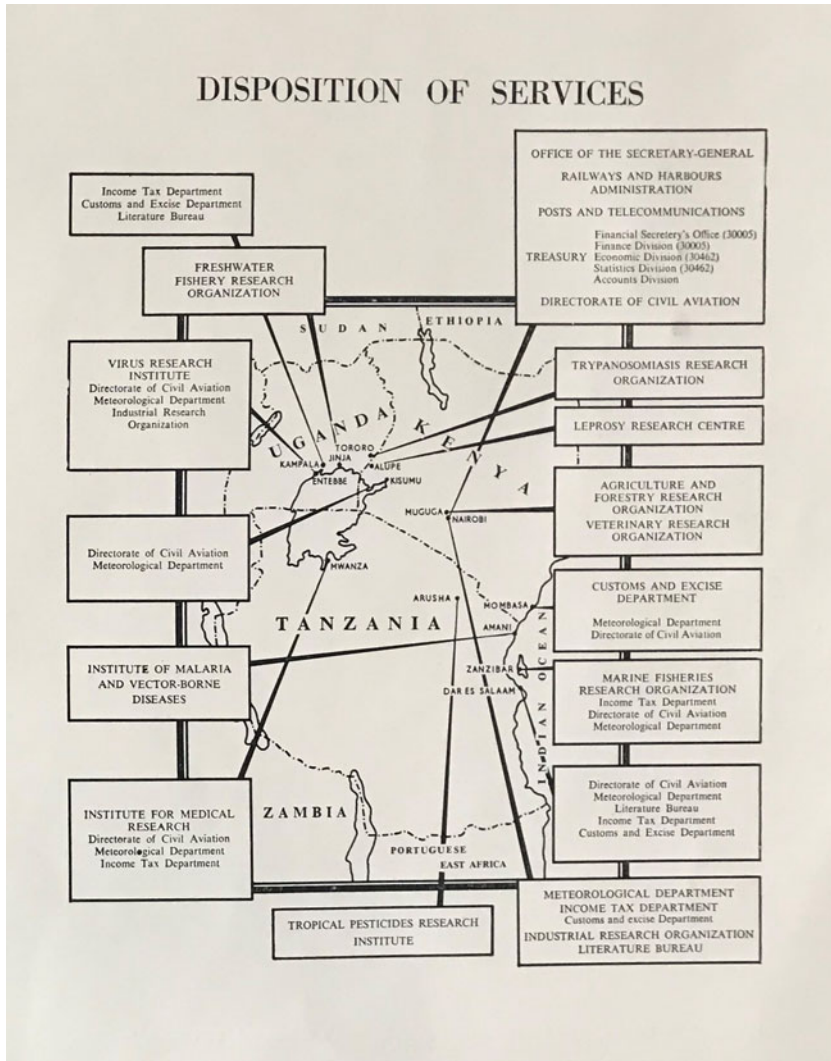


FIGURE 3: Institutions and services under the East African Common Services Organisation. Source: East African Common Services Organisation (1960). *How EASCO Serves You*. Nairobi, East African Common Services Organisation, p. 17.

As you have [talked] throughout the last two days;⁷ I am sure you will be able to talk to each other quite effectively!

⁷The session presented here was part of a reunion that took place over several days, including a dinner, a slide-show and discussion, walks and a punting trip, and various interviews in smaller groups.

[*agreements and comments*] [...] As I said, for us anything is potentially interesting, and for the historical record as well. And your experiences are obviously different; you know, a doctoral student has a different experience from an administrator or a director; a [...] clinician a different one from a visiting scientist, or a lab technician. So there are no particular issues that we are after, but we are trying to grasp what you did as the last Europeans [...] in Amani. [*laughter, jokes*] The first question we want to put across to you is this: when you came to Amani [...], ‘Africanization’ was in the air, it was a period of change, everybody was aware of that, but what did you come *for*? What did you come *to do*?

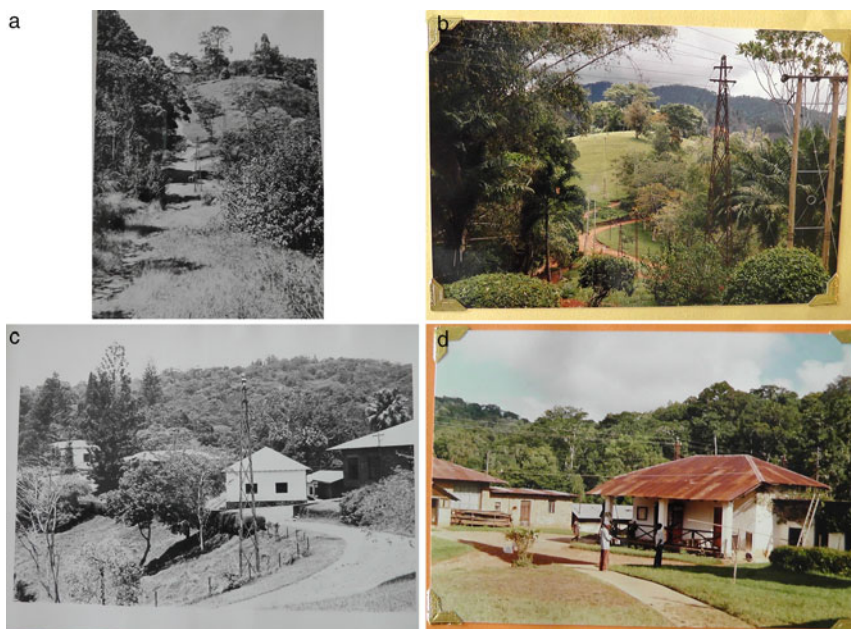


FIGURE 4A–D Amani Hill Station around 1969 (personal collection, Jan Lelijveld).

John Raybould:

Actually, just to sort of confuse it a little bit ... as somebody *from the past*, who's perhaps *losing* his voice ... but it was initially a case of ‘*de-Africanization*’, because the first African research worker in Amani was Msangi. I think it was Abdul Msangi.⁸ I refer to him in at least one of my papers on

⁸Abdulrahman S. Msangi, born in 1929, who had qualified for his BSc at the University of Makerere in 1953. At Amani he assisted in bilharzia studies and mosquito larvicide trials, publishing in the *Bulletin of the World Health Organisation* and elsewhere. In 1961 he was transferred to

houseflies, because he started that work. But he didn't stay very long, he went to Dar es Salaam, I mean perhaps wisely, you know, to a new university and that sort of thing. There may also have been a financial element [that made him leave] because, you know, expatriates often had supplements [*laughs*] and things,⁹ which even senior Africans didn't have. [...] So that's a case, in one sense, of de-Africanization.

But well, I was doing a course at the London School of Tropical Medicine, which Jan did a little later...



FIGURE 5: John Raybould, while rescuing a colleague's car from a ditch, around 1970 (personal collection, Anna Becker née Clark).

Jan Lelijveld:

Yes.

John:

... and I was told there was this vacancy, and would I be interested in going? And I said well, yes, certainly. And for reasons I never quite understood, they gave me good references, although they knew very little about me. Then, later, when Jan was leaving, he sort of said, 'Where do we go from here?' And, I *did* say that time that this is a period of Africanization and I don't want to be Director anyway.¹⁰ I mean, I'd have been a bit overwhelmed.

Morogoro as an entomologist with the Tanganyika Malaria Service. See Clyde, D. F. (1962). *History of the Medical Services of Tanganyika*. Dar es Salaam, Government Printer.

⁹Or 'top-ups' from their own governments, as well as their basic salary.

¹⁰John Raybould refers here to an earlier conversation, on the previous evening, about how he had been asked to step in as Acting Director during the interregnum after Lelijveld.

Jan
[interrupting]:

Sorry? ... You couldn't have been [Director], I think, because it was definitely the intention when I came to Amani that this would be the transition between the colonial time and the new time. But also, that I should try as much as possible to get 'Africanization' going in the Institute. So, [when I left] I think there was no option any longer for an expatriate Director in the Institute.¹¹



FIGURE 6 A–B: Farewell party for the last European Director, Jan Lelijveld, at the African club, 1970 (personal collection, Jan Lelijveld).

John:

But, it all worked out very smoothly, because it was something that I don't think I would have done well, and I didn't want the position. So, I was very pleased that Philip Wegesa¹² was there to step into Jan's shoes. I'm sure everybody else has got sort of an awful lot more to say...?

Graham White:

I'd like to add about the case of Abdul Msangi: [...] he was the first African scientist appointed. I don't know exactly the timing of it, but they didn't give him a lot of respect, when he was the first black one. They made him still live down in the *Bustani*¹³ house [sounds of agreement], and although I have

¹¹This slight contradiction, with Raybould recalling being asked to act as Director, and Lelijveld doubting this, could not be resolved by the participants, but it is not unlikely that the East African Community authorities indeed would have regarded Raybould as the most suitable successor, given that, at the time, there were few qualified African scientists at Amani yet.

¹²A Kenyan graduate of the LSHTM who initially worked with Raybould on onchocerciasis, then became the first African Director at Amani from 1970 until the breakup of the East African Community (EAC) in 1977. He then returned to Kenya and died in 1992. Phillip Wegesa's experience, first as a protégé and friend of the established European scientists, then as the first African to bear full responsibility for the Institute post-independence, then as a casualty of shifting political winds, represents a key to understanding the story of the 'Africanization' of Amani. See: Geissler, P. W. (2016) 'Tabula Rasa', in *Traces of the future: an archaeology of medical science in Africa*. P. W. Geissler, G. Lachenal, J. Manton and N. Tousignant (eds). Bristol, Intellect: 140–9.

¹³'Grove' in Swahili, in Amani it refers to a part of the botanical gardens, which includes its nursery, in a valley that is both geographically and symbolically far 'below' the bungalows assigned to European staff, and distant from the main research facilities. The houses in Bustani were originally built by the Germans founders of the botanical institute at Amani for African



FIGURE 7: Philip and Joyce Wegesa with Katsuko Raybould and their children, early 1970s (personal collection, John Raybould).

no reason to doubt that his basic reasons to go to Dar were simply ambition and opportunity, it took the transitions that Jan imposed to make it possible to give them the right level of respect and be treated as peers among the scientists. Msangi, though, was the first – and there were quite a few – who used Amani as a springboard¹⁴ [to become] a Tanzanian scientist. He went to Dar; before too long he was the head of Biology in the new University, which was only then created in the period of Independence. So he got to be Dean of Science and all the right things,¹⁵ and then ultimately, when – after the [East African] Community broke down and the country started their own different government departments, he was the founding Director of the National Institute for *Scientific* Research; not simply ‘medical’. [...] So I believe he typifies what happened with some of the good ones that came through Amani: they

garden attendants. For more on the question of unequal housing in Amani, and how this changed during Jan’s time as Director, see the discussion below, and in the Amani reunion transcript.

¹⁴*Graham notes:* PubMed has eight references to Msangi’s work in Amani, some co-authored with giants: Clyde, Webbe, Wilson. They were the last-generation colonials who fostered him. (See notes 134, 135 and 40 for details on these individuals.)

¹⁵*Graham notes:* Msangi is described as an important contact for the renowned primatologist Jane Goodall. (Goodall, J. (2001). *Beyond innocence: an autobiography in letters, the later years*. Houghton Mifflin Harcourt, Boston; pp. 141–142. The relationship between Msangi and Goodall is also mentioned, in relation to exploring approaches to human aggression, in Hamburg, D.A. (2004) *No more killing fields: preventing deadly conflict*; Rowman & Littlefield, Maryland; p. 3. Msangi’s leadership role during problems between students and government at the University of Dar es Salaam is also remembered in Swift, C.R. (2002). *Dar Days the early years in Tanzania*, University Press of America, Maryland; p. 16. The university was closed for two years from 1966 after students (led by those in the medical faculty) protested against the National Service Act and government corruption. President Nyerere responded by reducing cabinet members’ salaries by fifteen per cent and by declaring that all students present at the demonstration would be sent home to work on their family plots for two years before being allowed to apply for readmission to the university.

were sort of culturally *released*, to get ambition and go up the pole quite well, rather than *grounded* in Amani.¹⁶



FIGURE 8: Graham White (centre) during a table tennis match, probably at the Amani Club, late 1960s (personal collection, Jan Lelijveld).

Jan:

And on top of it, I think, the problem with Amani [leading to Msangi's and others' departure] was also that Amani was right in the bush. [...] Most of the trained people, they really had trained in an urban environment and they thought that they had upgraded from the rural environment to the urban environment, and didn't want to go back. And [when they were sent to Amani] they thought that they were stationed where they shouldn't be. So all of them had the ambition to go as fast as possible *back* to the city, to the bright lights. So that was very important as well.

But as you [Graham] mentioned, I think there was this period [...] just before me, when the African, trained African scientists, were *still* not treated as ... colleagues, you could say. They were just somewhere at a lower level, and it must have been very painful. Because I remember when I came – just after I came – Philip Wegesa had been on the project on oncho¹⁷ and he had been organising, in fact, the skin-snipping and everything. And then the group

¹⁶*Graham notes*: A conversation I had with Dr Mwele Malecela at a meeting of the American Society of Tropical Medicine and Hygiene in Philadelphia in 2015 confirms this. She described a museum exhibit portraying the history of Tanzania's National Institute of Medical Research (NIMR), including the Amani institute, which toured the country and is now on permanent display. (For further information on Dr Malecela, current Director General of NIMR, see note 190.)

¹⁷Onchocerciasis, or 'river blindness', a parasitic disease that is spread via the bite of a blackfly (*Simulium*), which lays its eggs in fast-flowing rivers. The adult worm sheds small filariae, which accumulate in the capillary blood vessels of the retina (hence blindness), and the skin (which is why superficial skin snips can be used for microscopic diagnostics).

[of foreign researchers] ... I forgot the names [...], let's think, it was not McGregor but ... MacDonald. They had been there, and then a paper came out and Philip wasn't there, on the paper. So, when I saw the paper [...], I *straightaway* wrote a letter and I said, 'You can't do that! Philip is a very, is an important research, er, officer in the project; he should be mentioned.' I got a very nice letter back saying, 'Very sorry, we had omitted that, we had forgotten!'¹⁸ But it was the *way*.



FIGURE 9: Group photograph of all Institute staff, possibly at the time of Jan Lelijveld's departure, 1970 (personal collection, Jan Lelijveld).

- Graham:* They didn't even think about it.
Jan: They didn't even think about it, and as soon as I drew their attention to it, they put his name straight away there. But that was what was happening; it was just the culture in those days.
Alister Voller: But I think another person who really came out well was Yohana Matola.¹⁹ I mean, quite incredible, starting as a

¹⁸*John notes:* This was Woodruff, A.M., Choyce, D.P., Pringle, G., Laing, A.B.G., Hill, M. and Wegesa, P. (1966). Onchocerciasis in the Usambara Mountains: the disease, its epidemiology and its relationship to ocular complications. *Transactions of the Royal Society of Tropical Medicine and Hygiene* 60(6): 695–816. *John comments further:* There was more than one case of this sort of thing happening with African research staff. I wonder how they inserted his name after publication.

Graham notes: Professor Alan Woodruff (Director of Tropical Medicine at the LSHTM) was very 'old school' and supercilious with me, but he devoted his retirement to building the Medical School in Juba, Sudan (and died in Khartoum, where the Juba medical department's staff took refuge from war in South Sudan). For more on Alan Woodruff, see note 140.

¹⁹Mr Y.G. Matola, born 1941, joined Amani in 1963 as Laboratory Technician, and became successively Research Officer I, Senior Research Scientist II, and Principal Research Scientist; between 1992 and 1995 he was the Director of Amani. He worked, among others, on malaria and filariasis; see, e.g., Matola, Y.G. and S.A. Magayuka (1981). Malaria in the Pare area of Tanzania. V. Malaria 20 years after the end of residual insecticide spraying. *Transactions of the Royal Society of Tropical Medicine and Hygiene* 75(6): 811–813.

Jan:
Alister:

technician, [*clears his throat*] and he ended up doing a course at the School of Tropical Medicine in London,²⁰ and ...
... became the Director.
And the project that we were involved in, he was absolutely crucial to it. He made the arrangements, he made things happen. [*Others agree.*] Extremely good administrator. And he *did* get the credit. He was on all the papers that ...



FIGURE 10: Alister Voller and his team during field research, early 1970s (private collection, Alister Voller).

Jan: Ja, I mean, after that there was no problem any more. But it was typical for that period. People *would* move on for all kind of reasons, but this was one of the reasons: the culture. But I think that after that, the culture changed.²¹

[*Several respond at once.*]

Tony Wilkes: You mentioned Msangi? His brief was to teach me Swahili when I first arrived. Unfortunately it didn't work! [*laughter*] But, as Graham said, he was very low-key, he was sitting in a room all on his own, and didn't seem to be working with anyone. But a very nice man. Of course, he would become

Graham notes: I was fortunate to engage Yohana Matola to run projects for me during 1990s (after he retired), and he ran them superbly, despite enjoying his binge drinking every evening. During the 1980s–90s my job involved WHO Pesticide Evaluation Scheme trials of insecticide house-spraying to control malaria vectors in more than 20 countries. Matola was the best local project manager I ever found, thanks to being fostered and respected by Jan, Alister et al. During my Amani days I was envious that he didn't work for me!

²⁰ *John notes:* Was it really in London, or in the Netherlands? Jan arranged it.

²¹ *Jan notes:* I.e., at that time, just before I came, there was some persistent colonial thinking. But this changed rapidly.

so good, he was one of *the* [...] people in Tanzania; the scientists at the very top.

Graham: Well, he picked a good subject: he did plague, and fleas, and became the expert.²²

Jan: No, [...] that was Kilonzo.²³

Frances Bushrod: Yes.

Graham: No, no, that was a generation later.

Jan: Oh, so Kilonzo [...] picked that up again.

Graham: [...] Yes. You are right on your basic point: Kilonzo was a similar example whom, we received him when he was doing his service, national service.

Jan: Ja, well, yes, this was a kind of social service [...].²⁴

Graham: And he came in his uniform, and we ... *You [the Director at the time]* put him in charge of the stores. So he had the stores organised in the first week. And then we had to get him to do some amusing things in the lab, and we all thought he was talented. But because he had a Tanzanian basic degree, he couldn't get to an MS course somewhere else.

John and I made a special case; we wrote very strongly that 'we were PhDs from London, and we recommended him for an exceptional place'. So then he got to do the master's at London, and then he made *his* specialty the fleas and the plague. And again, before too long he was asked to head up the faculty in the new University in Morogoro [and left].²⁵ [*Others agree throughout this*]

Jan: Ja, so that's what I meant: he was the real national expert after that, an East African expert.

Graham: So a lot of the good scientists, from Amani, [contributed] to those important steps in nation-building ... it has to be *valued*, not, not lamented [that they went on elsewhere].

Tony: About Matola, you are quite right. Matola was a technician for Gillies²⁶ and myself, as a young lad. And the impression

²²*John notes:* Abdul Msangi did his PhD in 1968 at Dar es Salaam after he had left Amani, entitled 'Observations on the endemicity of plague in Tanzania'.

²³Bukheti Kilonzo joined Amani as a laboratory assistant in 1968 and by the time he left it in 1983 had become Head of Microbiology. He moved to the National Rodent Control Centre at Morogoro, then Moi University in Kenya; he went on to found and develop the Pest Management Centre at Sokoine University of Agriculture, Tanzania. See: http://www.pmc.suanet.ac.tz/index.php?option=com_contact&view=contact&id=3%3Abukheti-swalehe-kilonzo&catid=68%3Aacademic-staff&Itemid=99, accessed 22 January 2016.

Graham notes: PubMed has 18 references for BS Kilonzo, showing his development from Amani. Later he served on WHO Expert Committees, and remained typically humble, humorous, and always passionate: we encouraged those qualities in him, beginning with amusement from his first name (which earned him the nickname 'Bucket').

²⁴*Jan notes:* It was a kind of uniformed social service.

²⁵Sokoine University of Agriculture at Morogoro, founded in 1965.

²⁶Mick Gillies, 1920–1999, was a Senior Medical Entomologist at Amani from 1951 to 1963. He worked on mosquito behaviour but his particular passion was mayflies, on which he became a world authority. His wife Agnes, a surgeon, gave up a position as an orthopaedic

I got right away, [was] that he was a ... he was always sort of ... very well spoken, speaking perfect English. And of course, having done seven years at Amani Twenty-odd years later, I was to go back again, when it had all happened [Africanization]. People used to talk, before Independence came: what would happen? Would it be able to go on? And that was [later, when I returned], we were able to see what *had* gone on. Matola became Director! [*Others agree*.] I can say so much good about him, and perhaps a little bad; but, can't we all?!²⁷ [...] I had a lot to do with Matola [then]. He used to come to seek my advice, which wasn't the best thing; he always would arrive at about half-past five in the morning, on his way to some committee meeting in Dar es Salaam ... this is when he was the Director. So he was asking me, you know, 'What are we going to be doing?' And so he got to know all about things ... and he was very good! At conferences he was absolutely perfect.

Jan:

Talking about the transition, I think the Matola case is also important; not only Matola ... Yagunga,²⁸ I think was another one. John and Graham, and I think Tom Fletcher²⁹ as well, they got this idea that they should go on [in terms of career and education]; and they should first of all get the Cambridge certificate.³⁰ And you [*addressing John*] were kind of *teaching* them, in the evening hours, to

Registrar in the UK to follow him to Amani and raise children there. For Gillies' memoirs, see Gillies, M. (2000) *Mayfly on the stream of time: a medical naturalist's life*; Whitefield, Message Books.

²⁷That is, presumably, 'Couldn't the same be said of all of us?'

²⁸Alphonse S.K. Yagunga is described as 'Technician' on a paper that he nevertheless co-authored with John Raybould: Raybould, J. N. and A. S. K. Yagunga (1969). Studies on the immature stages of the *Simulium neavei* complex and the associated crabs in the eastern Usambara Mountains in Tanzania 2. Investigations in small heavily shaded streams. *Annals of Tropical Medicine and Parasitology* 63(3): 289–300.

²⁹Tom Fletcher was contacted before the reunion in 2013, but was unwell. He passed away in 2014. For his funeral notice, see: <http://parishnews-online.co.uk/news-and-events-in-june/>, accessed 27 January 2020. *Graham notes*: Tom Fletcher was briefly Acting Director for Amani after Gerry Pringle's resignation/retirement. He enjoyed admin work (he was not a productive researcher – there are many stories about that) but he did a good job of recruiting us – myself, Leonard Otieno, Philip Wegesa, and Jan [Lelijveld]. (See note 232 for details on Otieno.) Later, he and Jan clashed, so Tom was transferred to the East African Trypanosomiasis Research Organisation, Tororo, Uganda. The enmity between the Fletchers and Lelijvelts had become bitter, counter-productive, and was never forgiven on either side. For her funeral notice see <http://branches.britishlegion.org.uk/branches/barnack/news-events>, accessed 1 March 2018: "23 JUL 2014 – The Branch was represented at the funeral of one of our oldest and most respected members – Marjorie (Billah) Fletcher – at Peterborough Crematorium. Billah and her husband Tom – who sadly, also passed away only a few months previously, had spent many years working in East Africa and Billah herself served throughout WW2 in the WRNS (Women's Royal Naval Service) at home and overseas."

³⁰Part of a set of examinations managed by the University of Cambridge, but taken locally, dating back to the 19th century. It represented a high-standard exam at school-leaving level, certifying the standard of secondary school education in overseas institutions and giving access to

pick up on the subjects. And then [people] like Yohana Matola, they got their Cambridge certificate;³¹ and we had told them by that stage that if they would do that, then we would make sure that they would get a *good* training place as a technician. So they [...] were sent for technician training, and they came *back* afterwards. That was important also ... but you can see, it started already from a fairly *early* stage, and Matola was one of the examples of this: that gradually, in the process of improving the levels of *possibility*, the levels of – how do you call it – the technical levels of the Institute, that *really*, through the times, *did* progress. [...]

Graham: We all knew that we were the last of the whites to be in posts of that type. And so, from the first beginning ... [while] being able to do our own research, have our own lifestyle ... we felt, I think, all of us obligated to *encourage* the right ones to be developed as fast as we could. And it was rather easy in Tanzania, because they didn't have a tradition of higher education; they were still just developing their first university. So it was a question of deciding at what point you could help them go to perhaps Kampala³² or somewhere, to get [training] – even if it was a technical qualification. They *needed* to be helped to make that step.

[*Others agree throughout this statement*]

John: I think Makerere, yes. But actually, one of the technicians mentioned by Jan – Alphonse Yagunga – In that case, and a number of others [...], assistance in the *beginning* was pivotal. I do remember spending quite a *lot* of time giving lessons to Alphonse.³³

Jan: Ja.

John: Sadly, he did very well ...

Jan: He did.

higher education. (See: <http://www.cambridgeassessment.org.uk/about-us/who-we-are/our-heritage/>, accessed 27 January 2016).

³¹*John notes:* Matola and Yagunga may both have taken the Cambridge School Certificate; I coached Yagunga, but don't remember the details. However, both of them were trained as laboratory technicians at the Uganda Technical College, Kampala. Here they took the City and Guilds of London Laboratory Technician's Certificate, followed by the Advanced Certificate of the same name. This gave them the initials CSLT and MIST, though I am not sure what all the letters stand for!

³²Makerere University in Kampala, Uganda. From 1949, this institution offered courses leading to general degrees from the University of London, which acted as its mother institution. From 1963 it was part of the University of East Africa, until this institution broke down in 1970, becoming the separate Universities of Nairobi, Dar es Salaam and Makerere. The University of Makerere was attended by many important African national leaders, including President Nyerere. See: <http://mak.ac.ug/about-makerere>, accessed 27 January 2016.

³³*John notes:* Alphonse Yagunga left Amani and took up a post in the University at Morogoro (Sokoine University of Agriculture) quite soon after he qualified. Sadly, he died not many years later.

John: ... but then there was an advert for a trained technician at Morogoro, so he didn't stay longer with *me*. But I shouldn't say sadly in *that* respect, because, I mean, that was the best thing *for* him to do, from his point of view. But the 'sadly' bit refers to the fact that soon after that he died, unaccountably. [...] I don't know why. But, you know, only a few years later; really quite young.

[*A background conversation takes place at this point between Frances, Vyvienne Attenburrow and Graham.*³⁴]

John
[*continuing*]: There is just one other element I would like to add to what Jan said about the tendency of people who have come from rural areas wanting to move into urban centres, which is a problem over *very much* of Africa.³⁵ I mean it is the same in Francophone West Africa: in the rural areas, the French [scientists] are there, and in the cities the local scientists. Now that was a general tendency, but in recent years it's been accelerated and *increased* a great deal, by an interest in education. In our time, African staff came in ... well, at least in the earlier part of my time ... unqualified; they got some qualifications, but they didn't really relate it to having adequate schools for their children. But *later* it really became quite competitive; you had to have the right *educational possibility*, and so it wasn't any longer just a question of going into urban areas for the bright lights

³⁴ *Vyvienne notes* (about this conversation): Graham (who did not really know me well) was asking how I got the job, what I thought of Amani initially, and how the older male technicians treated me. They were very kind to me – for example, one of the guys kept finding me a chair in the shade as he was worried about my sunburn.

Graham notes: Vyvienne and I did not overlap: she went to Tanzania after I had moved on. Two points of historical perspective: firstly, my recruitment to Amani in 1967 was pre-planned during 1966 while completing my PhD at the London School [LSHTM], where Jan Lelijveld, Leonard Otieno and Philip Wegesa were MSc classmates. So we arranged together for career steps to Amani, where most Research Officer posts were vacant and Tanzanian graduates could not be found. Secondly, working for the East African Common Services Organization (EACSO), which became the EAC, we made good use of links between sister Research Institutes in Kenya, Uganda and Tanzania/Zanzibar. That spirit prevailed for us; I collaborated with expat researchers in the Tropical Pesticides Research Institute (TPRI), Arusha (on field projects in Magugu and Taveta); the Division of Vector Borne Diseases, Nairobi; and the East African (later Uganda) Virus Research Institute, Entebbe. Your study should appreciate that, especially among the British, we had kindred synergistic research groups in all those EA Institutes. The only living pal from those days and places is Alan Fenwick, now Professor of Tropical Parasitology at Imperial College, London. His flat-mate Jim Hudson was my best entomology colleague, and they provided hospitality for me at the TPRI whenever I needed somewhere to stay overnight when driving from Amani to Nairobi. That was particularly helpful when my wife needed monthly prenatal trips to Nairobi in 1969 due to our rhesus incompatibility. So I became a sort of honorary Research Officer at Arusha, where Alec Smith remained the archetypal colonial-style Director.

³⁵ *Vyvienne notes*: But is this an African tendency? I moved from the Midlands to London to work for similar reasons!

etc.; it was also having access to the right schools. Which you had [...] if you were in Tanga, or even if you were based in Muheza, because there's a fast road straight to Tanga that only takes half an hour. But you can't really call the road from Muheza to Amani a fast road!³⁶ [laughter] So, you know, [in Amani] you don't have any access to the schools down the hill. And I don't think ... well, I can't think of a solution to that problem! I mean we don't want *de-Africanization*, with experienced expatriates without an education problem,³⁷ to re-staff Amani; but I don't know how you're going to overcome that desire [of African scientists] to move to an urban centre. Unless there is a brilliant school established in the environs [of Amani], in the forest!³⁸ [laughter]



FIGURE 11: Katsuko and John Raybould's daughter Benika Amani (on the right) with her class in a local school (on a neighbouring tea estate), mid-1970s (personal collection, John Raybould).

³⁶Tanga is the main regional town and coastal harbour and was in the 1970s the location of a small field station under Amani; Muheza is a small town in the plains below Amani, from where the ascent into the East Usambara Mountains begins. Muheza was also a field station of Amani, and became later, in the 1980s and 90s, a major field site of collaborative malaria research. In 2007, the original field station in Muheza became the Amani Research Centre, and the original of Amani Institute became a field station under the same.

³⁷*John notes:* That is, without young families requiring schools.

³⁸*Jan notes:* John is right, this was very important!

Graham notes: This is a big topic for discussion, not a joke! Jan's children had an excellent education in the Western Usambaras; many African children go to schools far from home. When my three sons (all born in Africa) reached the age for schooling, I could not have paid fees for boarding schools (being an impecunious research entomologist in Africa), so I found a job in Britain where my children had the standard, free, state education. Even then, it was difficult to make up for my low income for ten years during my PhD and Africa jobs, while my age-peers had mostly progressed with mortgages and career promotions in the UK.

- Wenzel:* Talking about education: when you started training all these different people, what kind of qualifications did people come with? What challenge did you have to overcome in terms of training, to bridge the gap between the educational background they had, and what they were expected to do within a short time?
- Vyviemme:* What do you mean? The ‘background’ that the actual ... the people came from?
- Wenzel:* Well the kind of training they came with? For example, in the laboratory, you were training people. What was the gap between the staff’s training and knowledge, and the kind of knowledge you would expect or need?
- Vyviemme:* I think [my task] was really to bring in what were then up-to-date techniques, if you understand. Because I was Western-educated, Western technically educated. So I mean these guys knew far more about, you know, malaria and all this than I did, because that’s *their* training; but mine was actually sort of teaching them the value of cleanliness. I did a lot of cleaning up in that lab! I mean that sounds very – I don’t know, *Victorian* – but it was! Because it is important, isn’t it, in the lab? [*Others offer agreement and encouragement.*] And it was [necessary that] you didn’t just have slides like *this* [*gestures with hand, things piled up close together*], you had to look after the slides *before* you use them, you know! It’s basic things which – excuse me – you as scientists, you wouldn’t think about, because that’s not your training [*laughs, others laugh*] – no, but I did do. And in the field, you know, those forms they filled in, I did actually show them – I can’t even remember who it was now, it’s a long time ago – how to collate the forms – well not just collate, but deal with the data better, because we didn’t have computers and things – and how to file things better in the field, do you see what I mean? Which was just my training, which you [scientists] didn’t know anything about. [*laughs*] John is looking at me completely blank!

[*laughter, agreement*]

- Jan:* Wenzel, you were asking about academic backgrounds when they came in. I think most of our staff, particularly in the time of Bagster Wilson,³⁹ they were people that had at best a

³⁹Major Donald Bagster Wilson, OBE (1901–1960), was Amani’s first Director post-World War II. He set the direction of malarial research for Amani and served as a symbol, or caricature, of traditional British colonial authority long after his departure in 1959. Anonymous (1961). D. Bagster Wilson, OBE, MD, MRCPDTM&H. *British Medical Journal* 1961(1): 134.

Graham notes: ‘Bagster’ and his wife, Dr Margaret Elizabeth Wilson (née Lovett), began investigating malaria hyperendemicity near Muheza during the 1930s. They discovered a new species of



FIGURE 12A–C Anna Becker née Clark; Vyvienne Attenborough; Frances Bushrod, early 1970s (personal collections of the above).

few standards of primary school. But they were, they were bright ones, and they kind of did grow within their work in the Institute. I think when people like Matola came in, they already had a bit more than primary school, but they had no secondary school diplomas; and they *needed* the secondary school diplomas to get into formal training for technicians etc., and further on. And so it was at *that* stage that, as we mentioned, John and co came in to help people like Matola, and Yagunga and so on, to get ... to be able to get these qualifications, on the basis of kind of written courses [distance based]. Anyway, they got it in the end, they got what I think was called the Cambridge Certificate ...

Anopheles mosquitoes in the Amani forest. Specimens sent to the Liverpool School of Tropical Medicine were described and named as *Anopheles lovettiae* and *Anopheles wilsoni* by taxonomist Alwen Myfanwy Evans in 1934. After Bagster's service as malariologist with the East Africa Command in Kenya and Abyssinia during World War II, the Wilsons founded the East African Malaria Unit at Muheza in 1949, then moved it up to Amani in 1951 when the East African Agriculture and Forestry Research Organisation vacated those facilities. Bagster was notoriously authoritarian with everyone, regardless of race, whereas Peggy [Margaret] was far more charming and intellectual. She was a qualified paediatrician who had worked in Nepal before marriage. After they retired from Amani, Bagster pined away and died from heart failure. Peggy Wilson then resumed her career by volunteering with the MRC lab in The Gambia, where her parasitology skills were invaluable.

- Various:* School Certificate.
- Jan:* The Cambridge School Certificate. And that was enough then, that they could apply for technician training, in Uganda. And that's the way that things upgraded gradually. And then, later on we started ... *in* the Institute, we started trying to upgrade some of these people by starting courses. And I still remember Kassim Kivumbi⁴⁰ [*agreement, laughter, affectionate recognition from several*] ... who was one of the real ... one of the real good ones in that sense, because Kassim was a very good technician and very *capable* human in the, in the general sense. And when we started this [training], I said, 'Kassim, *you* are now going to this training class'. Kassim said, 'I can't do that, it is impossible,' etc. etc. But I said, 'Well, but I insist you go,' and Kassim went, and when the course was finished he came out on top. And so Kassim did very well. But it shows you what we were trying to do.
- Graham:* But he was semi-literate when he started.⁴¹
- Jan:* Ja, he was *semi*-literate, but he had the *idea* that he couldn't follow the [...] training on it. And yet he did very well, then.
- Graham:* He could make sure your Land Rover was repaired.⁴²
[*general laughter and agreement*]
- Jan:* Oh yes, definitely.
- Graham:* But he couldn't write science!
- Jan:* No but, but ... ja.⁴³
- John:* That's very true, and it *is* extraordinary how you can find somebody really *bright*, but with very, very little education, and how much they can achieve. I mean this, this relates particularly to Ghana in my case, not, not Amani, but: I had a guy who started as my driver, and became my technician, and he could deal with all *sorts* of things that I had problems with. But I discovered at one stage that when I asked him if he'd mind putting things in alphabetical

⁴⁰Presumably an untrained technician; sometimes jokingly called 'Kidusty', according to John, because '*vumbi*' means 'dust' in Swahili.

⁴¹*Graham notes:* This looks insulting, but he was very clever and quickly understood people sympathetically, with flashing humour and a toothy grin. From knowing him, and Justin Muniss, who came from the local village, I developed the view that illiterate communities everywhere have good proportions of potential scholars and inherent genius, inherently equivalent to more educated advanced communities: they simply need scope to realise their capabilities. For me, John, Jan et al., the Amani experience demonstrated that.

⁴²*Graham notes:* They had a saying in colonial Kenya, regarding Africans: 'Give us the job and we'll finish the tools' – reversing Churchill's famous 1941 plea to the US Congress to 'give us the tools and we will finish the job'. We found it easy to bring out the best skills in Tanzanians (and Kenyans and Ugandans working there with us) by encouragement. Their cultural open-mindedness was, and remains, I think, derived from the lack of exploitation by the British administration of Tanganyika, in contrast to the spirit and consequences of colonial exploitation of most other African nations. Perhaps I'm too naïve, but we all believed in each other from top to bottom of the Amani community in those days (excluding the imperialistic managers of some tea estates).

⁴³*Jan notes:* But he became an all-round technician, understanding what he was doing.

order, that he didn't know the alphabet! [*laughter*] So you get that element, and sometimes people can be ... I'm not sure whether *trained* is the right word ... can be *encouraged*, shown what is required, with regard to getting reliable data that is useful. And that I think applies to people like Steven Fedha,⁴⁴ Ramadhani Ali,⁴⁵ John Mganga.⁴⁶ They were rigorous in collecting and recording the results, and so on, but, I mean, although they went down as one of the authors of my papers, they wouldn't have been able to *write* the paper as *such*. But, I mean, they learn *that* ability.⁴⁷ So there are different *levels*, and I am not even sure if 'levels' is right there! [*chuckles*] But there are different *ways* of getting useful work done by people with different educational backgrounds. And of course, in Amani, in Tanzania, *very* often, you have individuals with first-class Kiswahili as well as their *own* language, and maybe one or two other languages as well; but in many cases without much knowledge of English, let alone Dutch! [*laughs*] So...

Tony: When I arrived in '59, one of the things I noted immediately was that they could *all* speak English very, very well. And, people like ... they got German names, which was fascinat-

⁴⁴Born in the 1940s, Stephen Fedha came to work at the Institute when it was run by the EAC, training in Mick Gillies' laboratory. He then worked extensively with John Raybould, earning the nickname 'Dr Crab' for his dexterity in catching river crabs, and is acknowledged on numerous papers alongside John Mganga and later Philip Wegesa. He bought some land in a village near Amani and retired there, cultivating cloves and cardamom.

⁴⁵Son of Rashid Mtingi, the first non-white Field Officer, and a peer of Jan's son Daudi; a driver and clearly also a field assistant. See note 211 on Mtingi.

Graham notes (on a journey with his family and Ramadhani Mtingi in November-December 1970): That journey with my wife and son, surveying the *Anopheles gambiae* complex in a wide loop around Lake Victoria and Ruwenzoris (via Kenya on the way out, via Congo, Rwanda, Burundi on the way back), was permitted by Jan as an extension of my WHO consultancy for one month at Kisumu. Ramadhani was increasingly apprehensive about the locals as we went further into Africa where they were not Muslims, then enthusiastically more motivated as we returned to Tanzania via Sukumaland. (See the resulting 1972 paper, White, G.B., The *Anopheles gambiae* complex and malaria transmission around Kisumu, Kenya, *Transactions of the Royal Society of Tropical Medicine and Hygiene*, 66 (4): 572–581.) Drivers played an important role, as government vehicles could only be driven by officially employed drivers, not researchers themselves.

⁴⁶John Mganga worked as a subordinate staff member at Amani from the 1960s to the 1980s, initially as a 'fly-boy' (a role later renamed by John Raybould 'field assistant'). He contributed to research on malaria, river blindness, and plague, alongside Mick Gillies, John, Philip Wegesa, and Bukheti Kilonzo. After retirement, he continued living in a staff house in the lower-lying workers' settlement in Amani, dividing his time between this and a second home in the nearby cultivation area. In 2014, he collaborated with photographer Evgenia Arbugaeva on a series of photos around Amani; see Arbugaeva, E. and J. Berlin (2016). Dreams of science and progress haunt shuttered lab. *National Geographic Magazine* December, 122–31.

⁴⁷*John notes*: I.e., technical ability.



FIGURE 13: Children's birthday party at the Directors house, with Ali, Ramadhani Mtingi's youngest brother, late 1960s (personal collection, Jan Lelijveld).

ing to me. [*general agreement*] Markus, Oscar, Adolf! That was quite a shock! [*laughter*] And I think that a lot of the Brits, the expatriates, weren't all that good at Swahili, because *they* [the African staff] could speak English quite well.

John:

Mm [*agreeing*]. But, I mean, that was sort of one year earlier,⁴⁸ and they were the people who were grabbed, or taken on, or whatever the right word is, *by* the expatriates, quite often because they *could* speak English. But I mean, there was a limited supply. And some of us were working – Graham, I think, has a similar experience – some of us were working with people who were *not* good at English at all; but they were very literate in Swahili.

⁴⁸ *John notes:* Before I arrived in 1960, that is.

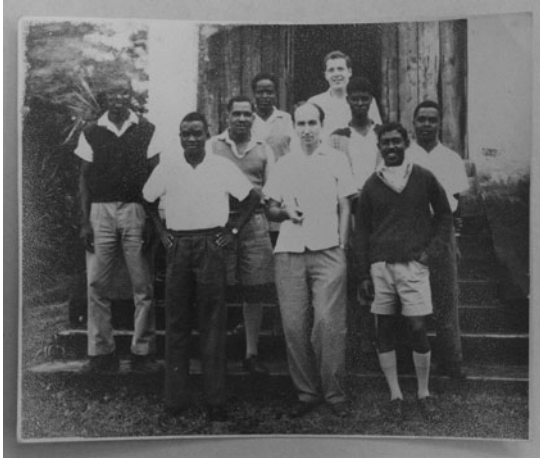


FIGURE 14: Mick Gillies and his research assistants, with Tony Wilkes at the back and Philip Wegesa, the future Institute Director to the left of Gillies and Wilkes, around 1960 (personal collection, John Raybould).

[*One of the women agrees, starts to speak but is cut off*]

Jan:

But there was barrier as well as in that ... If we go back to Matola, who I'd say obviously, was the brightest of the lot, in the end. When Matola was going on, I started trying to get him an academic education, and *there* you would get into funny situations. Because, the grants and the bursaries that were made available, they were generally made available in such a way that people in the donating countries had thought about what was ... what was worthwhile. So with Matola, I know still very well, when we were trying to get him into a university in Holland, that granting organisation⁴⁹ in the *end* did throw him out, because he was not applying for a medical degree. He should have done a medical course, because they thought a medical officer was much more important in the health field than a biological research man. So, in the end he didn't get anything; and I couldn't get through that barrier at the time. It was really very funny, the way they told me off, and said 'Well, no, we want people to, to do *that*,' and they gave the grant just

⁴⁹ Jan notes: The board of the Foundation Simavi (a Dutch international development organisation focusing on developing health and medical provision, founded in 1925; see <https://simavi.org/who-we-are/about-us/>, accessed 30 March 2019).

Graham notes: Jan's comment reflects the less flexible educational channels in Holland in those days, whereas we got Kilonzo and other Tanzanians into MSc and PhD tracks in the UK by pushing tactically for rules to be bent, based on the merits of the candidates. I was able to do the same much later for individuals in Côte d'Ivoire, Indonesia and Nepal.

at the last moment to somebody else who was intending to do something that *they* liked. So we had that barrier as well ...

Vyvienne
[in the
background]:
Jan:

That's the problem everywhere.⁵⁰ [laughs; someone agrees]

Alister:

... and that's a difficult political, cultural barrier that we have with the West.

I think one of the problems there was: it was relatively easy. These people, a lot of them, were intelligent, these technicians, and they could pick up on practical things and do it better than we could, no question at all. [Someone agrees emphatically in the background.] But they didn't have the academic background behind it, [agreement from others] so sometimes the most stupid things [i.e., mistakes] could be done; but it wasn't stupid to them, because they didn't know. Like we were collecting serum samples, and it was very important to keep things cold, relatively, and you would see some of the samples would be taken and put out in the sun, so they were cooked and useless. [Others agree.] But people had to be told, you know. When you've had the whole academic background behind these things for several years, it's very difficult to *instruct* people in *every* part of it. Because you can do the actual practical things that need to be done on that day; but it's very, very difficult to teach people the whole experience that you've had over maybe the previous six or seven years – your degree and your postgraduate and doctorate, whatever. [Agreement from others.] There was a big gulf there sometimes.

These were very capable people, they were intelligent. But I never found the right way to cover that big gap, where we'd had seven years, and these people had come from very little, up until doing things. And ... it needed a very sophisticated background in several sciences, maybe, not just the particular one you were using; it's things you started learning them at A-levels, or at school where you started to learn things. And that just was *not there*. I mean, it was very difficult, and I guess it is now. [agreement from others] That it was a little bit different, I think, in West Africa, in Ibadan where I was working [later], and in Makerere, where they actually took people quite early on and gave them training. They had this direct connection with the University of Liverpool, or the University of London, or St Thomas' hospital in the case of Makerere, where people were trained, and

⁵⁰ Vyvienne notes: That is, technical training is undervalued everywhere.

they went back and forwards. And they had, they had a much more academic understanding than, than you found in Amani, partly, I guess, because of its isolation. I think that was, that was very difficult.

[agreement from others]

- Wenzel:* It sounds as if you had to work across quite a gap.
- Alister:* I mean it wasn't an intellectual gap – in terms of cleverness – it was the accumulated knowledge you got over several years [others agree], and that is *not* easy to impart.
- Wenzel:* I understand. So you worked across this gap in a very short time. It sounds as if the task of training somebody to PhD level⁵¹ within a few years would have been quite a challenge [under these circumstances]. Was there any pressure, to do this, to move on with this training?
- Jan:* You mean, political, or social, or administrative?
- Wenzel:* Yes; and *who* gave you the frames to move on with this task?
- Vyvienne:* Well, it was because you wanted good technicians, and you could see their value. [others agree]
- Graham:* I think there was a rapid growth of bureaucratic management of the [East African] Community. As black people were running it, they were pressurising people like the Director in Amani to get the right qualification *levels* for his staff.⁵² And I think Jan was having – you mentioned this just now – some struggles with the donors from Holland; but maybe you would like to say a few things about the struggles you had with Arusha, with the headquarters, as they started to impose standards – standards [...], which would be much easier to meet for a Kenyan centre, or a Ugandan centre, in the way we've just implied, and which were almost impossible to meet with Tanzanians in a rural place like Amani. And we all know that Jan really struggled on ... on a basis of selection by virtue [laughs], rather than by qualification.
- Jan:* Ja, that's very true, because as you said, the administration of the East African Community was, in fact was already a kind of 'second-grade' administration within the overall context. I mean the officers that went there were second-grade officers from the other administrations in the territories that they wanted to get rid of,⁵³ or that needed some promotions that they normally wouldn't get, so they ended up in the Community; and that meant that the Community got it

⁵¹ *John notes:* That was later. Vyvienne implies that the challenge was more to establish competent technical skills, not necessarily getting them to PhD level.

⁵² *Jan notes:* This consisted of political and social pressure from the donor side, and administrative pressure from the EAC side.

⁵³ *Jan notes:* Quite often/sometimes.

- fairly lower-level [quality administrators] in that sense.
- Graham:* And we need to emphasise *how* the headquarters suddenly developed in Arusha.
- Jan:* Ja.
- Graham:* It was at a time when the presidents of the countries were beginning to polarise away from each other. And Nyerere decided to invest the money somehow. This often happens; you see it today in Geneva, that the Swiss government would put up a building and offer it to the AIDS programme. Well, Nyerere put up the offices in Arusha to have the [EAC] headquarters. And then, for a good long time, many of the best administrators who should have been running the Community, commuted from Nairobi. They wanted to live back in Kampala or Nairobi and come to the office in Arusha for minimum time, and invent reasons why they otherwise were on tour.
- Jan:* Ja, and then they went back as soon as possible. Mr Wako, for instance; he was Secretary-General, and then went back to the Kenyan government, he shot up very high in the Kenyan administration.⁵⁴
- Graham:* And then, when the Community finally did break down, you had that extraordinarily immature group of administrators in Arusha, who were basically told ‘Well, if you’re Tanzanian, you stay here, and you run it for national purposes.’
- Jan:* Ja, ja.
- Graham:* And then there was a long gap, I don’t know if anyone can work out [how long]? When did Prof Kilama decide to start to make NIMR?⁵⁵ Was it five years later, after the Community broke down?
- Jan:* I don’t know. It was long after my time.
- Graham:* And when he did [start NIMR], it was very a curious self-selected group of people [*chuckles*], who were Kilama’s

⁵⁴*Jan notes:* This was a real loss for the EAC.

⁵⁵Professor Wenceslaus L Kilama, founder and first Director General of NIMR from 1980–1997. Professor Kilama returned to Tanzania after studying in the US and founded the Department of Parasitology and Medical Entomology, Muhimbili University in 1970. Kilama went on to set up NIMR, then, in 1995, the Africa Malaria Vaccine Testing Network, a leading organisation in researching, developing and deploying anti-malaria tools. He has co-authored over 100 articles and has served on various WHO, World Bank, and EU commissions as an expert in malaria, research ethics, and sustainable development. He now lives at Mugana, Missenyi District. See <http://budefo.org/wence-kilama/>, accessed 11 January 2016.

Graham notes: I could say much of Professor Kilama’s vision, accomplishments, ENERGY and humanity. He was the creator of NIMR, which is now more bloated and bureaucratic than when he ran it lean and mean from a small bungalow office. When I first met him in 1968 at Notre Dame University, Indiana (where he was investigating vector genetics of chicken malaria for his PhD), our conversation was awkward because I enjoyed working in Tanzania, whereas he had never been there after independence in 1961, since his family gave him only a one-way ticket to the USA before then, and he had to work his way there, to complete education.

friends who worked on medical parasitology. He being the relevant professor in Muhimbili University.

Jan: Well, I think also what you are saying is that while *we* were doing this – trying to stimulate *our* people to get on – there was not much interest in Arusha to do that. I didn't get much backing; they didn't come up with grants or so. It was much more our *own* initiative, trying to approach different organisations and different possibilities to explore that. So that was another thing, and I think that in the Arusha administration they looked at Amani as a bush station.⁵⁶

Graham: They certainly were not trying to solve major questions of African disease!⁵⁷

[Laughter from everyone]

Jan: Sure, to them, Amani was a kind of *punishment* station. [*Others agree.*] You would send people there that had already failed in Arusha, and they had a big struggle to get rid of those people. If you remember, we had several times to send people back, and that they had a *big* struggle in Arusha to, to ... [*someone agreeing*]⁵⁸

John: And you had the absurd paradox of administrators in headquarters *insisting* on paper qualifications, without having them themselves. [*chuckles from various*]

Jan: True.

John: I mean one prominent example I remember was ... well, I won't mention his name, but ...

Vyvienne: Go on, John – you're allowed!

⁵⁶*Jan notes:* I.e., good for lost souls!

⁵⁷*Graham notes:* They were office managers, not medical researchers; they left our scientific oversight to the British MRC and Dutch WOTRO (overseas development institute within the national research council), while we aimed for peer review journals and professional conferences. The initial ability of the East African Medical Research Council to help our Institutes was cut short after General Idi Amin took power in Uganda in 1971. We were going to Kampala for the annual East African Medical Research conference when that *coup* happened. Thus my flight from Tanga was cancelled. Philip Wegesa was already there in Kampala and had to dodge the bullets coming into his hotel. Medical research goals and standards declined thereafter in EAC institutes, although individually we mostly thrived and progressed well according to our own ambitions and connections. Whereas the new indigenous researchers struggled to get a grip on their opportunities, we expats were privileged to be wanted for local access to medical materials needed by international experts and collaborators, who drove us with demands and support.

⁵⁸*Graham notes:* While Jan was Director I was impressed by his expedient transfer of incompatible staff to far away locations. For example, Alexander Sabuni was a Tanzanian Malaria Officer in my team who had devised many ways of fooling us with contrived results; when I was fresh from London, it took me nearly a year and wasted much research effort before I recognised his deceptiveness. Jan made the case for his transfer to Tororo – I never saw him again and my team respected us more for getting him off their backs. We replaced him with Justin Muniss (*see note 183*).

[Lots of laughter from others. In the background:]

- Frances: Jean Bonga ... [*unclear*].
 Vyvienne: Yes, yes. Poor old Jean Bonga punished him on the tennis court!⁵⁹
- John ... employees were complaining, because they were saying, 'We are having to get this, that and the other [qualification]; he's appointing us, and he doesn't have it himself!' But, anyway, the man concerned responded by going to Mecca, and then he could call himself 'Al-Haji'!⁶⁰ [*Laughs; others laugh.*]
- [*continuing*]: But there were also situations where qualifications were demanded when they were *totally* irrelevant. Now, I mean, this may sound a little ... un-germane, but I think you will see the point in a moment: we knew one or two female Japanese chicken-sexers. Now, they sexed day-old chickens, and for whatever reason, it seems that it is only Japanese women who have the visual acuity and the manual dexterity to sex day-old chickens like that, you know. [*laughter, back-chat*] And that all worked well. There was just a very slight problem when [one of] the ladies concerned got a boyfriend, you know, her rate went down slightly below 100% – but at one point, the Tanzanians said, 'Well, you're sending us these chicken-sexers, but they don't have degrees!' And, you know, they sort of said, 'Why don't you send us qualified chicken-sexers?' And of course they got the reply from the Japanese government, 'We are very sorry, but we have no universities that give degrees in chicken-sexing!' [*laughter*]
- Jan: That one takes the boot!⁶¹ [*others agree*]
- John: So, I mean, it is important to get qualifications, but often you can't send people for training, as Jan says, unless they have got an *initial* qualification. And sometimes you've got people who are fully trained and competent who *don't* have paper qualifications, and yet they are requested ... and I mean it's amazing how many basic mistakes *were* made. Even in terms of ... well, I shouldn't say 'even'; perhaps 'in particular' in terms of overseas aid! I mean, most of us were very familiar with Amani roads. [*coughs*]
 Now there was an American Peace Corps bloke, who was putting culverts⁶² under the road for drainage. He was, I

⁵⁹Jean Bonga was a laboratory technician from the Netherlands, who worked at Amani in the late 60s and early 70s, at the same time as Jan Lelijveld.

⁶⁰An Arabic honorific given to a Muslim who has completed the pilgrimage or 'Hajj' to Mecca, birthplace of the prophet Mohammed.

⁶¹Presumably, 'takes the biscuit', i.e. 'tops it all!'

⁶²*Graham notes*: Before independence, Amani had 'Malaria Engineers' responsible for training various others (e.g. the Public Works Department) on how to manage drainage to stop pools

think, a fairly enthusiastic sort of guy, but he was a graduate in Spanish! And Amani is one area where the number of Spanish speakers is limited, to say the least! [*Laughs; others laugh and offer supporting comments.*] And so what they did, the local authorities was this: they sent a Tanzanian road engineer, who happened to be a Sikh, with a group of Tanzanian workers, to *follow* the Peace Corps guy up the hill, to take out his culverts to put them in the right place! [*Laughs; others laugh.*]

Vyviennne: Sounds very familiar to me.

John: And, I mean, certain very *illogical* things took place. I don't know how Wenzel et al. are going to *summarise* the *essence* of the content that we're putting forward, but it's certainly complicated, and varied! [*laughs*]

Alister: You were talking about the overseas aid pot; what I would say is that you had these site visits from the MRC.⁶³ [*Jan agrees.*] They were the people coming over, very well qualified people who knew exactly what they wanted, but they were not interested in 'Africanization'.

Jan: No.

Alister: They were interested specifically in the project they were supporting. [*Others agree*] And they wanted to see results, they weren't the *least* bit interested in anything else. And that was the *only* way you could justify [your work]: by *results*; otherwise the next grant that went in – you didn't get it.

Jan: Ja, that was very clear, what you say. Because I was obviously – as the Director – I was part of the body that came together under the Ministry of Science in Arusha, and when the grants would come up, you had grants from the Medical Research Council that could run up from ten per cent maximally to forty per cent.⁶⁴ And the only institute that got forty per cent was *my* institute; there was only one other and that was Raphael Onyango's⁶⁵ institute. And all the other ones wouldn't get anywhere, however hard they tried. And there were obviously some institutes that

where vector mosquitoes would breed. But those posts were converted to 'Research Officer' after independence, and the science of anti-malaria engineering is only now gaining renewed attention.

⁶³*Jan notes:* Because the UK MRC had a mission to justify the running grant levels yearly.

⁶⁴*Jan notes:* That is, the maximum grant you could apply for from the MRC was forty per cent of your estimated budget. During my time, we got this maximum constantly, but the African-run institutes received on average only twenty per cent!

⁶⁵Onyango was Kenyan and Director of the East African Trypanosomiasis Research Organisation (EATRO), established in the mid-1950s in Tororo, Uganda, and in the 1960s part of the East African network of disease-specific research organisations with international staff. His sudden exodus from Tanzania at the collapse of the East African Community in 1977 is described below. Jan described him in an informal conversation as 'our best African Director' (presumably, within the EAC network).

- weren't worth any, let's be honest on that as well; but it was quite clear that there were only *very* few institutes, and mainly the institutes that were 'properly' colonial-run were the ones that ...⁶⁶
- Alistair:* [Are you talking about] the external grants, from the British Medical Research Council?
- Jan:* The external ones. Ja, the forty per cent level.
- Alistair:* They [MRC] tended to send two or three people who spent a day or two in Amani [*Jan confirms in the background*], and they produced a report. [...] They did what they were supposed to do: they were asked to report on how the money had been spent and whether it was productive.
- Jan:* But they *didn't* help young people like Vincent Eyakuze. He was in Mwanza,⁶⁷ he was a young man but he was quite capable, and he was struggling very hard to get this institute going, and it wouldn't help him that *his* grants would be at the twenty per cent level⁶⁸ – ja.
- Graham:* His problem in Mwanza [was that] he didn't have people like us! [*laughter*]
- Jan:* Ja; OK, but ... [*disagreeing*]
- Graham:* He had only the first generation of inexperienced indigenous people. [*agreement*]
- Jan [continuing]:* ... [but] it's the thinking, and that's like what you mentioned: it's the *development* thinking that should have been behind it, and there was none of it; it was a kind of technical thinking ... [only] the *results*, the investment in results.⁶⁹
- Graham:* The comparison with the Mwanza institute, which in that period was more or less totally focused on schistosomiasis,⁷⁰ is that all the schisto experts from the colonial area had *quickly* disappeared. Even one or two of them came to

⁶⁶Presumably, the end of Jan's sentence here is 'which received the full allocation'. That is, he suggests that there was perhaps some bias in the allocation of UK MRC funds in favour of institutes still run by expats.

⁶⁷At the time, Eyakuze was the first African Director of the East African Institute for Medical Research (EAMRI) in Mwanza. The institute was originally set up in 1948 by the British as a filariasis research unit, and then merged with the East African Medical Survey in 1954. With independence, the unit came under the auspices of the East African Medical Research Council of the EAC in 1957 and was renamed EAMRI Mwanza. Following the breakup of the EAC in 1977 it became part of the assemblage of institutes run by the Tanzanian government as part of NIMR. See <http://www.nimr.or.tz/about-us/background/>, accessed 18 January 2016. Gerry Webbe and David Bradley also worked at Mwanza in their time; both Jan Lelijveld and John Raybould visited there.

⁶⁸*Jan notes:* At best.

⁶⁹*Jan notes:* The MRC in particular used elderly traditional experts with few, if any, development-related visions.

John notes: Jan meant that consideration should have been given to indigenous/national development – not just technical results.

⁷⁰Schistosomiasis or Bilharzia is caused by a blood fluke, *Schistosoma sp.*, which enters the bloodstream in a larval stage through contact with stagnant, infested water; the intermediate host, or vector, which sheds the larvae into the water is a snail.

Amani at that time.⁷¹ And so, the description you've given of that Director struggling to justify [getting] grants was simply because people walked away and left him to sink. Whereas [thanks to] this Dutch concern to contribute in Amani, [...] the ambience that some of us Brits [*laughs*] could feel at home, [and allowed us] to carry on. I don't think any of us Brits, in fact I *know* none of us Brits, *could* have survived as well without the Dutch contingent, without Jan's special personal qualities, basically because we would have banged our heads with the system,⁷² while he had a certain aptitude for getting around it.

[*In the background, Jan agrees with some hesitation.*]

Graham: I would like to add a new way of talking, if I may, though, because it sort of comes out from what Alister was saying. I expect you've been told [that] every year some people came from London to *really* scrutinise what we were doing.⁷³ And there were very many small amusing stories about this: that the Director's teapot would be used when they came to tea at the homes of each of the expats that they visited, and so they would notice the same teapot each afternoon for tea. But the key point is that these were the top people from Britain, from MRC ...⁷⁴

[*others agree*]

Jan: There was Ford; and Spencer was in the end, always leading, and so on –⁷⁵

⁷¹*Graham notes:* The main character was Gerry Webbe. During our Amani period there were other transfers of Tanzanian staff between Mwanza and Amani, in both directions.

⁷²Presumably Graham means the East African political system.

Jan notes: To some extent, the Brits had more confrontation with the 'system', due to the colonial history.

⁷³*John notes:* Research staff were required to explain their work. During my early years in Amani, a small team of experts used to visit to evaluate our work. The group usually consisted of three individuals from the department of Official [sic!] Development Assistance (ODA), the London School of Tropical Medicine Research Board, the Nuffield Institute of Comparative Medicine, the Microbiological Research Establishment, etc. What I am not sure about is who they used to report back to. I seem to remember that they used to be referred to as 'The Circus' because they had a somewhat circular itinerary around various research institutes in Africa. [This appellation might also reference John Le Carré's popular Cold War espionage novels of the '60s and '70s, where insiders referred to a fictional British spy agency as 'The Circus'.]

⁷⁴*Jan notes:* But 'top people' in the sense of from an older generation, which restricted their insights into post-independence needs.

⁷⁵*John notes:* The people changed from year to year.

Jan notes: There was also Gordon Smith, for example, later Director of the LSHTM. Charles Edward Gordon Smith, 1924–1991, was dean of the LSHTM for nearly 20 years; he worked in the colonial medical service before returning to London in 1957 to join the School. His research involved leptospirosis, tropical diseases transmitted by mosquitoes, virus encephalitis, arboviruses, and tick-borne diseases of sheep. He was several times vice-president of the

Graham:

– [You were] always meeting with the London School and so on – and you really trembled at the, at the *inquisition* [others agree] they would give you on, on your science. Now, from that point, I want to say that we each had our own internal drive, what we were believing we were doing. I think this relates to the question that Wenzel put about motivation; if you're modest you can't really say, 'I was going to save Africa'. But the real point was that *each* of us *had* a discipline of some sort which we developed and applied. And then everybody understands how John stayed as long as he could; but then he just, was *uniquely* required, with the disciplines he'd developed, with his work on *Simulium*, to save⁷⁶ the huge West African programme that was failing to reach its objectives.⁷⁷ Because they *didn't* understand what he could figure out for them! So they basically *got* him! And although I was bit surprised yesterday, Jan, that you didn't seem quickly to recognize my point, I think the collaboration between Jan and some of the Brits, notably Alister, who chose to come out and to stay with us repeatedly, to develop the *application* of immunoassays.⁷⁸ So, Alister, everybody should recognize, has pioneered immunoassays better than anybody, and well, the two of them together [*pointing to Jan and Alister*]⁷⁹ figured out how to apply it. Which involved some *completely* impossible things, like importing *Aotus* monkeys from Colombia to have your standard antigen, for *P falciparum*, in those monkeys!⁸⁰

Zoological Society, as well as scientific adviser, trustee, and deputy chairman at the Wellcome Trust. See: <http://munksroll.rcplondon.ac.uk/Biography/Details/4107>, accessed 16 January 2016.

⁷⁶John notes: This is over the top. I would say I 'assisted' the West African programme.

⁷⁷The West African Onchocerciasis Control Programme (OCP), which started in 1975; see Boatman, B. (2008). The Onchocerciasis Control Programme in West Africa (OCP). *Annals of Tropical Medical Parasitology* 102 (Suppl 1): 13–7.

⁷⁸A general term for a diagnostic test, based on the chemical bond between an antibody, produced by an individual's immune system in response to alien cells, and those cells.

⁷⁹Graham notes: I was trying to throw a spotlight on how they clicked together so well for the development of malaria immunofluorescence assays, then ELISA tests. I now realise that my respect for Alister's role should be for his development of ELISA, not the invention of the process by Eva Engvall and Peter Perlmann in Stockholm; see Perlmann's obituary: 'The first investigators outside of the Perlmann laboratory, who showed an interest in ELISA, were the parasitologists. They had a need for a simple, robust and rapid test to diagnose disease in the laboratory and in the field...' (Peter Perlmann 1919–2005, *Scandinavian Journal of Immunology* 63: 487–489). That's how Alister moved ELISA into malariology with Jan at Amani. See Engvall, E. (2005). Perspective on the Historical Note on EIA/ELISA by Dr. R.M. Lequin. *Clinical Chemistry* 51(12): 2225.

⁸⁰'Night' monkeys of the genus *Aotus*, native to tropical South America, are one of the only primate species affected by the human malarial parasite *Plasmodium falciparum*.

Jan notes: We used *P fieldi* as antigen for our fluorescent antibody tests. *P falciparum* antigen would have been the preferred antigen – but clean *P falciparum* could not be obtained from patients. We tried! *Aotus* monkeys could be infected with *P falciparum*. They were imported as a potential means to acquire this antigen. But it did not work! (Presumably, that is, the researchers were attempting to develop immunofluorescence tests for *P falciparum* malaria – the most

I think most of us understand why that was *needed*. I mean, today if you try to put a Colombian monkey [on a plane], or do that kind of study of ...⁸¹

Alister: You'd be put in jail for that. [*laughter, agreement from others*]

Jan: Yeah, you really can't do that any longer.

Graham: Yeah. So the point I am making is about the tremendous tenacity each person had; to do what they believed was their calling in that scientific research; [and this], was *encouraged* by those visits every year by those top British experts and administrators. And we knew that – even if it only happened once a year, and we had to be careful how we justified it – we *believed*, each of us, that we had a line of inquiry. And then I pointed out to Jan what I believe, because I quote it often to the Americans: the work you [Jan] did demonstrated for the first time the interruption of [malaria] transmission with the lack of the antibodies, particularly in Zanzibar [*Jan: Ja*] – when we were debarred politically from ourselves doing fieldwork in Zanzibar – but Jan trained his team to *get* the samples, *bring* them back to Amani, and *run* them by the tests that Alister had invented. [*others agree throughout this*] And then, of course, Alister went on to help develop the entire ELISA traditions that are dominant in medical science today.⁸²

[*various others agree throughout this*]

So, without making any particular claims for myself, I was puzzling over the *Anopheles gambiae* complex;⁸³ and, jumping to the present, everything I did has so much value, which was still ahead of its time. [*Jan murmurs in agreement*] And Frances did much of it in the next generation, because she came a few years after I left. What we found out about the vectors, Africa is still trying to use. [*someone agrees in the background*] The information came from people like me and Frances, so far ahead of its time, that now they're all terribly happy to say they are pushing for malaria elimination in Africa, and then they're bumping into the questions for which we had provided

common type in Africa – using samples from the monkeys they infected, as they were having difficulty getting them from human patients.)

⁸¹*Alister notes:* It would be impossible.

⁸²ELISA (Enzyme-Linked Immunosorbent Assay) use enzymes as a diagnostic tool to highlight the presence of antigens (e.g. to pathogenic parasites) in an organic sample. They are cheaper and easier than their precursor immunofluorescence techniques, and are now widely used for diagnosis of infectious disease.

⁸³Several species of mosquitoes, including the most important vector of malaria in sub-Saharan Africa.

quite a few of the answers. And they're writing puzzling papers about 'How are we going to get around this, now that we recognise that that information applies to our challenge?'

So, I was doing the malaria vectors, and me and Frances decided it was fun to do the filariasis vectors at the same time; I mean, simultaneously; you can't work on malaria vectors without working on filariasis transmission, and that *still* is a message I preach every year to various groups who don't quite appreciate it.⁸⁴ So, whoever you pick upon ...⁸⁵ Even Tom⁸⁶, with his interesting differences; I do hope one day you [Wenzel] meet Tom Fletcher physically, before he is incapable of saying anything. And I think if Tom was a little abrupt with you, as I hear Alec Smith⁸⁷ was not very helpful when you spoke to him ... You still have to get *in* those people, even if they are a little old and crabby. [*laughter from others*] We know why, we know why they don't want to be here today. Even if you'd sent an ambulance with the nurse to bring them here, they would have said 'I'm not interested to be in this focus group.'⁸⁸

Jan and Alister:

Sure, yeah.

Frances:

I'm very interested in the talk about these annual visits from expatriates. Because – we didn't have them.

Frances:

From '73 on ... I came right at the end of '72.

Vyvienne:

But were you MRC money?

Frances:

No, but we *never had such visitors*.

⁸⁴Bancroftian filariasis is caused by the parasite *Wuchereria bancrofti*, which enters the human bloodstream in its larval stages through the bite of an infected mosquito; during advanced stages, the disease leads to extreme swellings of legs and scrotum (elephantiasis).

Graham notes: In tropical Africa, lymphatic filariasis is mostly transmitted by the same species of *Anopheles* mosquitoes that transmit malaria: so you find both filarial and malaria parasites in them. I was curious to make use of the filaria rates I saw; few other folks bothered to record them, since the priority was to study malaria. Elsewhere in the world, filariasis is usually transmitted by other kinds of mosquitoes (*Aedes*, *Culex*, *Mansonia*) so researchers on *Anopheles* do not look for filaria in them.

⁸⁵Possibly suggesting that all scientists at the time pursued valuable future-orientated research.

⁸⁶Fletcher; see note 30. *Jan notes:* But he was only involved with aspects of abnormal haemoglobin. This never produced anything. Tom left long before Frances came.

⁸⁷Born 1927, he served as Director of TPRI Arusha after having worked with the colonial medical research service in East Africa. From 1973 until his retirement in 1986 he served with the WHO studying malaria transmission. See <http://www.histmodbiomed.org/sites/default/files/44832.pdf>, accessed 29 March 2019. See his autobiography: Smith, A. (1993) *Insect Man: Fight against Malaria in Africa*; Oxford: Radcliffe Press.

⁸⁸During fieldwork preceding the reunion, several of the oldest former Amani staff members, who had been employed during colonial times, had been contacted by us, but had either been unwell, or not interested in pursuing memories of Amani or being interviewed. Whether this was because of their current life situation, or because of their particular relationship to Amani – or to successive younger generations of Amani staff – was not clear.



FIGURE 15A–C Frances Bushrod in the laboratory, with assistants and colleagues, and on a visit to one of the staff members in Amani’s staff settlement (personal collection, Francis Bushrod).

Alister: It was only if MRC was providing the funds.
Frances: We had Dr Kamunvi, he used to come, Doctor Kamunvi...⁸⁹
Vyviienne: Yeah, but if you didn’t have MRC money, you wouldn’t ...
Frances: ... who was General Secretary of the East African Community, I think?⁹⁰ And *he* was the one who used to come to our labs and say, ‘What are you doing?’

[Various cut in at once to explain or discuss]

Graham: It’s very simple, I think, Frances: you were led by John McMahon;⁹¹ that was a discrete MRC package.
Frances: Yes, that’s true.
Graham:

⁸⁹*John notes:* Dr Fabian Kamunvi, Secretary of the East African Medical Research Council.
Jan notes: Dr Kamunvi was a clinician, without research experience. He was one of the secretaries of the EAC Minister for Research, Communication and Social Services, Mr John Malecela. (For more on John Malecela and his daughter Mwele; see notes 190 and 191.) *Graham notes:* Dr Kamunvi was a former Professor at the University of Makerere. He came to Amani with his family and stayed in Lion Hill house. Hence I recall his children were homozygous sicklers [i. e., suffered from the genetic disease sickle cell anaemia, linked to malaria immunity] who depended on periodic blood exchange therapy. They were Ugandan citizens, but in those days we were all pulling together for East Africa! His capability as MRC Secretary helping our Institutes was cut short after General Idi Amin took power in Uganda.

⁹⁰In fact he was Secretary of the East African Medical Research Council (EA MRC).

⁹¹*Graham notes:* McMahon was hired by the UK MRC both to supervise the project Graham had designed on Bancroftian filariasis and also to oversee schistosomiasis research in Tanga (his speciality, having worked on the disease in Kenya). McMahon is credited with making the path breaking association between *Simulium* and crabs in schistosomiasis transmission, which is sometimes mistakenly attributed to Garnham. *John notes:* McMahon was Australian.

- And you had four entomology scientists and one medical leader of the project for five years.⁹² I kind of know this because I drafted the script for it right before I left.
- Frances:* Yes. Yes.
- Graham:* And then it took a *long* time before anyone put it into practice.⁹³ So the reason they didn't come and scrutinise that package: [it was] because they trusted John McMahon's judgment of how it was going.
- Frances:* Yes, but even so: The Institute as a whole got their annual visit from '73 on, to check *all* the labs.
- Graham:* Oh, they missed you, you mean?
- Frances:* [The one who used to come was] Doctor Kamunvi! A Tanzanian.⁹⁴ There, there weren't any ...
- Vyvienne:* But it is a financial ...?⁹⁵ [*others talk across her*]
- Frances:* ... any *visitations* from Western places to check what we were doing.⁹⁶
- Graham:* But don't you think John McMahon went on your behalf, and used it as the justification for a ticket home, to tell them?
- Frances:* But I was in Amani for four years, only one year in Tanga; so I would have known. I remember, the annual ...

⁹²*Graham notes:* These were: Frances Bushrod herself; Nils Kolstrup who focused on housing structure and endophilic mosquitoes; Franklin W Moshā (whose productive career continues – see many references in PubMed); and Saidi Ali Magayuka (a senior technician in the entomology laboratory at Amani from 1964 to 77 or 78). See ten resultant papers by John McMahon et al., cited in PubMed. One of the papers demonstrates how Nils worked up the broader principles, then pursued a conventional medical career as a GP in Norway, while the other researchers developed their specialisms through the project: McMahon J.E., Magayuka S.A., Kolstrup N., Moshā F.W., Bushrod F.M., Abaru, D.E., Bryan, J.H. (1981) Studies on the transmission and prevalence of Bancroftian filariasis in four coastal villages of Tanzania, *Annals of Tropical Medicine and Parasitology* 75(4): 415–31.

⁹³*Graham notes:* After my 1971 paper on filariasis vectors (White, G. (1971). Studies on transmission of Bancroftian filariasis in north-eastern Tanzania, *Transactions of the Royal Society of Tropical Medicine and Hygiene* 65: 819–829), I proposed a project for comparing interventions against filariasis in the big triangular area between Tanga, Muheza, and Pangani. My idea was to evaluate the impacts of chemotherapy, vector *Anopheles* control (adulticiding), vector *Culex* control (larviciding/sanitation), vector-proof housing, and combinations of these, for comparative cost-effectiveness. My aspiration was to get it funded after my move to Ethiopia, then return to do it. However, the UK MRC saw it as too ambitious; and they needed to replace Rikk Davies who was retiring from their schistosomiasis research laboratory at Tanga. So, they sent John McMahon to do both filariasis and schisto chemotherapy. He ran the village vector studies with a limited budget. (See Kolstrup, N., McMahon, J.E., Magayuka, S.A., Moshā, F.W., Bushrod, F.M., Bryan, J.H. (1981), Control measures against Bancroftian filariasis in coastal villages in Tanzania, *Annals of Tropical Medicine and Parasitology* 75(4): 433–51.)

⁹⁴In fact, Kamunvi was Ugandan.

⁹⁵*Vyvienne notes:* My question asks whether Dr Kamunvi's checks were from a financial or a scientific point of view? Because Frances may not have been concerned with or aware of the financial scrutiny. That's my best guess! Scientists rarely bother about the money!

⁹⁶The point Frances Bushrod seems to press home is that she recalled having been supervised and controlled by an African, not an elderly British academic – indicative of the changing times.

[various others cut in again, correcting her]

- Vyviennne: No, but it could have been financial ...
- Jan: [This is a] very interesting term: you said ‘discrete’;⁹⁷ and so [you mean that] McMahon was kind of discreetly pushing the Western interest in it.⁹⁸
- Frances: Possibly, but ...
- Jan: He was [doing that]. And I think that was the real problem when we were there. The African interest [by contrast] ... We, we didn’t recognize that; but I think many of our Africans friends there, they didn’t recognise that either: what [would have been] really needed at *that* time, at that stage, for making progress in *Africa* in the health field. In that, I think, we failed. Let’s say [*laughs*] where we failed, it’s in the ‘Africanization’; that if we had, how do we call it, the *insight*, we should have stimulated much more [the question of] ‘What’s the African ideas?’, and foster *African* ideas. Not that it would have been easy to get them, really, because most of our friends were trained in the Western ... were also thinking that the Western things were good. But let’s say ... when we were doing the ... bringing in the serology,⁹⁹ that was important, I think, to *start* something like that in Africa; OK, that’s true. But at the same time ..., I came in as a Director and I had no *clue* of what research was in Africa, what it should be about [...]. So we had to *start* somewhere and we started something about new ideas in, from Europe[...] – to start with, that would bring research. But I think if we had been better trained and better *prepared* for our jobs, we would have done things quite differently. And later, in later years, I’ve been *thinking* quite a lot about this. Because, I think, the, the serology in Africa was *nice*, that it happened was nice. But it didn’t really contribute much to the malaria situation, [in] any of the territories that we had. So: would that money and would that energy not have been better used to promote techniques and knowledge

⁹⁷Graham, above, used ‘discrete’ in the sense of ring-fenced funding; however, Jan picks up instead on the idea of ‘discreet’ in the sense of a tacit influence behind the scenes.

⁹⁸Jan notes: This is just my impression from the contents of this discussion. I was not in Amani at the time.

Graham notes: Jan misinterpreted my thinking about John McMahon’s liaison role with MRC, which justified the costly budget for the long-term filariasis projects; McMahon was a trusty MRC researcher for many years in several countries. His wife was also medically qualified and worked well in local clinics etc. Without intending to be derogatory, I felt that Jan had a tendency of questioning the motives of Brits – sometimes justifiable, but not always.

⁹⁹The study of serum and bodily fluids; here it refers to the types of diagnostic techniques the group mentioned as having been developed in Amani, particularly perhaps the immunofluorescence work, and subsequent work on ELISA (enzyme-linked immunosorbent assay) techniques.

- that was of direct ... that would have had direct impact on the health situation in the country?¹⁰⁰
- Graham:* No. No, you set a bar much *higher* than they can yet *use*. [*others agree*] You created the necessary knowledge and the ways of finding ...
- Jan:* Ja, ja, OK, but ... ¹⁰¹
- Graham:* And it is a very slow process, apparently, for all the African countries to tackle malaria. It's amazing in the past decade how much the Roll Back Malaria programme has really gotten rolling, and it's tremendous because – I'll speak from an American point of view – they implant their people working under what's called the President's Malaria Initiative, which is a billion dollars a year [*chuckles*] added to the Global Malaria Programme that is run out of Geneva.¹⁰² And the top entomologist in that global programme in Geneva is Abraham Mnzava, who grew up in Amani and in Muheza, and got promoted steadily to become the number one!¹⁰³

¹⁰⁰*John notes:* this was done earlier in the Pare-Taveta Malaria Scheme, 1954–59, and later with the chloroquinized salt scheme (in *Mto wa Mbu*).

¹⁰¹*Jan notes:* 'I still wonder.'

¹⁰²Graham is citing major US and multilateral programmes here. See <http://www.rollbackmalaria.org>, <http://www.pmi.gov/>, and http://www.who.int/malaria/about_us/en/, accessed 22 January 2016.

¹⁰³He became Coordinator of the Malaria Vector Control Unit within the WHO's Global Malaria Programme. *Graham notes:* Dr Abraham E.P. Mnzava must have retired in 2016 (aged 62) and lives in Arusha, Tanzania, ready for consultancy work on malaria elimination. He ranks high among successful Tanzanian careers (with 40 refereed publications in PubMed) thanks to the Amani traditions. His PhD project thanks the Amani Director for granting him permission to publish (Mnzava, A.E., Rwegoshora, R.T., Tanner, M., Curtis, C.F., Irare, S.G., (1993) The effects of house spraying with DDT or lambda-cyhalothrin against *Anopheles arabiensis* on measures of malarial morbidity in children in Tanzania, *Acta Tropica* 54(2): 141–51). That Director was Dr Sebastian Irare, who died from a heart attack while on duty travel, a dynamic leader and good manager; subsequent Amani Directors have been less successful. Dr Mnzava's PhD was awarded by the Swiss Tropical Institute, Basel. His project was also supported by the UK Medical Research Council (MRC); Dr Chris Curtis served as mentor for project design and analysis (*see note 146*); fieldwork was facilitated by Tony Wilkes; and insecticide and equipment were donated by ICI, facilitated by myself. Whereas Dr Mnzava's career thrived internationally, he broke his bonding for government service required in Tanzania after his scholarship; instead he went to work for the International Centre of Insect Physiology and Ecology (ICIPE) in Kenya, which helped many African entomologists to develop professionally with more scope for research and innovative application than contemporary university posts or government service. Mnzava then went to the WHO Eastern Mediterranean Regional Office in Cairo, then the WHO Global Malaria Programme in Geneva, and so he remained a 'wanted man' in Tanzania until Professor Kilama retired.

Graham notes: Jo Lines was Chris Curtis' first PhD student, who built an MRC home for himself at the Muheza/Ubwari Field Station, still the dwelling for successive researchers. He is now a Reader of Malaria Control and Vector Biology at the LSHTM. Tony and Dorothy Wilkes went on to replace Jo for several years in the MRC bungalow; then Caroline Maxwell served as MRC field programme manager there until Chris died. All were very well appreciated by the local community. PubMed lists seven papers authored by Curtis and Wilkes (1991–2006); 13 papers by Curtis, Lines et al. (1984–2005 with increasing proportion of African co-authors);

Jan: But, but being a pupil of Swellengrebel, who was a top malariologist from the – how do we call it – the League of Nations in those days,¹⁰⁴ I think I was taught that success in malaria control and malaria eradication was, in the end, [dependent on] the economic progress and the *social* progress in the country.

Vyvienne
[in the
background]: But surely, the two are linked...

Jan: And I should have kept *that* in mind, really, that it was not this high technology that should be there, but that we should have focused on the community aspects of malaria and do our research from there.

[commotion – various people start to respond]

Jan [answering someone – Ja, OK, but that's...

Graham? – in disagreement]:
Alister:

What I'd say is that those things that were being developed [by us] at that time have ultimately led to the malaria vaccines! And the DNA work now, today – it all was a logical progression from one to the other. And if you are just talking about increasing the whole, the economic output in Tanzania at that time, you know, that's a joke, quite honestly!

[laughter – various people agree]

Jan: No, no, I am not saying *that*, I am not saying that. I am saying ...¹⁰⁵

Alister: You have to make a *specific thing* and deal with it, and that was ... I mean, each of us has got our own capabilities! And

seven papers by Gillies and Wilkes (1963–1983); 21 papers by Curtis, Maxwell and African co-authors (1994–2008).

¹⁰⁴Nicolas Swellengrebel (1885–1970). According to a review of a 2011 biography, Swellengrebel was a founding father of malariology, who combined various disciplines of entomology, epidemiology and vector control in research in both the Dutch East Indies and in his native Holland, which led him to the insight that improved living conditions and economic development were the key to effective malaria control. During the major outbreak of malaria across Europe and America following the First World War, Swellengrebel was part of the League of Nations Malaria Commission. See Schiff, C. (2012) Review of *The Moses of Malaria* by Jan Peter Verhave (2011), *Bulletin of the History of Medicine* 86: 140–141.

¹⁰⁵*Jan notes:* I was saying it should have had a place within the framework of Ujamaa! *Ujamaa*, the Swahili for 'familyhood', was President Nyerere's progressive social and economic policy for post-independence Tanzania, and included an emphasis on education and the use of Swahili to foster a culture of collective responsibility, national unity and freedom from colonial authority. In particular, Jan may be referring to the use of villages as the basis for production, via a system of cooperatives based, in principle, on equality of opportunity and self-help.

- that was a way of increasing a *scientific* know-how there, and it spread out, *from* there. Right across Africa they use techniques like this today.¹⁰⁶
- Jan: Ja, they use techniques like this everywhere, but ...
- Alister: And finally it came to the immunoassays, which is now the dipstick, and that is used all over the world!¹⁰⁷ And so, you can't just say, you know, 'We can't have any high technology, we've got to increase the whole, the, the, the whole *economic* performance' – it doesn't work!¹⁰⁸
- Jan: I'm not saying that, I'm not saying that; but I think that the kind of work that we were doing was done already well in *your* labs, in Europe and in America. And ... I don't ... I wasn't *sure afterwards* if *that* was the thing we should have, at *that* stage, introduced in the research institutes in Africa. So if I had been better prepared, I think, I would have ...
- Alister: Yes, but ...
- Jan: ... followed a different policy.
- Alister: No, you're *wrong* there, because the same techniques were later used for AIDS all over Africa, *exactly* these techniques.¹⁰⁹ [*various people comment in agreement*] They became the standard techniques, and if they hadn't already

¹⁰⁶ *Alister notes*: That is, techniques like those we developed in Amani. Immunoassays, which are now used all over the world in rapid dipstick format, were developed from the early studies in Amani.

¹⁰⁷ *Graham notes*: For example Matola, Y., Habluetzel, A., Mkufya, A.R., Irare, S.G., Esposito, F. (1989) Introduction to, and evaluation of, immunoassays in a malaria research institute in Tanzania, *Transactions of the Royal Society of Tropical Medicine and Hygiene* 83 (Supplement): 99–100.

Sebastian Irare, MD, and Yohana Matola were respectively the first and second Tanzanian Directors of Amani. Among the other authors, Annette Habluetzel (Swiss) and Fulvio Esposito (Italian) were put in adjacent rooms in the Amani Rest House (this was Dr Irare's romantic intention, as he told me), where they fell in love and later married. Their successful family and careers would have delighted Dr Irare. They have 25 joint publications listed in PubMed. During the 1990s, Annette was jointly responsible for the WHO Special Programme for Research and Training in Tropical Diseases (TDR) multicentre trials of insecticide-treated bed nets, which led to the Roll Back Malaria Programme adoption of this valuable new intervention. Fulvio has been a Professor of Parasitology at Camerino University since 1987, working with the WHO TDR, the European Commission, and the Italian Ministry for Education, University and Research.

¹⁰⁸ *Alister notes*: If we had waited to introduce high technology in Africa until the whole economy was increased, it wouldn't work, and we would wait for ever!

¹⁰⁹ *Graham notes*: Though he refrains from bragging here, Alister was the key inventor and developer of successive immunoassays, which revolutionized medical diagnostics. Briefly: first fluorescent antibody test methods, then indirect haemagglutination test methods, then enzyme-linked immunosorbent assay (ELISA) methods, becoming a trillion-dollar industry. His periodic immersion in the needs and opportunities at Amani (thanks to Jan and his mentors like Joep Meuwissen at Nijmegen University) gave Alister the scope and motivation to transcend research into business. The inspiration came from Amani, by implication thanks to Jan and Matola and their enthusiastic team of locals.

Jan [still against various background comments]:

had been introduced to Africa, then ... Like this, already they were sensitised to be able to use those methods.¹¹⁰

OK, but now we start looking at things from a different point of view. I was later on teaching in Wageningen, at the agricultural university, and we started teaching health science there, because the agriculture experts – which we call ‘engineers’ in Holland – they were intent on improving the production in the countries where they were working, with the best techniques that were available, beautiful irrigation schemes, etc. But they had no *clue* what the side effects might be from it. And there were *huge* side effects: there was a lot of malaria, a lot of schistosomiasis going on, there were all kind of things. And then we came – not me, but people that were around me... We came to the conclusion that they should start training those engineers on the *health* impacts of it. And that means *community* health; so, that means that the – how do you call it? – the *activity* that you start, channelling, you should channel it into [a] much *broader* social perspective.

Vyviennne:

But shouldn’t they go together? Shouldn’t they ...¹¹¹

Jan:

Oh yes. That would be best, but ...

Vyviennne:

I mean, you know, it’s a feed-in loop, isn’t it? The social goes with knowledge, which means that the stuff [*addressing Alister*] you like, to put it bluntly [*laughs*], is the knowledge [*addressing Jan*] you need to inform your social, your social policy.

Jan:

I agree with that as well, but it is the *balance* that we should have, should have –

Alister:

But I think you take AIDS, for example; I mean, you could have as much sociology as you like about it, but if you don’t have a test to find out who’s got AIDS ...

Vyviennne:

Exactly.

Alister:

...it’s totally useless!

Various:

Yeah.

Vyviennne:

If you don’t know what causes malaria, you can’t control it, or any other disease.

[Various people speak in agreement in the background.]

Graham:

And that’s where ... I am really sort of energized by listening to Jan with his current self-doubts about the *achievements*

¹¹⁰Alister notes: That is, because they had already been used in an African setting, they were seen to be acceptable elsewhere in the developing world (presumably, by local health practitioners).

¹¹¹Vyviennne notes: Shouldn’t the consequences be considered before the activity takes place? Isn’t this what an administrator should do? This is difficult if you are a trained scientist – it is not what you are trained for after all. However, you should be able to advise and think of the problems.

that he led. Because it is true that most medics, especially as they get older, feel somehow that they've got to just be helping sick people, or communities or whatever. I think I see this often. [*various background comments continue*]

But the contributions that some, each of, the scientists in Amani have made, are *vastly* more valuable as times goes on. I suppose there were quite a few that were used in the end, but I'm suggesting that if you [Alister] are now modestly not bragging about the immunology you pioneered with a great range of back-up from Holland and England, you should! [*laughter*] And I do, often! Because in America they are still struggling to fill that gap, they spend their money through government programmes to do what you would classify as the 'operational implementation' and helping people as best they can. But they need the surveillance and the monitoring, which is, curiously, often missing out of aid packages. And, of course, missing out of local government budgets.¹¹²

Jan: No, but what I was trying to say is: I was sent there with a particular mission, and the mission was to run that institute and prepare it for the future, which was a different role as to the one that *you* had. *You* had roles to be good in your own fields, and to contribute as well as possible, so ...

Graham: There was no need for training Africans to identify *Anopheles*, if no-one out there was controlling it, yeah!

Jan: Ja.

[*others agree*]

Graham: There *was* no control until much later, decades later.¹¹³
Vyvienne [in the background]: But without the knowledge, you wouldn't have known what to control.

John: Oh yes. I think here, Graham, with his usual lucid summaries, and Alister's points also, do, to a large extent answer one of Wenzel's questions: to what extent is the work done at Amani relevant *only* to that area, and to what extent does it have a wider relevance? And I think you've *shown* that quite a lot of it is *pan-African* – with relevance all over. But I agree with Jan. Well, if I may quote BB Waddy^{114, 115}

¹¹²*Graham notes:* The new phase of the President's Malaria Initiative and Roll Back Malaria's Global Malaria Action Plan 2 (2014) put more emphasis on these strategic functions.

¹¹³*John notes:* But there *had* been control earlier.

¹¹⁴Dr Broughton Waddy, a British colonial doctor of Australian descent who spent most of his working life in the Gold Coast (present-day Ghana), and then Nigeria where he worked on the public health aspects of the damming of the Niger. He was an early researcher into onchocerciasis, arguing for recognition of the disease, which eventually resulted in the first British colonial control efforts in the 1950s. See a blog by his son at <http://www.aubreywaddy.co.uk/blog/files/archive-mar-2014.html>, accessed 22 January 2016; Olsen, J. and C. Florey (2007) *The development of modern*

one of the early onchocerciasis ... well, the one who initiated the Onchocerciasis Control Programme – he said: ‘the future of tropical medicine in Africa will depend less on elevated aspirations than on everyday practicalities.’ And I mean, there is a lot in that; if you can’t get carburetors for your Land Rovers, then you can’t do your fieldwork. But perhaps there are examples of what Jan is arguing; even in places where there’s been enormous success, I mean, some people find it difficult to understand for example, why it is, that in The Gambia, where they have more detailed information, medical statistics, than you have in the UK, why most of these [laughs] parasites are still around [there] and are being transmitted! I mean, obviously you do have to have some connection, with results leading up to control, even if they are not happening at the same time! I mean, ultimately, there has to be an implementation, and the utilisation.

Jan:

Ja.¹¹⁶

Alister:

I think [for this discussion] it is important to mention Harry Kortmann’s thesis, because this is a lovely example: *Malaria and Pregnancy*.¹¹⁷ Do you [Aleid, Kortmann’s widow] want to talk about it?

epidemiology: personal reports from those who were there, Vol I. Oxford: Oxford University Press, p. 299; and Patton, A. (1996) *Physicians, Colonial Racism, and Diaspora in West Africa*. Gainesville: University of Florida Press, p. 43.

Graham notes: The 1974–2002 Onchocerciasis Control Programme (OCP), which covered 15 countries in West Africa, was instigated by B.B. Waddy when he met Robert McNamara (President of World Bank) and persuaded him to fund the effort. John Raybould was recruited to run their vector *Simulium* lab. OCP success led to the African Program for Onchocerciasis Control (APOC), which switched from vector control by larviciding to treatment with Mectizan (ivermectin) for all cases, in all foci, of all endemic African countries. The range of the Mectizan Donation Programme (www.mectizan.org) has expanded incrementally to target other neglected tropical diseases (see <http://www.worldbank.org/en/news/feature/2014/07/03/forty-years-later-the-extraordinary-river-blindness-partnership-sets-its-sights-on-new-goals>, accessed 22 January 2016). Researchers from the programme jointly received the 2015 Nobel Prize for Medicine in recognition.

¹¹⁵*Vyviene notes:* I had never heard of this person.

¹¹⁶*Jan notes:* All of the above discussion should be understood in the context of the East African situation at the time.

¹¹⁷Completed in 1972. Graham has a copy of the thesis, complete with a covering letter sent to Graham by Kortmann in August 1972. Henri (known as Harry) Kortmann died unexpectedly aged 37, by then a father of four, the youngest of whom was born in Muheza in 1969, where the Kortmanns had moved in 1967 to pursue Kortmann’s research into malaria. The letter to Graham states his intention to return to clinical medicine in the near future; ‘I hope I have the strength to survive the new environment of a busy hospital again’. *Graham notes:* Harry Kortmann’s pioneering work on pregnancy and malaria, with emphasis on congenital malaria, was not published: his doctoral thesis reports comprehensive results for 1,009 deliveries. His death from undiagnosed cause was untimely. The only remaining papers are Matola, Y.G., Lelijveld, J., Kortmann, H.F., Meuwissen, J.H. (1973) The sensitivity of some human and simian Haemosporidial antigens to detect fluorescent antibodies against human *Plasmodia*, *East African Medical Journal* 50(6): 294–9; and Kortmann, H.F., Lelijveld, J., Ross, J.P., Löhr, K.F. (1971) A capillary tube agglutination test for malaria, *Bulletin of the World Health Organization* 45(6): 839–44.

- Aleid Kortmann:* No, no, no. I want you to! [*laughs, as do others*]
- Alister:* You don't want to talk about your husband! [*laughs*] But this was – Jan, you know – a *very* comprehensive study on this subject. [...] The results he found, the conclusions, are applicable all over Africa. [*several agree*] And that was a really good example, where ... and Harry was extremely good using the Africans, *with* the African technicians. I think he taught them an awful lot at the same time as he was doing that work. [*various agree throughout this statement*] I think that's an absolutely lovely example of what could be done there. And he was extremely sympathetic. And although some of this is quite technical stuff, he was *very* concerned with the health, the *immediate* health of the people there.
- Jan:* The immediate health. The clinical health. Ja. Ja.
- Alister:* He was treating them whenever necessary; they weren't seen as research subjects, they were seen as people. And I think that people like Harry doing this kind of work created a very good environment for doing things [research] in that area, because people respected it. [*others agree*] They saw there was some *immediate* feedback, as well as some academic papers, later on.
- Jan:* And I think they are saying, nowadays – though it's a long time between that publication and now – that all at once the interest in this field is *really* coming up at the moment.¹¹⁸
- Alister:* Exactly. My daughter is actually working on *exactly* this same subject,¹¹⁹ but for the Gates Foundation, right at this moment. She is actually working on the managerial side, but Gates have projects around the world on exactly this subject, malaria being one. Various other diseases of pregnancy, and newborn health. They have units in Nigeria, in Ethiopia – they don't have it in Amani unfortunately.
- Frances:* They did, in the early '70s, though.
- Alister:* Yes.
- Frances:* Because Daniel Abaru¹²⁰, the Ugandan medical doctor, did some work on that, together with some of *your* [*addressing Vyvienne*] technical staff, eh?
- Vyvienne:* Yeah, yeah.

Within the WHO archives, a Malaria Eradication Programme paper also remains, published with Jan Lelijveld Kortman, H. and J. Lelijveld (1969) 'The eosin colour test of Dill and Glazko: a simple field test to detect chloroquine in urine', *WHO/MAL/69.692*, available at http://apps.who.int/iris/bitstream/10665/65543/1/WHO_Mal_69.692.pdf, accessed 20 January 2016. This WHO/MAL series represented new trends in fieldwork deemed of interest to share as soon as possible, though potentially not yet ready to be formally published.

¹¹⁸*Jan notes:* Harry's work is being given increasing attention in recent years.

¹¹⁹*Alister notes:* I.e., diseases in pregnancy.

¹²⁰Abaru was a Ugandan MD, who came to Amani to work on the filariasis project, then returned to Uganda after EAC collapsed; see Abaru, D.E., McMahon, J.E., Marshall, T.F.

- Frances:* So it was continuing in Amani to a point, yeah.
- Alister:* Yes, that's true. And Herbert Gilles did something rather similar in West Africa, and the two go together. Fantastic bit of work, it was!¹²¹
- Wenzel:* This discussion among you about what should have been the priorities, or what might have been done better, we should come back to at the end of our conversation. In important ways, we still have these discussions about priorities today: 'Should we go for genome sequencing in Africa, or should we go for more basic tools'? But at the time, when you were together in the '60s in Amani, did you then discuss about, or wonder about these kind of priorities?

[Various respond with agreement and disagreement.]

- Jan:* No. I don't think. I can't say that we did [discuss] much.
- Vyvienne:* I was too busy doing the project. [*she and Frances laugh*]
- Graham:* I think we were pretty good at churning these discussions. You can tell that we were pretty well adapted to churning things between ourselves. So I guess we talked – as time went by, we talked about everything. Including [topics like] 'deforestation', and ...
- Jan:* Ja, deforestation. That was a very important thing we talked about.¹²²
- Graham:* ... road construction; and, I think we might have even been talking about climate change or something, so we did talk.

[Various respond in agreement.]

- Alister:* I think a lot of it was about whether Amani would survive.¹²³
- Jan:* Yes, what was his name? The French man, one of the earliest ecologists,¹²⁴ was very much in with the Mwalimu;¹²⁵ and he came to Amani and ...

et al. (1980). Tanzania filariasis project: studies on microfilaraemia and selected clinical manifestations of Bancroftian filariasis. *Acta Tropica* 37(1): 63–71.

¹²¹*Alister notes:* Both were, in both places!

¹²²*John notes:* Too much deforestation would have been potentially ecologically disastrous for an area with a unique flora and fauna; see papers by Moreau. (R.E. Moreau, secretary and librarian at Amani during the 1930s, presented a highly developed argument of how colonialism had destroyed ancient forest in the Usambaras and affected forest-dwelling communities; see Moreau, R. (1935) A synecological study of Usambara, Tanganyika Territory, with particular reference to birds, *Journal of Ecology* 23: 1–43; see also Conte, C.A. (2004) *Highland Sanctuary: environmental history in Tanzania's Usambara Mountains*; Athens, Ohio University Press, p. 93.

¹²³*Alister notes:* Because interest and funding were moving to other African sites which were more accessible and had better contact with institutions in Europe and the USA.

¹²⁴*John notes:* Jan is referring to René Dumont, who wrote 'False start in Africa'. Dumont, an agronomist, published this report in 1962 as *L'Afrique Noire est Mal Partie*, criticising African development policies. He blamed poverty in Africa not on unfavourable environmental conditions, as was the standard account at the time, but on the failures of colonial and postcolonial governments and agricultural management regimes. The controversial report inspired Nyerere's development strategies articulated in the 1967 Arusha Declaration. See Dumont, R. (1966).

- Graham:* I know, the agronomist, yes. I don't [remember the name].
- Jan:* And we had very much the problem with the illegal settlers, the illegal encroachment from the people into our land.
- Graham:* A point for this record [...]: you all know how people like us like to go to Amani. [*laughs slightly*] Any Western tourist, of the sort of sophisticated type, would *hear* about it and go there. And we *were* a magnet.¹²⁶ Now, the Rest House, because of the way it was maintained, was a magnet for the 'reasonable' intellectuals from 'down there' in Dar or Nairobi, to come and spend a happy weekend and be enthralled, and want to come back. So the point then becomes that, it was almost like a sport to see how much time you afford to spend *telling the stories* to them about the history and the functions of Amani.¹²⁷ Just like, I'm sure, you were all tuning in yesterday, when we were punting, to some of those semi-professional punters,¹²⁸ who were telling us all about how this was the only bridge that Oliver Cromwell didn't knock down and so on and so on!

[lots of laughter]

- Vyviene*
[agreeing]: Absolute rubbish!
- Graham:* So, so, every week in Amani we would have extraordinarily interesting people, who loved to be there and to talk to us; and we would therefore spontaneously be good at *debating* all these important issues.
- Alister:* I still think the single biggest thing was whether Amani would survive, wasn't it? That was on everybody's lips [*laughs*], every week almost! Because there were a lot of negative things in Amani. [People thought] it wouldn't make it.
- Frances:* Why, really, did people think it wouldn't make it? You see, me, coming in the ...

False Start in Africa. London: Andre Deutsch.

Graham notes: I remember his hurried visit to Amani, viewing the forest and horticulture but not much interested in our research; none of us were capable of conversing much in French about his passions. A 26-minute documentary film was made about him in 2001: *René Dumont: Global Ecologist* (https://www.nfb.ca/film/rene_dumont_global_ecologist, accessed 23 January 2016).

¹²⁵ 'Teacher' in Swahili, an honorific used to refer to President Nyerere.

¹²⁶ *Jan notes:* Yes, but only for Western visitors. Hardly ever Africans.

¹²⁷ Presumably Graham is referring to this contact with outsiders as an important way of conceiving of a purpose and future for Amani, even if this often involved a somewhat improvisatory representation of the institute and its intellectual and social life.

¹²⁸ A reference to a boat ('punt') tour of traditional riverside views of Cambridge, organised for the witness seminar participants the day before.

- Vyviennne: The '70s. It was in ...
- [Vyviennne and Frances narrating as one, here.]
- Frances: ... in the early '70s: we were in the period when all these [African staff] of whom Jan had said, 'these are really bright, these should get further training,' they were all coming back. And ...
- Vyviennne: We slotted in, wasn't it?¹²⁹ Yeah.
- Frances: ... we slotted in together so *well*. [*various people agree and offer comments*] There was never any, 'Oh, well, you know, you're an expatriate, we don't need you.' We worked wonderfully together with all these 'coming-back' [African] PhDs ...
- Vyviennne: Yeah.
- Frances: ... coming-back technicians, that is, that you [Jan] had identified as being people to train.
- Jan: Ja. And that's what I ... if try to justify what we were doing, that's very much the point. That we started creating a kind of *critical* mass that way: there were enough of them, at a certain moment, so that they could start *interacting* among themselves, *without* us kind of being, this, this kind of ... and *that* was the important part of the training.
- Frances: Yes. But also, they were working with us too. When I arrived, there were two trained technicians and one African scientist, and by the time I left, we had – we had only ...¹³⁰
- John: Yeah. Where did the money come from, then?
- Frances: What, *my* money?
- John: No, altogether, the whole place, to run it. Where did the money come from, at that point?
- Frances: The East African Community, at that point ...
- Vyviennne: The East African Community.
- Frances: ... but ...
- John: And it was still adequate, was it?
- Frances: Yes! Yes, sure! Well ...
- Vyviennne: I mean, we were, we were Crown Agency people,¹³¹ you know, which is ...
- Graham: But they were the recruiting agents *for* the Community.

¹²⁹ Vyviennne notes: When it came to the returning Africans, who had been trained abroad, we all got on very well and worked well together.

¹³⁰ Presumably, this was to be a comment about the replacement of expats with African staff by the time Frances left in 1977. In a subsequent discussion, she says that Katsuko and John Raybould were 'the only ones' remaining when she was there (they left in 1976).

¹³¹ Administrative body of the British Empire, under the Office of the Crown Agents in London, which after decolonization for some time served to channel development funds to former colonies (see Sunderland, D. (2007) *Managing British Colonial and Post-Colonial Development: The Crown Agents, 1914–1974*. Suffolk: Boydell and Brewer).

- Frances: Yes.
 Vyvienne: Yeah. They also paid part of our salary.
 Frances: But the East African Community was ...

[Various people are talking in the background.]

- Vyvienne: Yeah, and a big bonus at the end, which I also used for my deposit on my flat – yeah!¹³² [laughs, as do others]
 Jan: Tony would like to say something about it.
 Tony: Yes. You wanted some information about Amani, what it was like in those days, what we thought about: first of all, there were a lot of good people at Amani: there is Clyde, David Clyde;¹³³ Gerry Webbe;¹³⁴ Mick Gillies, who I got to know quite well. [Others agree] To work with such people was a tremendous bonus. When you are working with someone who is *good*, and you are working with them for years, it rubs off on you; you don't have to be clever, you just go along with it. And so, among people like that, a lot of conversations at *that* time took place around the coffee table, you know. Independence was coming; *what* would happen? [Others agree]

¹³²Vyvienne notes: We were talking about who paid our salaries. I was paid in Africa by the EAC (a basic higher technician's salary), but was also paid in the UK by the UK Government (tax free), plus a bonus when I left (tax-free).

Graham notes: I got no bonus or pension from my more than five years of working for the EAC at Amani. I saved almost £1,000 from my ODA (Official Development Assistance) top-up and used that to obtain a mortgage, supported by letter from the LSHTM saying my income was likely to progress on the academic scale (for my Wellcome Grant to investigate malaria vectors in Ethiopia, administered via the Ross Institute of Tropical Hygiene).

¹³³David Francis Clyde, 1925–2002, clinician and researcher in Tanzania from 1949 to 1966, after which he joined the University of Maryland School of Medicine where he continued to work on malaria therapies and prevention. He went on to work for Louisiana State University, the WHO, the Johns Hopkins School of Hygiene and Public Health, and the Center for Vaccine Development at the University of Maryland. See Clyde, D.F. (1962). *A history of the medical services of Tanganyika*. Dar es Salaam: Government Publishers. See Shiff, C. (2003). D.F. Clyde, 1925-2002. *Bulletin of the World Health Organization* 81(2): 149.

Graham notes: This book includes portraits of Msangi, Webbe and several African investigators whom they fostered, including Fabian Mzoo – later the lynchpin for a WHO mosquito control unit in Dar es Salaam.

¹³⁴Professor Gerald Webbe, 1929–99, Emeritus Professor of Applied Parasitology at the LSHTM, worked at Amani as an entomologist from 1952–59, studying various mosquito control problems and then moving onto schistosomiasis (Clyde, D.F. (1962). *A History of the Medical Services of Tanganyika*, Dar es Salaam: Government Publishers, p. 181).

Graham notes: Gerry Webbe transferred from Amani to EAMRI, Mwanza for continued work on schistosomiasis in 1959. He was very convivial with everyone and his career later culminated as Professor of Helminthology at the London School. See Bang, Y.H., Sabuni, I.B., Tonn, R.J. (1975) Integrated control of urban mosquitoes in Dar es Salaam using community sanitation supplemented by larviciding, *East African Medical Journal* 52(10): 578–88. Herbert Kingazi, initially a Malaria Assistant at Amani who became a Malaria Field Officer, went to the Mwanza institute with Gerry Webbe, as did Vincent Eyakuze, who later became its first Tanzanian Director. (For Webbe and Kingazi's work see: Clyde, D.F. (1962). *A history of the medical services of Tanganyika*, Dar es Salaam: Government Publishers, pp. 181–2.



FIGURE 16A Library coffee round with Tom Fletcher and Agnes Gillies on the left (possibly Maintenance Officer John Carlin on the right), late 1950s or 1960 (personal collection, John Raybould). FIGURE 16B: Donald Bagster-Wilson with his daughter on a fishing trip near Amani, early 1950s (personal collection, Sylvia Emmanuel née Bagster-Wilson).

Vyviennne: Yes. In the library.¹³⁵ [*Frances makes agreeing noises*]
Tony: ‘How much will we get?’ There was a lot of money in it, you know, because ...¹³⁶ And so, ‘What will it be like? They

¹³⁵Coffee in the library was apparently a fixture of Amani social life, formalised by a small contribution from participants, which continued into the 1970s.

¹³⁶Tony might be referring here to speculations about the often considerable payouts that the older generation of staff, who had been employed on colonial terms, received upon independence.

won't be able to do the jobs *themselves*.' And we were able to see, 25 years later, what *had* gone on.

And also, Graham was talking about the people who would visit every year: you had an annual visit by people like Garnham,¹³⁷ George Macdonald,¹³⁸ Woodruff,¹³⁹ and, er ...¹⁴⁰

Jan: Lewthwaite.¹⁴¹

Tony: Actually ... [*various comments of recognition; these obscure his anecdote*] Lewthwaite used to fall asleep if you [*unclear*]! On his feet! [*laughter*]

And I seem to remember Mick Gillies, who was a real practical joker, got up to some *evil* tricks [*with these visitors*]!

¹³⁷ See note 6.

¹³⁸ George Macdonald, 1938–1977, was an eminent malariologist noted for his work on the mathematical modelling of the epidemiology of malaria and other vector-borne diseases. After an early career in India and the Middle East he joined the University of London in 1946 and then the WHO in 1948, leading the WHO mission to Korea in 1952. In 1964 he applied his mathematical epidemiological analysis of malaria to schistosomiasis. See [http://archives.wellcome-library.org/Dserve/dserve.exe?dsqIni=Dserve.ini&dsqApp=Archive&dsqCmd=Show.tcl&dsqDb=Catalog&dsqPos=78&dsqSearch=\(Sees_guides_used%3D%27Africa%3A%20East%20Africa%27\)](http://archives.wellcome-library.org/Dserve/dserve.exe?dsqIni=Dserve.ini&dsqApp=Archive&dsqCmd=Show.tcl&dsqDb=Catalog&dsqPos=78&dsqSearch=(Sees_guides_used%3D%27Africa%3A%20East%20Africa%27)), accessed 13 January 2016.

¹³⁹ Alan Waller Woodruff, 1916–92, served in the army in India and Burma, then joined the LSHTM in 1948. In 1952–71 he held the Wellcome Chair of Clinical Tropical Medicine. His research covered tropical sprue, anaemias of pregnancy, protein malnutrition, and diseases linked to dog faeces. He acted as an honorary consultant to the British Army and to British Airways for many years, travelling widely and serving on MRC and WHO committees. Immediately after retiring from the LSHTM he travelled to the Sudan, taking on a commitment to support the University of Juba as a Professor of Medicine. He worked there until his death in 1992, maintaining his commitment to undergraduate teaching even after his department was transferred to Khartoum due to civil unrest. See <http://www.independent.co.uk/news/people/obituary-professor-alan-woodruff-1559316.html>, accessed 13 January 2016.

¹⁴⁰ *John notes*: Also L.G. Goodwin, C.E. Gordon Smith, George Nelson, Hugh Jolly. (Leonard George Goodwin, 1915–2008, pharmacologist and medical protozoologist; he worked at the Wellcome Bureau for Scientific Research from 1939 and visited Africa multiple times to test drugs for various tropical diseases. He was head of the Wellcome Laboratories of Tropical Medicine from 1958–1964, then Director of the Nuffield Institute of Comparative Medicine at the Zoological Society of London until 1980. His major achievements included establishing drugs to treat leishmaniasis, malaria, ascariasis, ankylostomiasis, and trypanosomiasis. See: Goldman L, et al. (eds), 2013, *Dictionary of National Biography 2005–2008*; Oxford University Press, Oxford; pp. 442–3.

See note 76 for details of CE Gordon Smith, and note 5 for details of George Nelson.

Hugh Jolly, 1918–1986, a paediatrician, championed various pioneering developments in the treatment of children in hospital in the UK and around the world, travelling widely, and drawing on and developing a vast range of approaches. See: <http://munksroll.rplondon.ac.uk/Biography/Details/2454>, accessed 16th January 2016.)

¹⁴¹ *Graham notes*: Dr Raymond Lewthwaite (1894–1972), our patron at the Ministry of Overseas Development and the Medical Research Council (see Greenwood, D. (2008) *Antimicrobial drugs: chronicle of a twentieth-century medical triumph*. Oxford University Press, Oxford; p.221). Lewthwaite had worked in Malaya since 1926 and was the field director of the MRC's scrub typhus campaign in south-east Asia towards the end of the Second World War, discovering a cure using chloramphenicol in the late 1940s. A 2003 post on Ancestry.com by his grandson details Lewthwaite's earlier service in the Border Regiment in India in the First World War; the National Portrait Gallery has a 1950 portrait of him by Elliott and Fry.



FIGURE 17: Mick Gillies dissecting a Gabon viper in his garden, late 1950s (personal collection, John Raybould).

Because one night we were going to the *Boma*,¹⁴² and it was a night when we all sit round that very big table [*sounds of recognition from Jan*], you know, and you have the best wine. And, having talked about this, that and the other, Mick Gillies on arrival had got each of the wives of people to change. So that they went in as, odd couples, everyone [*Laughter. Vyvienne comments appreciatively*] ‘This is Mrs Rooks, and she’s going in with ...’ And you could see, they were all confused. [*general laughter*] Which Gillies thought it was marvellous.¹⁴³

Dorothy Wilkes:

And he did this more often – in Gambia he did it, didn’t he? Oh, God.

Jan:

Tony:

Yes. So, I can go on forever. But the thing is, coming back, after all the years,¹⁴⁴ and seeing what had happened, you *do* see progress, but you do see Amani going, well, downhill. [*others agree*] Things are happening which aren’t *right*. [*others murmur in agreement*] And it was only by working with Chris Curtis,¹⁴⁵ who, who sent me out to Africa, where we saw some things happening which are proving to

¹⁴²The Director’s Residence at the apex of Amani hill.

¹⁴³See Gillies, M. (2000) *Mayfly on the Stream of Time: a medical naturalist’s life*. Whitefield: Message Books, for more details on practical jokes at Amani.

¹⁴⁴Tony is presumably referring to a visit he made to Amani in the early 2000s.

¹⁴⁵Professor Chris Curtis, 1939–2008; entomologist. See Watts, G. (2008) C.F. Curtis. *The Lancet* 371(June 21): 2080.

Graham notes: Professor Chris Curtis, 1939–2008, an entomologist of worldwide importance who became a major champion of low-cost, easily applicable approaches to malaria control such as insecticide-treated nets. He was MRC External Staff Entomologist at the LSHTM from 1975 until his sudden death in 2008. He had vast influence as a teacher; he was invariably straightforward, never over-elaborate; he was always the sceptical scientist, rigorous and careful; he had a luminous integrity, and was modest, careful to give the primary credit to his collaborators, assistants and field teams. MRC grants allowed him to reinvigorate research on malaria vectors at the Muheza/Ubwari Field Station. He was the most conducive collaborator with new generation African researchers at Amani/Muheza, and for NIMR generally, from 1981 until his sudden death.

be of great value – impregnated bed nets, which now of course play a *major* part in containing malaria. [*Others: Yes.*] And ... *these* are the things which people like Chris, Chris Curtis and Jo Lines [did]¹⁴⁶ A lot of *very* good work was done in The Gambia ... So, I look back with some pride for being *involved*. I mean, Mick Gillies was talking about the mosquito behaviour unit¹⁴⁷ *here* at Amani when his term had finished at Amani: ‘Let’s get an MRC grant.’ We went to Sussex University, and we were together for 25 years, you know! [*others agree*] Takes some doing, that, I can tell you!

[*A background conversation takes place at this point between Graham, Frances and Vyvienne, returning to the subject of external supervision of such grants. Most is unclear, except:*]

Frances: And of course we had George Nelson, you know, it wasn’t ... [*gestures with hand on table, implying strictness*] ... it was one or two ...

Vyvienne: It sounds as if you were shielded from the MRC visits. A bit.
Frances [in agreement]: Mm.

Tony [continues]: But I learnt so much, and had so much satisfaction, to be involved in it [*others murmur in agreement*], working a lot in The Gambia, which was really good.¹⁴⁸ So, I don’t know, there’s ... And what *you* [Graham] were saying earlier on [*is right*], about people doing things, it eventually comes to fruition. [*E.g.*] I learned the other day that Guinea worms are almost finished – almost eradicated. You see?

Graham: Five hundred cases, last year.¹⁴⁹ [*others agree*]

Tony: Yup. So: things are happening. Malaria? One day; not in *all* our time; maybe some of the young chaps here will be [still

¹⁴⁶Jo Lines, Professor of malaria and epidemiology at the London School of Hygiene, worked in the 1980s, together with Lyimo, Magesa and others, on insecticide treated materials and bed nets in a research programme based in Muheza, in the plains below Amani, which was co-ordinated from the London School. See <https://www.lshtm.ac.uk/aboutus/people/lines,jo>, accessed 15 January 2018.

¹⁴⁷Presumably referring to the Mosquito Behavioural Programme established at Sussex University after Gillies’ departure from Amani. See: <http://www.sussex.ac.uk/internal/bulletin/downloads/1970-1979/1979/October/19791030.pdf>, accessed 1 December 2017.

¹⁴⁸*Graham notes:* Tony had more status and respect working with Gillies in The Gambia (1960s–70s) than during his two stints in Tanzania (pre-independence as field officer with Gillies, then in the 1980s–90s as a field manager for Curtis – after Jo Lines, overlapping with Caroline Maxwell as noted above).

¹⁴⁹*Graham notes:* The eradication of the guinea worm is imminent: there were fewer than 20 scattered cases in Africa in 2015, and only 124 in 2014, down from 3.5 million in 1985 across Asia and Africa. See http://www.cartercenter.org/health/guinea_worm/index.htm, accessed 23 January 2016.

alive when] we can use the word ‘eradicated’. Not yet, not for a few years, but ...

Jan: Controlled. [*others agree*]

Tony: It will come, it will come. These things have happened in places like Amani ... it’s just, you’ve seen those names at Amani, the people who were there. David Clyde; Gerry Webbe; and you’ve spoken to them daily – and they *taught* you things.

Dorothy: Bagster.

Tony: Bagster was in the background, of course. And there were so many people *visiting* as well, and so it was so *worthwhile*. That’s the point I would like to put into the note [the transcript].

[*A couple of people agree.*]

John: What we began in Amani was, for us, in some ways ... the sort of thing I was doing anyway. It was a test bed. Because you had ... we could do things in the African environment, the whole intent was to see if we could do things that could *then* be extrapolated to other places. It wasn’t specifically for Amani. Amani was very convenient, because Jan¹⁵⁰ had a nice outfit running there, but the main point was to develop things that could then be extrapolated globally.

Alister: The first part ... We had a technique, I won’t go into details, but then we came with another one, I came down there with a Swedish lady – not my wife; a different one [*laughter*] – and she developed this technique in Stockholm where you ended up with colours, and you could tell whether there was a disease in the person or not. And we came to Amani and we used her technique, and it was *totally* hopeless, it *totally* failed, you could say, because the thing took two days, and it was just not suitable at all for the African environment. And we learnt from that, and went back to my lab, and we reformulated this whole thing, and changed it to a 30-minute test. And that took off: a 30-minute test where you could do a number of tests at the same time, you could do 12 or 96 at the same time. And that spread in ... as I was telling somebody earlier, five years later between 1980 and ’85, there were 40,000 papers published on that method. [*Others: Yes.*] And the year after and the next five years there was over 40,000; and it’s used in *every* country in the world, *every* single lab; and it all came from learning, from work in Amani.

¹⁵⁰ John notes: And the earlier Directors.

[*Others agree, comment at once...*]

Jan: And so Amani ... it was a *real* scientific institute in the *Popperian*¹⁵¹ kind of sense: that you *falsify* the hypothesis [*others chuckle, agree*] [...] striving, developing new

[*Various others comment in agreement.*]

Tony: But that's how science works, isn't it?

Alister: That's how it works, yes!

Tony: Exactly!

Jan: It *should* work that way, but [*others agree*] – ultimately –

Alister: You don't try and, sort of, cover up for it ...

Jan [agreeing]: No.

Alister: ... and say, 'This is wonderful' when it isn't, you know. If things didn't work then you've got to find a way round it.

Tony: And it is things like this that sort of go wrong, lead you on to the result.

Alister: Exactly, yes.

[*Various others offer noises of agreement*]

Graham: Yeah, at any given time you would normally find one or two *extremely* important international people, who had decided to come to Amani and *do* some work because the facilities could be, could be an underlying strength. [*others agreeing*]

Jan: [We had] people from German universities etc., from Tübingen, and ... Ja.

Graham: An amusing conversation I had once with Manson-Barr, Clinton Manson-Bahr¹⁵² [*others comment in recognition*] Everybody sort of understands the central importance of the Manson tradition – and Clinton Manson-Bahr *loved* to get out into the field.

¹⁵¹Karl Popper, 1902–1994, philosopher and champion of the concept of empirical falsification of hypotheses in the scientific method.

¹⁵²*Graham notes:* Dr PE Clinton Manson-Bahr (1911–1996), son of Sir Philip Manson-Bahr (1881–1966) who married the daughter of Sir Patrick Manson (1844–1922), founder of Tropical Medicine. Manson published the first *Textbook of Tropical Diseases* (1898) which became the bible of tropical medicine. Revised editions continue to appear, edited by Sir Philip up to the 16th edition (1966), then edited by Clinton (who got me doing several Chapters), up to the current 23rd edition (2014) by a syndicate of editors and authors. Manson is synonymous with Tropical Disease, and Clinton was larger than life. His earlier career was in Kenya; he loved dragging everyone into finding materials to augment the *Textbook*. Clinton's main objective coming to Amani at that time was to look for locals with double infections of onchocerciasis (river blindness, transmitted by *Simulium* up in the Usambaras) and lymphatic filariasis (elephantiasis, transmitted by mosquitoes in the lowlands); he failed to find anyone with both parasites. Villagers and clinics throughout the area were delighted with all the extra surveys, diagnoses and treatments engendered by Clinton's passionate curiosity.

[others agree]

- Jan: Oh yes. I went with him – into the field a lot with him, yes, ja.
 Graham: ... but, but he came for a year, didn't he? But at that time it was decided that some of the projects he needed to do would be based in Tanga. So in fact, in a way he was the first person to say, 'I won't bother to live in Amani, although I am glad to be part of the system; I'll live in Tanga.' And I always remember [laughs]: because the projects he was doing were the kind of mopping-up for his book, that he really needed time out there – and one of them was to go in the Amboni caves and catch bats!¹⁵³ [general laughter] Yeah, and always ...

[Various agree and laugh, remembering.]

- Jan: Yes, for rabies ... [laughing]
 Graham: It was a very unique experience to wave a bat net in a big cave!
 Jan: ... the risks!

[Vyvienne starts commenting about the bats and conversing with Frances in the background: Oh, the bats in the – yeah! – I've been shown – yes, yes – he was working – you would watch it, and I had to ... ¹⁵⁴]

- Graham: But, but the point is, his *wife* was truly old colonial Kenyan mentality. And she would wait for him to come back from these weird expeditions covered in bat excrement and so on, [various laugh], and she would talk to my wife who was busily, happily kind of keeping her reasonably pacified, and she would say things like [adopting a caricatural upper-class British accent]: 'Course, the *best* thing about being based in Tanga: it's not too far from *Mombasa!*' [everyone laughs]
 Jan: Exactly, exactly! By the way, that Mombasa outfit was run by Rikk Davies, you remember? [others make agreeing noises] Rikk Davies died recently; ja. [noises of surprise] Yes ... ¹⁵⁵

¹⁵³Jan notes: Most likely rabies research, the Mokola version if I am right.

John notes: I think Manson-Bahr and Graham spent a day in the caves. Manson-Bahr examined bat guano in Amboni caves near Tanga because he was interested in a fungal infection known as histoplasmosis, caused by a species of *Histoplasma*. The fungus infects animals and is common in bats, and the infection is sometimes known as 'cave disease'. The bats pass out the fungal spores and people become infected by inhaling the spores when they enter the caves and disturb the guano.

¹⁵⁴Vyvienne notes: Neither of us worked on this project; these were recollections about bats in the library, and in the toilets!

¹⁵⁵Dr Andrew (Rikk) Davis, a pioneer of schistosomiasis treatment, who died in 2013. He worked on the clinical pharmacology of schistosomicidal drugs and was made Director of the WHO/MRC/Tanganyika Government Bilharziasis Chemotherapy Centre at Tanga (not Mombasa – Jan later corrected this) in 1962. He went to work for the MRC in Jamaica in 1971

- Wenzel:* Going back to the discussion you had about research priorities: were there any African contributions to these discussions about *what* to do research on, you know, and *where* you were heading at the time?
- Frances:* Certainly, by the time *I* was there; but of course that's a little bit later, that's when all these highly trained Africans were coming back.
- Wenzel:* Right, and what were ... what was the thrust of their [contribution]?
- Frances:* The main thing was, you could come back a highly trained African with a master's, a PhD; but you *really needed* to work with someone that had been working a little bit, to *really* know what the priorities are. Now, when I first arrived in Amani, I was in the position of [having] these trained Africans coming back, and really the first thing I did was write to Graham and say 'What do you think is the most important thing they should be working on?' So by the time the ... the Kilonzos and the Moshas,¹⁵⁶ and the whatever ... arrived, we could discuss it in the same way with them. You know, you can have brilliant training, but you're a bit unsure about what's the main thing to work on once you get to your new working environment.
- John:* Yes, I mean there was one example where I think it's probably true to say virtually none of these good things *did* happen, and that was in chemistry. I mean ... er, after I don't know how many years of relatively frenetic activity, the productivity was precisely *nil*.¹⁵⁷ And I think part of the problem was that the African scientist there, was in a lab, [that was] run by somebody who *wasn't* the easiest person to communicate with.¹⁵⁸ And he was on his own, eventually, without *detailed* experience, and with nobody else to consult. And so ...

and then joined the WHO in Geneva, where he worked on the control of schistosomiasis and other tropical parasitic diseases until his retirement in 1989. See: http://www3.imperial.ac.uk/newsandeventspggrp/imperialcollege/centres/sci/newssummary/news_17-1-2013-11-55-45, accessed 16 January 2016. According to Graham, he was replaced in Tanga by John McMahon (*see note 92*).

¹⁵⁶Professor Bukheti Swalehe Kilonzo, born 1949, joined Amani in 1968 as a Scientific Assistant, and left Amani in 1982 as Research Scientist and became professor at Sokoine University. He established plague research at Amani; see e.g., Kilonzo, B. S. and J. I. K. Mhina (1982). The first outbreak of human plague in Lushoto district, north-east Tanzania. *Transactions of the Royal Society of Tropical Medicine and Hygiene* 76(2): 172–177.

Professor Franklin Masha, born 1946, joined Amani in 1973 as Research Officer, and left in 1978, becoming professor at Kilimanjaro Christian Medical University College. His original research was mainly on bancroftian filariasis, and he contributed to numerous publications on malaria and filariasis entomology; see, e.g., Masha, F.W. and V. Petrarca (1983). Ecological studies on *Anopheles gambiae* complex sibling species on the Kenya coast. *Transactions of the Royal Society of Tropical Medicine and Hygiene* 77(3): 344–345.

¹⁵⁷*John notes:* Or, minimal.

¹⁵⁸A reference to Tom Fletcher.



FIGURE 18: Francis Bushrod with two colleagues, early 1970s (personal collection, Francis Bushrod).

Frances:

Yes, that's right. [xxx].¹⁵⁹ He trained, but ...

Graham:

[xxx], who [...] did become the next Director after [yyy]... [*in response to someone*]: Yes, [yyy] didn't do it very well. [yyy] got a bit too arrogant with it, and then [xxx] went to the other extreme, and didn't really *bother* to do it. [*Frances protests in the background.*] But as a scientist he picked some losing questions like: 'Can you make insecticide out of orange peel?' It's a very well-known thing in the literature that there are toxins and essential oils in orange peel, and in most plants, that can be useful pharmacologically or insecticidally; but he couldn't handle it, that's really the point. He... his intellectual ceiling was about capable of squeezing orange juice. [*Someone laughs. Others protest*] And after that, writing a few reports about whether the larvae died and so on. So, we can't expect every *one* of them to be a winner! And I think ...

[*Several people start to respond.*]

Frances:

I think that's unfair! [*Jan is speaking in the background, inaudibly*] [xxx] was my neighbour. He came back from [training in] Eastern Europe, and I think he was very

¹⁵⁹Here and in the subsequent exchange, names of living people have been omitted.

- bright! But he *didn't* know what to work on. [John murmurs in agreement] And there was absolutely *nobody* in his field around who could really guide him.¹⁶⁰
- John: That's right, I mean he did ...
- Jan: [agreeing] [xxx], yeah.
- Frances: Yeah! He played a good hand of bridge, as well! [Vyvienne laughs]
- John: He did try at one time to extract chemicals – for attracting crabs into my traps.
- Vyvienne: He certainly did, mmm [agreeing].
- John: Now, in a certain sense, I suppose that was logical, but it didn't really fit the requirement, because all you had to do, really, to attract a lot of crabs was to get that fruit, *Artocarpus integrifolia*, the jackfruit [others laugh in recognition], and it worked perfectly well! So I mean, there wasn't a *need* for detailed studies, extracting something special. But, actually, going on from here ... [I am] fascinated and enormously impressed by the conversation that's gone on so far: but at this point I'm just wondering where to go from here. Because, well, ever since *I* arrived in about 1960, a similar question was asked, 'Where should Amani go from here?' And one of the subjects before us is, you know, what can be done about Amani, what *is* its future, and how do we define Amani? I mean if Amani slides down the hill, which is what it has done – mostly to Tanga, but partly to Muheza – and the work continues there: is *that* Amani, in the sense that the work is being fully *continued*? Or do we need to come up with ideas for the future of Amani *per se*, in the forest, at the *top* of the mountain? Where they are carefully maintaining the campus, if that's the right word. I mean, they're trimming the bushes beautifully, and cutting the grass energetically, and are looking after the experimental animals very carefully, [even though] there are no experiments going on, and all the labs are empty!
- Vyvienne: What a shame.
- John: So, I mean, you know, do we need to *merely* think in terms of the future of tropical medicine, and Amani in the *broad* sense of the work done in that area, being useful? Or, or do we need to ...
- Graham: Well, we all recognise that it's time for a big transition, and it's a pretty difficult challenge for any of *us* to say what that should be, though we can each come up with our favourite suggestion. Like, obviously, for the past decade, it was sort

¹⁶⁰Jan notes: Tom Fletcher totally undermined [xxx]'s self-confidence. The result was a lost soul, scientifically at least.



FIGURE 19: John Raybould and a group of researchers and assistants, early 1960s (personal collection, John Raybould).

of *assumed* that it would become a major centre of co-ordination of [the] forestry reserve, [...] which is a curious reflection of how the Germans saw it in the first place. [Vyvienne: Yes!] But it clearly isn't likely to be useful major research centre for *medicine*, unless it's altitude sickness or something.

Frances:

Yes, sure. [*she and Vyvienne giggle*¹⁶¹]

Graham:

And I feel that we *can* perhaps, through this project, help to put our own collective influence into motivating a proper *search* for the right people to *adopt* the place, and make sure it doesn't get desecrated. [*various agree*] There's always that tendency for *erosion* of the forest, *erosion* of the culture. I think it's very easy to salvage it, if you find the right new group to move into it. And so we ...

John:

I'm not sure it should be a scientific group;¹⁶² it may well be a commercial operation now [*various agree*], because ... if you are going to Malaysia or a number of ...

Wenzel:

Sorry to cut you short, but I think we should take that question about the future maybe in the end, [and for now] stay a little bit with the '60s, if you don't mind. It's an important question that I think we should get back to in the end; I will keep it for then.

Graham:

So let me then add, just for an extra snippet that came to my mind now: I spoke about Manson-Bahr; most of us have some respect for his hugely enthusiastic way of jumping into things with both feet. One of his projects, so beautifully pitched, so typical of what you can get done in that area, with those people: his question, which he needed to tidy up for the great book: when you are transitioning up the hill from the filariasis, lymphatic filariasis, *down there*, to the

¹⁶¹ Vyvienne notes: Frances had altitude sickness as soon as she arrived in Amani.

¹⁶² John notes: Not necessarily, that is.

- oncho *up here*, are there people who may be going to get both diseases? [*others make sounds of agreement*] And I don't know if you were involved, John, in helping to do the snipping and blooding to find out the answer. But the answer was rather sad really [*laughs*]; well, there *aren't* many people who were living in both places! [*laughter*] So you don't ... he couldn't find double infections.¹⁶³ [*appreciative agreement noises*]
- Frances: There were of course people with [both] these diseases; because when you give them, when *we* used to give them diethylcarbamazine, if you had onchocerciasis, then aaaaargh... [*noise to illustrate things going wrong*]¹⁶⁴
- Jan: It grows like mad!¹⁶⁵
- Frances: – even when you had filariasis.¹⁶⁶ [*laughs*]
- Graham: Okay, well, let's agree that that was a beautiful, well-pitched [study] – by one the world's great knowledgeable guys; that he *wanted* to be in Amani and *keep* expanding its horizons by doing that study. [*agreement from others*]
- Jan: Ja, but then it showed also very much the thing in *my* remembrance of Manson-Bahr: [it] is when I started working in Kenya,¹⁶⁷ and in our area you could do these things: and we had discovered that there was kala-azar¹⁶⁸ around there. And so now Manson-Bahr jumped into the kala-azar situation and started a *big* survey. So I was very happy because it was taken out of my mission, to go on, on survey! But then I think we *did* do the most ... let's say, *irresponsible* ways of doing, of doing surveys. [*laughs slightly*] We did *milt* [Dutch: spleen] punctures ... *spleen* punctures in the *field*!
- Vyviienne: Oh!!
- Jan: On *large* groups of women!
- Frances: Oh! [*Various others react with shock and amusement*]

¹⁶³ *John notes*: There were some, but few. In the 1971 Amani Annual Report there is a small section by Manson-Bahr, Chintawi and Raybould, referring to the suggestion that an infection with either *Onchocerca volvulus* (river blindness) or *Wuchereria bancrofti* (lymphatic filariasis) might render the host immune to subsequent infection with the other. In order to test this possibility, an investigation was carried out at Amani and in two villages at lower altitudes in the Eastern Usambaras. The results showed that double infections do occur. They indicate, therefore, that neither filaria parasite gives complete protection from subsequent infection with the other. More detailed investigations would be required to determine whether infection with one of the two parasites reduces the frequency or intensity (or both) of infection with the other.

¹⁶⁴ Diethylcarbamazine, used to treat filariasis, can worsen disease in patients also infected with onchocerciasis.

¹⁶⁵ *Jan notes*: I meant, it itches like mad.

¹⁶⁶ Presumably, meaning that even if the drug treated the filariasis, it wasn't a good thing, if you had onchocerciasis.

¹⁶⁷ Before his training at the LSHTM and employment as Director of Amani, Lelijveld had worked as a mission medical doctor in Kamba land, Kenya, in the 1950s.

¹⁶⁸ Also visceral leishmaniasis, a protozoal infection by a single-celled parasitic organism.

- Jan:* That was Manson-Bahr also! And nowadays, you would say, ‘My God, what’s happened!’ We should have been in prison really!¹⁶⁹
- Graham:* And you still let him come to Amani! [*laughter*]
- Jan:* Well ... no, no ...¹⁷⁰
- Alister:* We did that in Uganda, too, in the field with Phil Marsden.¹⁷¹ Went round *hundreds* of people giving them spleen biopsies. With a great big *double* needle!
- Jan:* At least, as far as I could see, we never had anyone collapsing of ... no massive bleeding or so. *But:* I said, as far as I could *see!* I don’t know what happened if they went home, and ...
- Vyviennne:* Well, the infection upwards, really. The infection upwards ...
- John:* The infection upwards ...
- Jan:* No, I think that would have been fairly OK.
- Alister:* It actually established that malaria was the cause of splenomegaly, massive splenomegaly,¹⁷² in a number of ...

[*Various people agree*]

- Jan:* ... these frail, these frail spleens with, with kala-azar ...

[*Various comment at once*]

- Graham:* [So do we have] your permission to be quoted on the witness seminar?! [*laughter*]
- Wenzel:* Now, there’s a whole lot there, but I would like us to move to the question of the African contribution to the direction of science in this time of ‘Africanization’. Because you have cited some samples of misguided, or just overburdened, over-challenged students; but were there, apart from individual interests and individual contributions, like in *your* case, or the one that *you* cited, were there some *larger* African forces? You spoke about the African interests that were brought to bear upon Amani, not where *individuals* came with funny ideas, but where you got larger ... like, Frances, you had an example?
- Vyviennne:* Well, like our Dodoma project – that was an East African – that was a Tanzanian project.¹⁷³

¹⁶⁹ *Jan notes:* At the time, these practices were not necessarily considered incorrect. Clinically, Manson-Bahr was a very knowledgeable guy.

¹⁷⁰ *Jan notes:* ‘I’ did not. He came only after my time.

¹⁷¹ See Marsden, P. D., M. S. R. Hutt, et al. (1965). An Investigation of Tropical Splenomegaly at Mulago Hospital, Kampala, Uganda. *British Medical Journal* 1(5427): 89–92.

¹⁷² A very enlarged spleen, often owed to long time malaria infection.

¹⁷³ *Vyviennne notes:* The Tanzanian Government intended to know the malarial indices etc. in the Dodoma area, as they were moving the capital from Dar to Dodoma. It was an example of a project initiated by the Tanzanian government, not an expat initiative – it was for a social reason, not purely scientific. An example of the type commented on earlier by Jan.

- Frances:* [aside:] I'm not quite sure what the question is. Do you know?
- Vyviennne [to Wenzel]:* Do you want to know ... the African direction?
- Graham:* I think it's a ... *Philosophically*, you can't answer this question, because as you know we have mentioned names of several of them who got on to the big issues. But the big issues that some of our Africans colleagues developed their questions and answers [on], and worked on, *took them out of Amani*, I've already said it in a number of ways. [*Others: Yes.*] And so you really have ... the answer to the question is: you have the ones who are no-hopers who stay there and just get their salary and write a few papers, and ultimately [...] it *has* collapsed; and they [i.e. the others] move themselves elsewhere. That's pretty unfair, because some of the individuals, I'm thinking of Stephen Magesa, and others among the entomology cadre, have been sort of *subsumed* into national and international programmes on, say, the current push for malaria. But there was *no way* that a *luminary* [*others agree*], creative scientist could *do it* properly if he stayed in Amani! And, by degrees, they moved to Muheza or Tanga; and then by self-selection, by quality selection, they've gone elsewhere. And I keep naming the individuals that I'm in touch with, that have really taken it to the zenith, and are now the world leaders. Kilonzo is the world leader in ... [*In response to background comments*] Recently *my* boss in America, the head of medical and veterinary entomology for the United States Department of Agriculture, visited Morogoro, to set up a new axis deal between US and Tanzania, you know, all part of Obama recently visiting. [*Various are making agreeing noises*] The word went down the line: 'We gotta set up new important projects, bilateral America-Africa, Tanzania'. So, Kilonzo is a focus for *that*; and then I've spoken about Mnzava, who is in Geneva running the global malaria vector stuff – so that's where the answer is. They didn't stay in Amani when they were the *best*, and unfortunately the whole thing has rather imploded, in physical terms the national institute is in ...
- Vyviennne:* But you weren't quite asking that, were you Wenzel? You weren't quite asking that.
- Wenzel:* The question was more about ...
- Graham:* Other African institutions?
- Wenzel* ... other African institutions. What about the Dodoma expedition for example?
- [agreeing]:* Yes. Well, as I was saying, that was a typical one. Yes.
- Vyviennne:* Yes, or the Zanzibar work that you were *told* to do? Was that of a different order or a different sort of research? What you

described about that sounded quite different from Alister's, rather more technical work. [*Various start to cut in*] So maybe ...

Vyvienne: Because it was a Tanzanian project. [*Continues talking with Frances and then Graham about 'the Dodoma project'.*]

John: I would say Lucas, Adetokumba Lucas, is probably the single best example; the Nigerian.¹⁷⁴ I mean, he arranged programmes all over Africa.

Wenzel: I was rather thinking about the Tanzanian government.

Graham [his comments with Vyvienne ending]: Vyvienne is pointing out that when they went to Dodoma to do parasite surveys, it was not just a sort of bio-geography.

Vyvienne: Yeah.

Graham: They were *preparing* for the capital city to be *moved* there! [*Vyvienne: Yeah, yeah!*]

Vyvienne: Is that what you meant?

Wenzel: So that was more a kind of science in the interests of Africa. [*Vyvienne: yeah, yeah.*]

Vyvienne: Well, it was. I mean it was a big new government initiative, Because of moving their capital. Yeah.

Jan: You could frame it this way: when all these well-qualified Africans came back and started talking among themselves together, 'we should do this' – were there some that at a certain moment would hammer their fist on the table, and say 'We should do it *this* way! Whatever you others come up with'. Did that happen? Because I was thinking, at the beginning of the HIV situation, we had a big conference in, in Brussels; and obviously, it was a great problem in Africa, but the experts were very much Western experts, so we were there from the sexually transmitted diseases, about drugs, Gates and that.¹⁷⁵ And I know how *shocked* I was when the Africans at a certain moment said, 'We are going into a meeting, and we don't want *any* one of you "*whities*" in there.' [*laughs; others chuckle*] And we were *very* shocked [*others agree*], and we said 'God!' And I think that *had* to happen really [*someone agrees*], that *they* for themselves said, 'We are going to do it, we are taking the responsibility'.¹⁷⁶ And I think that's more or less the

¹⁷⁴Nigerian MD and leading figure in international health, born in 1931; from 1976–86 Director of WHO's Special Programme for Research and Training in Tropical Diseases (TDR); see: Lucas, A. and F. Fleck (2015). Keeping the living well. *Bulletin of the World Health Organisation* 96: 292–293.

John notes: A top WHO man. *Jan notes:* He was Director of WHO special programmes on tropical diseases (TDR) in the '70s–80s (see note 262 on TDR).

¹⁷⁵*Jan notes:* I was there on behalf of Dutch services.

¹⁷⁶*John notes:* This is my own unproven hypothesis, which might well be wrong, but I think it may have been the question of HIV/AIDS that made this meeting specific. (That is, perhaps,

- question that *you* asked. Did they – at that stage – [say] that they didn't want us any longer?
- Frances:* I don't *think* ...
- Vyviennne:* We weren't at that stage yet, were we?
- Frances:* No. We would *meet* with the African *counterparts*; the same *qualified* people as us; and they were the same age as us; there was never one that actually said, 'No! We're going to do it this way.' It was more [like a] discussion.
- Vyviennne:* ... on a par, wasn't it?
- Frances:* Yes, you were on a par.
- [*agreeing*]:
- Jan [unsure]:* Ja...
- Vyviennne:* Educationally, and everything.
- Jan:* It was still ...
- Graham:* Frances' particular group event, on filariasis, for five years, could have *not* produced a better balance – almost gender balance. I mean, there was only one female scientist, but that's another situation.
- Frances:* I'd like to discuss that eventually.¹⁷⁷

[*Others agree and laugh*]

- Graham:* Yeah, it's a point we should recognise as part of Amani's story; but I'm really trying to say that there were four field entomology team leaders, scientifically qualified people, and an overlord who [*in a jokingly deferential/serious voice*] was a *medic*, who was a bit more conventional British, MRC stuff.¹⁷⁸ And I don't think you could have had a more democratic project done anywhere in the universe [*Frances agreeing*], on anything, than the way they fitted together. They had a Danish Norwegian hybrid sort of guy, who was doing one set of villages;¹⁷⁹ they had a Chagga African doing another set of villages;¹⁸⁰ they had Saidi Magayuka who was working above his paygrade to lead that group;¹⁸¹ and then they had Frances, who was really embracing the true intricacies – the vector questions

that it's hard to draw conclusions from this anecdote about how far white people are 'wanted' in other areas of medical research in Africa, which might be less controversial?)

¹⁷⁷John notes: Yes.

¹⁷⁸Presumably, John McMahon. See note 92.

¹⁷⁹Nils Kolstrup, who in fact is Danish though now practising in Norway.

¹⁸⁰Franklin Moshia; see note 157.

¹⁸¹Magayuka was a senior technician in the entomology laboratory at Amani from 1964 to 77 or 78; he co-authored and wrote several publications; see e.g. Magayuka, S. A. (1973). Development of filarial parasites in mosquitos in north-east Tanzania. *Bulletin of the World Health Organization* 49(1): 110–111. He was an important colleague of Frances and Vyviennne's. *Graham notes*: a chief entomology technician for Amani, who began with Gillies and continued until my come-back projects during the 1990s.

in the context of filariasis. And they all helped each other all the way, and published jointly.

Frances: There was really nobody who would say: ‘Boompf! [*gestures, fist on table*] We are doing it *that way!*’

Graham: And the bunch of papers that came out, as far as I recall, had all your names on all the papers, yeah!

[*Various agree*]

Frances: Yes. Yes, including of course some of the technical officers, as well, like Muniss¹⁸² for instance, who was ...

Graham: Those of us who were lucky to be there in this era did *not* leave off the papers, when we published them, the names of our quality technicians who really had no degree qualifications at all. [*Others agree*] We put them on, because they’d done the work! Yeah! John’s ...

John: Yes, and I mean ... a number of my assistants whom you met last September, had no paper qualifications at all, but they ... they went down as authors of my papers.

Graham: Where I work now, in US science, you’re not allowed to do that. You can’t put on a good technician; he’s not a scientist.

Vyviennne: Yes, yeah.

Frances: Gosh, gosh! Did *you* [*Vyviennne*] have that problem?

[*Frances and Vyviennne’s conversation continues in the background over John’s comments, discussing issues to do with ethics and laboratory animal rights, and co-authorship of technicians on publications.*¹⁸³]

John: In Amani we *did* do that in [most cases]. So I think *that* recognition was there, although these sort of things are so complicated. I mean this is a *long*, long way from Amani: but I do

¹⁸²Laboratory Technician who worked with Frances Bushrod and others.

John notes: Justin Muniss, also called ‘Munisi’. (Generally, second names were used in address.)
Graham notes: Justin, my favourite assistant, was ethnically Chagga, and came to Amani looking for work. He married Margaret, the daughter of the local Usambaa chief; got some land to cultivate cardamoms under the forest canopy; needed employment, and approached me; I gave him a job with my team of assistants, where he thrived and we bonded. He ran my field team brilliantly, despite being only semi-literate and, technically, unqualified. Jan appointed him Malaria Assistant, which helped stabilise the role of his wife as a key microscopist for Jan’s team. They were both very intelligent, efficient, loyal, and decent. Our 1972 publication on spermetheca size was based on his careful measurements (White, G.B. and J.N. Muniss (1972). Taxonomic value of spermathecal size for distinguishing four members of the *Anopheles gambiae* complex in East Africa, *Bulletin of the World Health Organization* 46: 793–799). I wanted to give him scope indoors, and confidence to develop his career after I moved to Ethiopia in 1972. After then, Justin enjoyed working for Frances Bushrod, but after she left Tanzania he became alcoholic, lost his job, and died during the 1980s (younger than 40 years of age, I reckon).

¹⁸³*Vyviennne notes:* We were talking about my name being on papers, as a technician. When I was at the Royal Free Hospital it often was, if I had contributed to ideas as well as technical expertise – also if I had presented the paper at meetings. But in other institutions, technicians did not get a nomination – just a mention at the end. Few papers were written when I was running animal houses (later in my career).

remember a case in West Africa where the indigenous people complained, because the United States kept sending them black ambassadors! Well I mean, how do you interpret that? [laughs]

Wenzel: Right. Thank you, John. I suggest we take some coffee or tea. You two [Frances and Vyvienne] just suggested a very important subject, concerning the role of the women. [Agreement] So, if you could tell us more about that later ...

Coffee break

[Background chatter during the break, continuing to discuss the question of lessons to be learned from Amani and elsewhere in Africa. Among which:]

Jan: I think that this ... I think it's interesting to think of these issues, because, because the point of view, now, is, is quite different among some of us.

Vyvienne and Yes.

Frances:

Frances: And when you're thinking maybe you didn't do enough – you should [rather] congratulate yourself! [Vyvienne makes sounds of agreement]

Jan: I was thinking as well about the different angles on it ... what different angles were possible ... and that's what we discussed, what's the African intention, what was the transition about?¹⁸⁴

Frances: Yes, yes...

Jan: The transition was about the colonials' investment to Africans doing it themselves. That's the transition for me. And so that's why I ask all the time, what was really in the interests of the Africans?

Frances and Yes, yes.

Vyvienne:

End of coffee break

Wenzel: Right, is everybody there? Please take your seats. Just to quickly update you on the programme: a few of you have to leave early this afternoon, so we close by three o'clock, so that we have time to shake hands and say goodbye. Then we'll reconvene with Graham, Jan and John for our final round-up discussion.

Graham: I want to be really *deliberately* awkward to say: what's the point of talking about the gender question? I mean, we all know that it wasn't available to be negotiated? Maybe Frances could explain the place that the ...

¹⁸⁴ *Jan notes:* What I meant was: what was in the interests of the Africans? What we talk about here is post-colonial Western inputs. But the transition to African-motivated research approaches is lacking.

Frances: You want to be provocative!
 Graham: You get my point: that according to René there is evidence in the files that job descriptions for the time when *I* was there made it impossible for female candidates.¹⁸⁵ [*Vyviennne agrees*] I don't know if he told you this, but – while punting we chatted about the way that women were not *eligible* to be even *looked* at, to be recruited in the time when *I* went out.

[*Several people start to respond*]

Frances: You're talking about expatriate women, as well?
 Graham: Well, this was at the time when the Community was asking Crown agents [Agency?] to hire people, that's how *I* got in, and then the Foreign Office or somebody was looking at me physically and giving me a medical and saying OK ...
 Vyviennne: Yes, and the psychology test.
 Graham: ... and *I* had some friends who were influential, called Gillies, and so on. But there ... *I* didn't *know*, and *I* think John says the same point:¹⁸⁶ we didn't *know* that it wouldn't have been possible for a woman.
 Jan: But, Graham ...
 John: *I* mean it's, is this about expatriates, indigenous, or both?
 Frances: *I* am talking about those East African people and their training [*Various agree: Jan: Yes, that's right.*] and what level they reached, as well as expatriates. *I think* when *I* came to Amani and was interviewed by the Crown Agents – extensively – that policy was still in place, but *I* spelled my name with an 'I' so they thought *I* was a man, and were surprised when *I* turned out to be a woman.

[*All laugh*]

Frances: It's very useful when you're called 'Frances', because it's for men and women.
 Graham: So you *were* deliberately just playing that? Really?
 Frances: So *I deliberately* spelled my name wrongly, so that it looked like a man. And hopefully once they met me, they thought, 'Maybe it doesn't matter, you know; those [*referring to her breasts*] are a bit of a giveaway, but it doesn't matter.' *I* don't know! But ...
 Graham: *I* remember you using it.
 Jan: But *I* still like to think ... back at that time when *I* started, by then it was an all-male institute, and one of the first things *I*

¹⁸⁵Referring to an earlier conversation. The 'files' were of job adverts for expatriate positions. The reference found by René is for a job advertised around 1950; this earlier document indicates the use of a format for vacancies which suggested that women would often not be eligible.

¹⁸⁶*John notes*: Correct.

started doing was bringing in females among the technicians. So, at the lower levels; but at the same time, that improved a lot, and I am still proud that from those days when we started at the very basic level, that the present-day Director of the Institute is a woman! [*Frances agrees in the background throughout.*] And so somewhere through the process, *development* has gradually taken place, *exactly* in the direction that we wanted to go.

- Vyviene:* That wasn't my experience, because I just ... well, my family found an advert in *The New Scientist*, remember? You know, in the magazine. A scientific book.¹⁸⁷
- Tony:* Amani has had a woman Director.¹⁸⁸
- Jan:* Hmm?
- Tony [repeats]:* Amani has *had* a woman Director!
- Jan:* Ja, that's what I said!
- Tony:* Yes, I thought you said that.
- Graham:* She *is* the Director, now.
- Tony:* Yes, that's right.
- Graham:* And Mwele Malecela,¹⁸⁹ who came up, she is the Director ...

[*Various others comment in agreement*]

- Graham:* She is the Director-General! Of NIMR!
- Frances:* Is she really? Is that right?
- Jan:* Yup. And I think – now, as you mentioned Mwele – when we were discussing Arusha, we missed one very positive point; and that is Mwele's father. [*Others agree*] Mwele's father was the Minister of Research and Technology of the East African Community.¹⁹⁰ And he was one of the *best*

¹⁸⁷*Vyviene notes:* A scientific magazine. I applied, not expecting it to go anywhere. It was an adventure. I also have an uncle who went to Kenya as a young man. They were actively recruiting men and women.

¹⁸⁸Dr Martha Moshi Lemnge is Chief Research Scientist and Director of the Tanga Research Centre since its establishment in 2005.

¹⁸⁹Director-General of NIMR until 2017, and Director of the Tanzania Lymphatic Filariasis Elimination Program. She studied at the University of Dar es Salaam and the LSHTM (where Graham was a faculty member at the time), specialising in filarial immunology. She has worked at NIMR for decades since she was a junior scientist. She chairs Tanzania's Medical Research Coordinating Committee, is a member of the WHO Strategic and Technical Advisory Committee for Neglected Tropical Diseases, and has served on the committees of various other international research and philanthropic organisations. See: <http://www.ianphi.org/howeare/leadership/bio/mwele.html>, accessed 23 January 2016. Her full name is Mwelecele Malecela; 'Mwele' is presumably a nickname.

¹⁹⁰John Samwel Malecela, b.1934, is a senior Tanzanian politician and former Prime Minister, who between 1969 and 76 served in various functions as Minister in the East African Community, including the portfolios of 'Research and Social Services' and 'Communication and Transport'. (One of his secretaries at that time was Dr Fabian Kamunvi, the Ugandan who visited Amani to supervise Frances, above, who after the breakup of the Community worked with Amani's exiled Director Philip Wegesa at the newly founded Kenya Medical Research Institute's Centre for malaria and Other Protozoal Diseases in Kenya.) He is the father of Mwelecele Malecela, who in 2010 became Director General of NIMR.

support pillars that I had. When I had *problems*, when I had *questions* [*banging table for emphasis*], he *always* was open, I *always* could go to him, he was *always* trying to find the way of ... And I had *grand* respect for him really, so he *should* be mentioned.

Graham: And I think he was twice Prime Minister.¹⁹¹

Jan: Later on he was Prime Minister, and he became Vice-President, but that was later on. But in those days, *he* was the [EAC] minister that, that *I* was referring to always.

Graham: You can take this point the other way round though: [*laughing*] why the hell did his daughter want to be a scientist, when she could have been in politics or something?

Jan: Ja, but she was quite good at it!¹⁹²

Vyvienne [*in response to Graham*]: Well – what a thing to say! What a thing to say!¹⁹³

Graham: Well, I am trying to point out that his daughter's own career choice was not – neither facilitated nor blocked by being a woman.

[*Others continue to agree*]

Jan: Still, maybe there *were* the connections that way, because the way she started studying in London, the way she got in the department of Chris Curtis, the way she got her PhD. I mean there *were* all those lines of connections with the past; so it's maybe not *so* surprising that she got there. You know what I mean?

[*Qualified agreement from others*]

Graham: So we kind of have defined it that by the time Frances made a breakthrough, through her own ingenuity, it really *wasn't* a prob... an obstacle, but it was *on paper* to be an obstacle.

[*Some sounds of agreement, Jan sounding very qualified in his assent*]

Frances: Yes. I was more ... I wasn't so much thinking of expatriates, I was thinking of the staff *actually* there in Amani when I found them. Now, I found a group of much older lab technicians who had obviously not been thought *good* enough to train further; and one had rather too many of those. You know, you had ... I mean Ali Mtanga¹⁹⁴ for instance, he

¹⁹¹Of Tanzania, after the breakup of the EAC; in fact he was both Prime Minister and Vice President 1990–94, after serving as Minister for Foreign Affairs.

¹⁹²Jan notes: She was good at science! She took a PhD supervised by Chris Curtis.

¹⁹³Vyvienne notes: I was getting a bit cross at the paternalistic tone of the conversation!

¹⁹⁴A head driver in the 1960s–70s; see Kelly, A.H. (2017). 'Head Driver' in *Traces of the Future* pp. 132–35.

- was lovely but you had a bit too *many* of the ones that one had thought were not quite good enough to send for further training. And then you had, happily, more highly trained ones coming back; and *then* you had some really *super* women, who had *never* been trained properly. Really *super* ones! Margaret Muniss,¹⁹⁵ remember her?
- Jan:* Yes, Margaret was obvious ... the first one, the first one I brought in: Margaret.
- Frances:* But *she* hadn't – never had had technician training. [*Jan: Mm, ja.*] Nobody thought to send *her* for a degree; she was a *brilliant* ... technical person.
- Jan:* Ja, she was. [*Others agree*]
- Frances:* So *that* was the problem for me.
- Graham:* Because Jan picked her out and said, 'Let's make her better and better'. But ...
- Frances:* But, I mean, she didn't get *best*. And I would say she didn't get best because of her gender! Maybe I'm wrong.
- Jan:* Ja, but there was some other thing as well with Margaret. Margaret was part of the traditional aristocracy in the area.¹⁹⁶ So when Margaret came in, when we still had no women in the staff there, she got respect straight away from the people, because of that.
- Frances:* Yes.
- John:* Yes, I think that's a very valid point because – the fact that women were not employed was I think not purely an expatriate-caused phenomenon. I mean, there was also the local aspect that indigenous males were not used to having females above them. [*Someone agrees in background*] But, at the same time ...
- Vyviienne:* It was also semi-Arabic ... it is a sort of Arab influence as well, because most of them were Muslims, weren't they?
- John:* Well, that came into it, too, but there is a strange paradox in this respect, in that you quite often find that it's easier to be a female prime minister than a female technician. One is sort of accepted, the other isn't [*laughing*] – and the *types* of discrimination you get are by no means obvious. I mean I was surprised in Venezuela to find that at Puerto Ayacucho in the Venezuelan Amazon, *all* the top scientists of the research institute there were female. [*Various people agree*] And I thought, 'My goodness, you know, that's, that's democratic!' But it was explained to me that the reason was, that it was in the middle of the Amazon ...

¹⁹⁵The first female technician hired at Amani; she was working there when she married Justin Muniss, who then gained a job as a technician for first Graham and then Frances. Margaret is now widowed and still lives near Amani. According to Graham, she was a key microscopist in Jan's team.

¹⁹⁶*Graham notes:* her father was the local Usambaa (sic!) chief.

- Vyvienne: And the men didn't want to ... ?
- John: ... and the males stayed in Caracas with an eye to the main chance! So, I mean that's a sort of geographical [*laughs*] bit of discrimination – so, it's not simple. But there was that transition and it was during Jan's period, well our period too ... some of us went through both stages.
- Aleid: Yes, in general, it was not only in Amani. I was married and I couldn't get a job!¹⁹⁷ [...] When we came to Africa, my husband had a job and I, as married woman, I couldn't have a job. And Harry organised a job for me, just in the time he was there – a month before me – he organised a job for me in Magila,¹⁹⁸ so I could work there for half-time. And I have another [*laughs*] example, that was a bit lower instead: we had a garden boy and the garden boy was always doing the garden, and ironing Harry's clothes. And one day Harry was not there, and I was at home with him, and it started raining. So he couldn't work in the garden because it was raining, raining, raining ... pouring. And he was standing under our roof ... a *makuti* [Swahili: thatch] roof we had ... he was standing like that, because otherwise he got wet. And I said, 'Where is Hamisi? He could iron a bit in this time when it's raining.' So he was standing *there*. And I said, 'Hamisi, come, you could iron the clothes a bit.' He said: 'No! *Bwana* [Swahili: Mr., master or gentleman] has said I have to work in the garden!' [*All laugh*] And he didn't do these things, he stayed standing there, under the roof, so rain was falling *here* and *here*; 'No; *Bwana* has said.' So he didn't do it; but I had to do it.¹⁹⁹
- Frances: And to follow up on that story: you remember that Theo Goosen [*Jan: Ja*], his wife Tineke [*Jan: Ja*], who was a trained pediatrician; she *struggled* for two years even to be allowed to work voluntarily.²⁰⁰ That was a *horrible waste!*

¹⁹⁷To the Dutch researcher Harry Kortman (*see note 118*).

¹⁹⁸Mission station and hospital between Muheza and Amani in the foothills of the Usambara Mountains.

¹⁹⁹In a 1972 letter to Graham, after the Kortmann family had returned to the Netherlands and the Whites had moved to Ethiopia, Harry Kortmann writes: 'Aleid works now in a half-time job as a welfare doctor, doing municipal [work] under five clinics and school health work. She enjoys it. However we occasionally regret that we have left the African soil for this well organised life here.'

²⁰⁰Theo Goosen, a Dutch clinician from Nijmegen, worked in Amani from 1971, living with his wife Tineke and family. See Goosen, T. J., Goosen, M.A.L. and Salter, A.J. (1976). A Rural Study in Tanzania of the Chemosuppressant Activity of Various Regimes of Co-trimoxazole or Chloroquine in Subjects with *P. falciparum* Parasitaemia. *Parasites, Fungi, and Viruses*. J. D. Williams and A. M. Geddes. Boston, MA, Springer US, pp. 69–78.

John notes: Theo Goosen arrived in June 1971 to take up the position of Medical Research Officer in charge of malaria research. His wife Tineke was involved with children's vaccination programmes on a voluntary basis. They had a house in and I think came from Nijmegen, on the German border and close to Wageningen. Theo continued working as a malarialogist in Amani until 1974 or 1975, I am not sure which. (The Goosens feature frequently in other

All: Yeah.

Jan: Ja, that, that was really a problem when I first time came to Africa. I was allowed to work in the native reserve of Kitui in Kenya as a Dutch doctor, and only on 3-months kind of licenses, because I was not recognized as a *British* doctor in those days. [*Various comment and laugh*] And I had, every three months, to go back to Nairobi to get the *license* extended! Can you imagine, a few years later, all the European doctors: [*impression of a dubious and unhelpful license-issuer:*] ‘Well...’, all over the place!

[*All laugh*]

Tony: There’s a story there: when I went back to Tanzania in ’87, to Muheza, I saw them building some experimental huts, and there were several villagers who were used to help. One was quite a young female, and she was the best of all, she used the wheelbarrow. And after about three, four months they were built, and because she was so good and wanted to get on, I employed her in the ... as a technician, because being in a small MRC unit, I could do that. And she became one of, you know, my best workers.

Also I had a ... what-d’you-call-’em, a Masai, a Masai woman also in my team, and in fact I think most, half of my team *were*, were female. This was in ... right about the early ’90s I suppose, you would say. [*A couple of women make sounds of agreement*] And so there was a lot of women – quite rightly, of course! [*laughs*] – participating. And they were very good!

Graham: So can we define it that there *were* rules that made it harder for women in general, but they could *get through* if people really made way?

[*Others make agreeing noises*]

Vyvienne: But that’s the story of women’s liberation! [*laughs slightly*]

Graham: And then ... [*responding to Vyvienne*] Yeah I mean it’s pretty global, isn’t it? But I am also thinking about, particularly: the history of Amani has suffered from two, let’s call them *plagues*, when most people got taken out. And only a few were there to carry on.

conversations and were clearly a lynchpin of the community, providing medical care. Theo later became an Assistant Professor in the Department of Genetics at Wageningen University, and is currently Principal Investigator at the Hogeschool Arnhem and Nijmegen (HAN) University BioCentre. Tineke is listed with Theo as a contributing author on a paper, alongside Voller, A., Osoba, D., Dick, H., Draper, C. (1979) The role of the HLA complex in the antibody response to malaria under natural conditions, *Immunogenetics* 8(1): 323–338.

The one was the moment of decolonisation, when they took all the expats and paid them well to go away.²⁰¹

[Someone male in the background: Yeah.]

And there really wasn't much choice. And maybe Tony can illuminate on that, but my knowledge of that period was that Mick Gillies, and some other people of his type, came to the British Museum as a *refugee* place, with all this money they'd been offered to *not* work in Africa. And that's when he wrote his book. So, there he was, given a bench in the British Museum, writing his book, on the money that – he was embarrassed how much it was! – [he had been given] to stop his career in Amani. And then, as we all know, he got funds from MRC to set up his own unit to carry on those traditions in Sussex University. So he was a *founder* of Sussex University, and he chose then to put the lab work into mostly Gambia.

But you see, then Amani just basically *struggles* through a few, sort of, *injections* of help, and we get to the moment in 1977 when the collapse of the Community takes out the pride of the Kenyans; they have to go away *overnight* [*someone agrees*]; I can tell you the stories of *some* of the institutes – *overnight!* – for example, the Kenyan Director of the Tororo Trypanosomiasis Institute, he loaded *everything!* – the labs, the, the fridges, and the cryo-preserved tsetse, tryp stains; all the cryo-persevered stains, he *took* them to Kabete, and started a new Kenyan tryps institute!²⁰² Literally, he just *stole* it all and went with it, because that was his political instruction.

[Various people agree throughout this]

Now therefore, what we are faced with today is trying to rationalise Amani as a medical research centre, when the forces that took *out* all the good international activities left it depleted, to the point that as far as I know the motivation of Tanzanian scientists *cannot* feel fulfilled up there. And the consequences are that some of them took the courageous

²⁰¹John notes: Not quite all. I stayed on, as I was employed in a series of two-year contracts and did not qualify for money. All expats in permanent employment left.

²⁰²The Director of the East African Trypanosomiasis Research Organisation (EATRO) was then the Kenyan Raphael Onyango. The Institute's cryobank was transferred to the Kenya Trypanosomiasis Research Institute following the breakup of the EAC in 1977. See: Murilla, G., Ndung'u, K. et al. (2014) Kenya Trypanosomiasis Research Institute cryobank for human and animal trypanosome isolates to support research: opportunities and challenges, *PLoS Neglected Tropical Diseases* 8(5), e2747. Available online at <http://journals.plos.org/plosntds/article?id=10.1371/journal.pntd.0002747>, accessed 18 January 2016.

step to transfer the management down to, firstly, Muheza and then: 'Why bother? Keep it in Tanga!' [*laughs slightly*] ... where, in a way, it thrives; but many of those guys have had the savvy to go and get international positions.

So I'm implying that if we try to talk about the *gender* thing, it leads to the *bureaucracy* thing, which leads to the destiny of *anything* up that mountain. You've got to justify the spirit of Amani, which I think can be easily be cherished and, and *resumed* if you find a new ... I thought the Finns with their forestry were going to do this, and they did for a decade, but some other decision in Finland cut them off, didn't it?

[*Various agree*]

Jan: Ja, but anyway I think René's experience that way is very important, because René knows a lot about the history of Amani. And what he told *me* was just the goings up and down from Amani all the time: Amani would go up, and then go down, but then it came back again [*others laugh*], and it's happening all the time. So that's what happened. I think, once again now, so we need a new initiative, *new* idea for Amani to continue and, I'm sure about that, not as a medical research institute.

Graham: Well, looking at the conditions of the road it's ... !
Wenzel: Sorry, I want to bring us back to the '60s, because the future is not our main remit here. [*Sounds of consent*] You brought us to gender, Graham and Frances and Vyvienne, and this raises the question of *social* change. You witnessed [the period] '58-'59, to '76-'79, and there was tremendous social change in terms of the relations between staff and scientists, between gender, between whatever. Right? Could you tell us a bit more about life, *social* life in Amani, how that changed during the time that you witnessed? In parallel to the scientific change.

Graham: Who wants to talk about the Club?

[*All laugh and start replying*]

Vyvienne: We've already mentioned the Club...

Jan: Let's first ... but maybe we should first talk about political [change], the political side, and the politicians, the administrators ... because, when I came to Amani, obviously, the relationship between the Institute ... we remember Mntambo,²⁰³ who was the regional, or the district commissioner, was *disastrous* at that time!

John: That's right, Mntambo was...

²⁰³Mr I Mntambo, area commissioner for Tanga.



FIGURE 20: The arms of the Amani Club, with *Anopheles* mosquito (transmitting malaria) and Chincona leaves (treating malaria, and planted in Amani's botanical garden), 1960s (personal collection, Jan Lelijveld; original in the possession of Susie Winter née Gillies).

Jan: And so that didn't help the situation at all. But as soon as I came, the first thing I did was go to Mntambo and present myself, to say: 'I'm the Director now of the institute,' and I told him I'd like to collaborate, etc.

And then *gradually*, the relations improved very, very much, and I think *with* the improvement of the relations we got *also* very close contacts with, with the people up the road; Mntambo would come up to Amani, he would bring up, in his car, all the *balosi* [Swahili: ambassadors]²⁰⁴ up along the, along the line and he ended up in Amani with a *huge* group, and then: 'Well, OK, do it the African way!' We made sure that we not only entertained the *top*, but we made sure that also *everyone* that came there, got their meals there. And I still know ... remember Ineke²⁰⁵ organising, very fast, a *huge* amount of rice, and Mntambo standing at the door, and saying: 'You are allowed to come in; you are not allowed to come in, you eat outside!'

[various chuckles]

So the relations had become very flexible and very social in that sense. And, I think, important was also, from that point of view, that [the] *understanding* about what the Institute was doing improved. Because *you* [Graham] were very central in

²⁰⁴ *Jan notes:* Local Party functionaries.

²⁰⁵ Lelijveld, Jan's wife.

- it, when you demonstrated to Mntambo and his staff, your mosquito work, and particularly, how you were fertilizing [*Graham laughs*] the mosquito. He thought that was something *fantastic!* You were decapitating them, and with pincers you were fertilising the, the female mosquitoes.²⁰⁶ And Mntambo – that was something that he talked about for *ages* really! And ... [*responding to laughter*] No, but at the same time, that meant that we were somewhere in the picture; all at once they started understanding that there was something *interesting* happening there. So I think from that point of view, that's the political and social in a wider context.
- Dorothy:* In 19 ... sorry! [*checking Jan has finished; he encourages her to go on*] ... in 1958, when we started there, Amani was the centre for all the tea estates. And so every week we would meet – it was wonderful, because we had not just the scientists, we had all the tea estate people.
- Vyviennie:* Yes. It was when we were there, too.
- Dorothy:* Yes, yes. [*laughs*] But it was rather, rather *good*, because suddenly people *came* to Amani. [*Others: Yes.*] And they are people who connect with tea estates; they came, and gave us a *party*, and all sorts of things used to happen, didn't they! People used to come, and ...
- Tony:* Don't talk about *that* with me here!
- [*Everyone laughs*]
- Graham:* But you have to emphasise that the managers of the tea estates were ... *aristocrats!* If they'd been here, they'd have been managing a big stretch of the countryside.²⁰⁷ [*Agreement*]
- Tony:* We had these tennis courts. So that was a game that you could play. And when we went back, you remember, the anniversary? And somebody realised that the tennis courts had been taken over. There was a toilet, made in the ...
- Dorothy:* In the corner, yes.
- Tony:* ... just where I used to execute a devastating top-swing lob!
- Graham:* Yes. They²⁰⁸ didn't want to play tennis, but they were glad to have the Club! [*Various laugh and agree*] Yes. And I remember ... if you're really talking about the '60s social side: I was so thrilled! I had to stay in the Rest House for my first six

²⁰⁶ *Jan notes:* Decapitating the males, that is. *Graham notes:* You take the head off a male mosquito; anaesthetise a female; push her tail between his claspers at the tip of his abdomen: he will pump sperm into her! Female insects store sperm and release them onto eggs for fertilization as they are laid. See photos on pp. 154–5, <https://www.beiresources.org/Publications/MethodsInAnophelesResearch.aspx>, accessed 4 February 2016.

²⁰⁷ *Jan notes:* Maybe a kind of magistrate, rather than aristocrats?

²⁰⁸ Presumably, African staff at Amani after the Europeans left.



FIGURE 21: Social entertainment school band marching with Union Jack, early 1960s, in the background presumably wives distributing milk for the school band (personal collection, John Raybould).

months, because my boxes and my personal property got stuck in the Suez Canal, because of the Six Days' War in 1967. So, living in the Rest House for six months, I had all these ... white women who would come and play tennis out there, on those courts, at the weekend! And I could sort of get socially engaged, with no limits at all!

Dorothy:

Oh yes. There was the competition, all [that]; the darts competition, you know – massive, it was, yes!

[Lots of chatter and banter in the background; someone saying something about the courts: 'Not darts on the tennis courts!' Some conversation carries on in the background at this point.]

John:

Although of course there were ... certain ... limits. *Limits*, in respects that *Wenzel* will want us to talk about: and that was that it was an *expatriate* club.²⁰⁹

Dorothy:

Yes, exactly. [giggles]

Frances:

But it evolved, very much into a different club.

Vyviene:

By the time we were there, yes.

John:

Well, I did take people like Mtingi²¹⁰ – and one or two other individuals, to Amani Club. But prior to that it had *been*

²⁰⁹ *Jan notes:* Very much so.

²¹⁰ Rashid Mtingi was of coastal/Arab descent, and was originally a driver at Amani before becoming responsible for many technical matters. He seems to have been considered as not entirely 'black' in terms of colonial racist ideology: he is featured in one of the older reports as the first African 'field officer', a category which for a long time was restricted to lower ranks of white staff. Later, he was also the first to move into a big house in the main research station, next to the administration building and the *Boma*. His sons, Ramadani, Salimu and Ali, played with Jan's children, Daudi, Hubert and Carmen, as well as the Carlos' children.

expatriate: tea estate plus Amani Research Institute. And there was a *certain* stage when Gerry Pringle²¹¹ – who paradoxically sometimes had quite *liberal* progressive ideas – but he had, I think it's probably not unfair to say, such a hot temper [*Dorothy chuckles and agrees*], he didn't always *introduce* things carefully *enough*. But he *did* say that the club had to be opened to Africans, otherwise he would close it down. And so there *was* that change at that time. Well, it has since closed down, because it hasn't been maintained ...

Frances:

Oh, really? That's a shame!

Vyviienne:

That *is* a shame. Yeah.

John:

... and the tennis courts are non-functional. You couldn't possibly play tennis on them because there are tree trunks on them. [*laughter*] There is another club that has opened in Mtingi's old house, which is ... erm ... how can I put it? A social drinking club, but certainly [*Someone else: Yeah*] no tennis!

Graham:

So ...

[*Vyviienne reminds Frances of something, who starts speaking*]

Frances:

The only African I ever knew play on these tennis courts – maybe I've forgotten [others] – was Daniel Abaru. He was the Ugandan medical doctor who did some work on – on pregnant women – malaria and so on. [*Vyviienne: Yup*] And he was a wonderful tennis player actually! This is probably not super-relevant, but Jean Bonga was the best tennis player we had, and she couldn't find any partner, poor woman! And then *finally* Daniel Abaru from Uganda came, high-jump Olympic champion of Uganda, never played tennis in his life; she taught him, and within about a month they were ...

Vyviienne:

They were just *playing*. Yeah.

Frances:

... having a wonderful game, yes! So she was so happy. But he was the only tennis player. So, no wonder the tennis courts aren't used; it's not, you know!²¹² [*Others agree*] But ...

Graham:

The real problem that obstructed Africans who *chose* to get into the club, which was more of a drinking club, [*Vyviienne: Yeah*] except on weekends, was that they were not very well endowed with the funds to maintain the bar tabs. [*Others agree*]

²¹¹Born 1916, he was Deputy Director of the Amani institute in 1958–60, then Director in 1960–66, after which he returned to the UK to work for the Pfizer Group and then the Liverpool School of Tropical Medicine. His background was as Senior Malariologist in Baghdad in 1946–58. See Reynolds L.A. and E.M. Tansey (2001). *British Contributions to Medical Research and Education in Africa after the Second World War*, London, The Wellcome Trust Centre for the History of Medicine at UCL.

²¹²Presumably, Frances means tennis was not a game particularly well known or popular in Africa.

- Frances: Yes that's true.
- Vyviennne: And they had to pay to be a member.
- Graham: And it's a complicated way that there is a class structure in paying for your drinks [*Vyviennne and others agree*], that you *know* you've got spare cash, and you write your tab, and then you settle at the end of the month. But because of the differential in the salaries, even when they were *scientifically* on a par, they couldn't *dare* to go drinking at the club and then have to settle the monthly bill. [*Various agree*]
- Vyviennne: 'Cause I – I – I –
- Frances: They *did* of course. I was a Treasurer for a long time [*laughs*]. I had real problems with that particular aspect, and particularly as the Director was the worst offender.
- Vyviennne [*talking across her*]: And before you were there, Anna²¹³ was there. Before you were there, Anna and I did it.
- Frances: Yes. But we really, in our brief period, we really ...
- Vyviennne: Well, we made the finances straight!
- Frances: ... we made the club *fun*, I think! There were far more, obviously, African members than expatriate members; by then, there were only two, three of us left.
- Vyviennne: Yeah.
- Frances: We had a film every week; we did pot-luck suppers and everybody brought food from their ... particular culture [*various agree*]; And we played Monopoly!²¹⁴ Tanzanians ...
- Vyviennne: ... loved Monopoly! Yeah.
- Frances: *Loved* Monopoly! [*Others agree and chuckle*] I mean, here's this socialist country, and they adored Monopoly! Maybe the Chaggas liked it best.
- Jan: Of course, the capitalism...²¹⁵
- Frances: We had dances of some sort, didn't we? I mean, it wasn't just drinking, in that period.
- Vyviennne: No, no, and the films that [we showed], you know! I mean we – you know the *Carry On* films?²¹⁶ [*Jan: Oh yes. Yes.*] We

²¹³Anna Becker (née Clark) was a laboratory technician who worked with John Raybould, among other things on *Simulium* in vitro rearing experiments. At the time of the reunion, she lived retired in Edinburgh and could not attend the reunion.

²¹⁴A classic board game based on buying up real estate (originally in New York City) and collecting rent, with the overall aim of attaining wealth and bankrupting the other players.

²¹⁵This Christian, Bantu-speaking ethno-linguistic group, often considered wealthy and well educated, is the third-largest ethnic group in Tanzania. The group originates from fertile and prosperous regions where the majority of mission schools were based. *Jan notes*: The Chagga were considered to be a 'capitalist' tribe, feeling themselves superior to any other Tanzanian. *Graham notes*: They were 'progressive'.

²¹⁶A series of low-budget British comic films made from the late 1950s to the late 1970s. They were famous for their farcical plotting, lampooning of various English social types, and mockery of sexual prudishness through constant low-key 'naughtiness'. They often debunked the most sacred sites of heterodox British identity, including the Empire, as in the case of *Carry On Up the Khyber*, an account of the Battle of Khyber Pass, or *Carry On Up the Jungle*, featuring Victorian missionaries and African natives (played by black-painted Britons in grass skirts).

- found that, [*Various people recall*] if we had an outside screening, everybody came from the village, right from little ones to granddads, just to watch these. They obviously didn't all speak English, but they *loved* the slapstick of *Carry On* films.
- Graham:* So you had *non-members'* film nights?!
- Vyviennne:* Just occasionally. Because we filmed²¹⁷ on the white wall outside.
- Frances:* Yes, that's right! Yes, yes!
- Vyviennne:* Regularly, there was one [film] a month inside, for members; but we also shot it on a white wall.²¹⁸
- Graham:* And I suppose *getting* the film is another example of Amani at its best. [*Various agree*] If you wanted to screen a movie with one of these big old cassettes, usually two or three rolls, you ordered it from Nairobi a few weeks ahead. And it was sent on the train to be dropped off in Muheza Ubwari train [station].
- Vyviennne:* And it was collected ...
- Graham:* And then of course the guys in the lab in Ubwari would pick it up, and put it on the next truck that came up to Amani! And so if you were the organiser of the film, you would find someone come round to your house and give you reels a few days ahead of the weekend, and your job was to have hired it, and put it nicely back in the box, and send it back down with the truck to the train, and back to Nairobi. So that co-ordination of Amani was very reliable! And there were only a committee of four, weren't they?²¹⁹
- Frances:* Yeah.
- Vyviennne:* Yeah.
- Frances:* Yes, it was tough.
- Wenzel:* You describe that you went through a tremendous transition, from an all-white (plus Asian) club,²²⁰ to a situation where a white woman could play tennis with an African man, within ten years. So you went through a great transformation. You also mentioned this quite important detail of money. [*Various start to respond*] There were still differences in salary, were there?
- Several:* Oh yeah.²²¹
- Vyviennne:* Oh yes. Big differences.
- Graham:* It's the liabilities! We didn't ...

²¹⁷Presumably, projected the film.

²¹⁸*Vyviennne notes:* I was stressing that we also did things for non-members. The club was a social centre for us, but we felt it was not totally exclusive.

²¹⁹Presumably, running the Club; elsewhere the posts of Treasurer and Secretary are mentioned.

²²⁰*John notes:* There were no Asian members in the early years; these came later. *Jan notes:* Formally, African scientific staff could be members, since Pringle. Actually they were not interested in participating. Philip (Wegesa), Leonard (Otieno), (*see notes 13 and 232 respectively*) and Yohana (Matola) (*see note 20*) always went to the African club in the village instead.

²²¹*John notes:* Expatriates got large supplementations from their own governments.

Jan: Ja, not only the ...
 Graham: It's not only the actual amount of money [earned], it's the *liabilities*. [Jan: Ja.] One of the most extraordinary things that would happen, whenever Jan would hire a new officer – and I am particularly thinking of Aisha's²²² story – the *family* would descend like a crowd of *vultures*. When the first pay packet came for the new African staff, the family expected their share! [*various agreeing throughout*] And so ...
 Jan: And so *all* the children, from Tanga ...

[*all talk at once*]

Graham: And so when Jan hired ... maybe it was your first black African secretary, I'm not quite sure ...
 Frances: That was Aisha.
 Jan [*agreeing*]: Aisha.
 Graham: She got a house. And the first weekend, 26 children were sent up from down in Tanga to stay! More or less ...

[*all talk at once*]

Jan: That was for the night, but the next morning we *did* send them back in fact, ja.
 Frances [*aside*]: This happens all over, doesn't it? In Zambia ...
 Vyvienne
 [*answering*]
 Frances]: Yes, yes.
 Graham: It's why they can't really afford to be bar members.²²³
 John [*over the previous comments*]: So, this, of course wasn't new; there were people on the tea estates whose bar bills were extraordinarily high. I mean, they were bigger than their income. I suppose I was always *fairly* thrifty, because I drank slowly from a small glass [*various chuckle*], and I had a small bill. And I remember, when Graham was Treasurer at one time – and this is sort of normal humour – he put on the bottom of my bill: 'The last of the big-time spenders!'

[*All laugh heartily*]

Frances [*to Vyvienne*]: It wasn't a good job being Treasurer, was it?

²²²Aisha Swale, Jan's secretary, who later on married Leonard Otieno. (*See note 232* for details of Otieno.)

²²³Jan notes: I wonder if it was a matter of affordability. I think they didn't feel at home!

[Vyvienne replies in agreement]

Tony: When Philip Wegesa came into the club for the first time ...
 Dorothy: He was our first Director.²²⁴
 Tony: ... as Director ...
 Graham: You had to carry him home!
 Tony: Yes. And I said, 'What do you drink?', as you do, you know
 [Dorothy: Yes]? And, there, I was getting this round in, you
 know; so, 'What about you, Philip?' He says, 'Give me a
 double brandy.'²²⁵

[All laugh]

Tony: And I took it in my stride; I said 'All right!'

[Laughter continues]

John: That's very true. [Various people continue to laugh and chat
 inaudibly] I mean this ... the country with the second
 highest brandy consumption in the world is Togo. Not the
 United States or Britain, or something like that. [laughs]
 Frances: But if ... I mean we are talking about these lower-paid
 people – but when I was Director, it was actually the
 Director with the *hugest* unpaid bill! [Vyvienne speaks in
 the background to agree] And I couldn't do anything about
 it, other than polite notes! [Various agree] [...]
 Graham: But I think it's important to say the most simple thing: there
 was no apartheid!²²⁶
 Several speakers: No.
 Frances: Oh gosh, no.
 Jan: But before, there was. When I came to Amani, I was quite
 sure that there was still a little bit [of an] *issue* about the man-
 agers from the tea estates, who were Indians.²²⁷ And I know
 Tom Fletcher, very much, and Billah,²²⁸ who were looking
 after the tennis club at that time, tried to keep them out.
 Graham: Oh well, yes; [imagining the Fletchers' reaction:] coloured
 people ... !
 Frances: Yes.
 Jan: Ja, so they had a *real* problem there with those *Indians* to
 come in there, and there was always a negative criticism,
 and – with eyes *looking* at it... So it *started*, there was
 definitely racism in the same ...
 Graham: Well, in our Institute, there was no apartheid.
 Frances: No.

²²⁴ John notes: African Director, that is.

²²⁵ A rather expensive and flamboyant – even, defiant? – choice.

²²⁶ Jan notes: No... but *cultural* apartheid?

²²⁷ John notes: Yes, then. Before, it was just Brits.

²²⁸ Tom Fletcher's wife. Graham notes: Billah was a very strong personality who championed the best of British traditions and served as honorary librarian for Amani Library.



FIGURE 22A–B European, later ‘senior’ housing in Amani: the Director’s house, the Boma, and a typical bungalow, 1960s (personal collections, Jan Lelijveld and John Raybould).

- Jan:* No, the Institute, no. But the Tennis Club, as such, there was that ...
- John:* Which sort of date are you referring to there? From ...
- Graham:* I’m just meaning that ...
- John:* I’m not sure when you arrived in Amani.
- Graham:* Well, there was no apartheid in Amani Institute.
- John:* Well ...
- Jan:* There must have been.
- John:* ... in terms of the things like the Club at Amani, and in hotels, and some social events in Tanga, and so on.
- Frances:* In Tanga yes, but still not in my time.
- Vyviennne:* The Yacht Club. Yes.²²⁹
- John:* Africans were *not* allowed entry,²³⁰ but that was just in the early stage; there was a rapid transmission – transition,

²²⁹ *Vyviennne notes:* I did not really like the Yacht Club. Too full of ‘colonial’ types for me.

²³⁰ *Jan notes:* The Yacht Club would not accept non-whites. They were balloted out if they tried to join.

sorry, and it changed. But there was racial *segregation*, in the early 1960s anyway. But, soon after that ...

Graham: It was sometimes slow though; progress was a bit slow after independence. But when I came, I think it's important to remind everybody how I came at a time when I already knew Jan and Philip Wegesa and Leonard Otieno²³¹ from them doing their master's in London School [LSHTM] when I was a PhD student there, and it was all pre-understood that I was coming to join the scientific staff of an institute that had *lost* its staff because of decolonisation, and I was gonna be another ... I would be the *only* English one coming. [*Jan agrees*²³²] John was sort of hanging in there. But I was joining a tier of scientists there at the time that had a Dutch Director and two Kenyans! Who were my friends! And so: *there was no apartheid*, period!

[*All talk at once*]

Frances: No, absolutely not!

Jan: No, at that stage, not any longer, but still there were lingering things; like, the housing of Philip Wegesa and Leonard Otieno was quite different from the other researchers.²³³

[*People talk across him*]

John: Which year was it?

Graham: I came in '67.

John: Ah, well, that's 7 years later from 1960 when I went out, and that change – plus the interim transition – had taken place almost totally by then; the *change* ...

[*Various people agree*]

Aleid: It was change, yes.

Graham: We analysed this point: there was no – there *could* not be apartheid in the Institute [*various agree*], but there was apartheid in the social environment of the tea estate, because they

²³¹Otieno, from Kenya, studied at the LSHTM and took his PhD in 1972 on trypanosome (sleeping sickness) infections (available online at <http://researchonline.lshtm.ac.uk/682435/1/550324.pdf>, accessed 18 January 2016). At Amani he worked alongside Jan Lelijveld on malaria field surveys, and later on filariasis. He returned to Kenya in 1979 following the breakup of the EAC, to join the International Centre for Insect Physiology and Ecology (ICIPE) in Nairobi. He died in Kenya.

²³²*Jan notes:* It was Professor Garnham who promised me to send a good entomologist if I were to take the Director's job – that was Graham.

²³³*John notes:* even once Africans started to be allocated bigger houses, there was still a distinction made between those who were technicians and those who were Research Officers.

are the *most* polarizing with all the labourers, and the *royalty* who ran them.

John: But I mean there was, in places like Amani Club, in the early '60s. When *you* [Graham] arrived that had changed totally. I mean I'm not sort of arguing what's good and what's bad, and so on, but just trying to get the historical sequence correct.

[Various people respond energetically.]

Jan: That's what I was trying to do...

Tony: Just one thing: I ... [to *Jan*] sorry, go on.

Jan [continuing]: That's why I also said that, for instance, the housing question – it was very important in that sense, and that meant that the African research officers were *not* living in the same high-style houses as our *European* colleagues. [Many talking at once] When I arrived ...

Aleid: When I arrived, no African stayed in those colonial, huge, beautiful houses. But Mosha, and – when they came back [after] training, *they* got the first time, I think, the huge houses. Ja, I think so.

[various agree]

Frances: When I first arrived there, of course Yohana Matola was living in such a house; Mathayo Chintawi,²³⁴ I don't know if you know that name, but *he* was. [*Jan and Vyvienne agree in the background.*] Er, Saidi Magayuka had a similar house down the mountain, so, certainly ...

Wenzel: How did this transition happen? Was there some discussion about it?

Jan: Ja, there was some discussion about it; at some stage we said this couldn't go on;²³⁵ it was obvious that there was a differentiation; and we made sure that if a house became free or there was a wish for it ... Because there wasn't always a *wish* that they wanted a change; you have to keep that in mind as well. Once they were living somewhere, they might like to continue living there. But if there was a wish to be 'upgraded', you could say 'OK, we look after it, as soon as a house becomes available, we upgrade it'.

John: What happened in Tanga club? When did that change? I seem to remember that as ...

[all respond at once, laughing]

Graham: Oh, the Tanga Yacht Club. *I* couldn't get into *that* club!

²³⁴He went on to work for ICIPE in Kenya. *John notes:* he was from Malawi.

²³⁵*Jan notes:* Tom Fletcher and his wife were trying to prevent Bob Smith from making better housing available to Philip, Leonard etc. I then told Bob to get moving!

- Jan:* No, you couldn't get into ...
- Frances:* It was only, it was only the *exclusive* people that managed to get into [Tanga Club]!
- Graham:* I didn't have a big enough estate!
- John:* True apartheid there.
- Tony:* It did change.
- Graham:* Sorry?
- Tony:* It did change eventually. It got to about 1980, something like that. But I'd like to say that when I first went out, I was running a football team, as it were, for members of the young blood. And it was going quite nicely; I wanted them to play on the tennis courts, a game called heading tennis.²³⁶ But one or two members of the Club, who won't be named, said I can't do that; I can't play heading tennis football on the Amani Club. I couldn't get over that. They just said 'No,' and the Club Committee wouldn't, wouldn't allow it. That was when I first went, 1960, '61.

[*various agree*]

- John:* Yes, that's, that's the period I'm talking about.
- Tony:* As time went on, of course – well, we found another place to do it, you know, but to get everyone quickly there, and to train; that [the Club] was an exceptionally good place to do it.
- Dorothy [agreeing sadly]:* Yeah, but only the ...
- Tony:* I didn't quite understand that principle, but I gradually did: that, oh, you don't *do* that sort of thing; you *can't* have black people, you know, going anywhere near the Club!
- Alister:* The whole thing took about ten years, didn't it? From start to finish. I would say, yes. It was fairly quick.

[*various agree*]

- John:* Those sort of things were sometimes unexpected, and I think not realised. Just to give an example from the other side of Africa, a dam building settlement in Ghana, where the senior staff were Canadians and then some Japanese engineers came. Now they put all of *them* in tiny little houses, it was a similar sort of phenomenon. [*chuckles*] And it's very complicated this; but there *was* that transition between *Tony's* time and *Graham's* time, and people who

²³⁶A variant of football passing a ball backwards and forwards over a low net or dividing line, using either just heads or any body part except arms and hands. Also known as 'football tennis' or 'futnet', it originated in Czechoslovakia in the 1920s, and became more common from the 1940s, being played in confined spaces such as urban back streets. It could be a game from Tony's childhood. *John notes:* I think Tony grew up in the north of England, but did not spend time in the Soviet bloc.

came later; and it was *relatively* rapid, I suppose about ten years, and it was really *pretty* complete by the end of that period. [*A couple of people agree.*]

But you couldn't say that it didn't apply around 1960. Gerry Pringle was pivotal. I think because I took one or two people to the Club, *debates* arose, and Pringle thought, 'Well, I'd better do something about this.' And so he issued a dictum that the club had to be *open* to Africans or to any – I don't know how he worded it – otherwise he'd close it down, which was really typical Pringle. He had some quite good progressive ideas, but as I said, he had a very hot temper, and he didn't always *introduce* things in a way that would easily become accepted; but I think that was sort of a key time.²³⁷ And then Jan arrived with a different approach *altogether* in that respect.

[*Pause, then lots of people jump in.*]

- Alister:* [I think of an example from] the other side of Africa, where in The Gambia, you probably remember, they tried to start a university. But previously, they'd had a failed chicken operation; the idea was that Gambia was going to be exporting chickens all over Africa, but it didn't work, they all got some disease, I think it was Newcastle disease, [and] all the chickens died off. But that *then* became the quarters for the students. Their chicken houses became the quarters for the students, for the Gambian university! [*Woman makes shocked noises and asking why; laughter.*] Extraordinary! And the Europeans teaching there were in these magnificent houses on the beach! And the students – this was about '59 I guess, something like that – they were living in the leftover chicken houses! [*chuckles*]
- Jan:* But what I really stress, going back to the point about space before, John, when you said the transition from colonial to post-colonial started: you were discussing among yourselves what the future would be for the Institute. So did it develop, a kind of vision that ... ?
- John:* When you say 'amongst ourselves', you mean ... amongst whom?
- Jan:* The staff, the research staff, I suppose. Like *you*, and ...
- John:* Well, that would have been between the expatriates. Because there were no African research staff at *that* time. I mean, Msangi came prior to me, but I don't know what his

²³⁷ *Jan notes:* However, (as discussed later) it was Gerry Pringle's opinion which made the MRC in London seek to close Amani down as it had no future. As a result, the EACSO approached the Dutch government to do something about it, and make a suitable director available.

experiences were; Graham, I think, has looked into the history more.

[*Jan starts to respond*]

Frances: Yes, Wegesa...

Jan: Yes, he was there, and Otieno.

Frances: Otieno, they *met* them in the Club. That's where we met.

John: Exactly, but at that time, the transition had already taken place; the Club was open. But you're asking about the period about '60?

Jan: Why I am asking this was, because, why was it that *I* came in? Because there was *definitely*, from Pringle, I did understand ... but this is what I *don't* understand, because it involved very incomplete information ... but there was no future for the Institute and it should be ... abolished.

John: Yes, well, he [Pringle] tried to close it down.

Jan: Oh yes. When that happened, the East African Common Service Organization came to the Dutch Ministry of Foreign Affairs, that had a development department in it, and said, 'You had at an earlier stage promised to assist us with research,' and you have the report that I gave you, 'with' – how do you call it – 'with *fostering* research in Africa, so, do something about it!' And at that stage, *I* was studying in London, and I was told I could make a choice between two institutes: Mwanza or Amani. And then, luckily enough, some of the Dutch people knew Amani was such a very nice place. So, anyway ...

[*Everybody laughs*]

John: What did you ... what happened?

Jan: So I made the choice for Amani. But I *think*, I still remember that when *that* was done, I was told that I should pick it up, and then I still remember that people like Garnham had all said, 'It *ruins* his career!' They did send even a *letter* to Holland, that said, 'You *shouldn't* do this, it's – he should have even a better career!'

John: Well, there could be a sort of ...

Jan: OK, when that happened, Garnham discovered that they said in Holland, 'No; business, it has to go on; it's our commitment in East Africa.' Then he, Garnham was very very good, and he told me, 'OK, if you are going, I'll make sure you get a good entomologist,' and that was Graham. And so Graham came in that way, through Garnham, who made sure that I was accompanied by 'at least' a good entomologist to start there. So, *why* was it that Gerry Pringle, who, you said, had some progressive ideas – that he *really* was deadily committed to finishing the Institute?

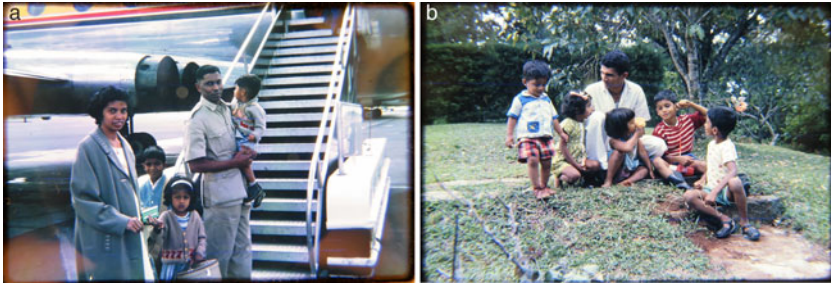


FIGURE 23A–B Anthony Carlos, administrator at Amani, and his family, 1970s (personal collection, Deirdre England née Carlos).

- John:* Well, what happened was a political event. I was on leave, so I only had it explained to me, but pretty vividly: a politician, I'm not sure what his name was, a Tanzanian politician, *insisted* on everyone being *out* by the roadside when he arrived in Amani.
- Graham:* That was the Vice President.
- John:* Sorry?
- Graham:* That was the Vice President.²³⁸
- John:* Was it? Actually, I didn't realise it was somebody quite so senior.²³⁹ But that upset Pringle an awful lot. Tom Fletcher was clever, because apparently, there was a group of expatriates in the Forest House, and he walked down the footpath. The others – not Forest House, Lion Hill – the footpath the other side of the Hill, and appeared near the road. But Pringle was *made* to appear there. That upset him. But then – you see, there *was* a provision, by the Colonial Office, or whatever, at that time – that if, after independence, in such territories, conditions became intolerable – intolerable, and a *major* negative event took place, then expatriates could claim that continuation was untenable, and get some commercial reimbursement.²⁴⁰
- Jan:* But it happened in *none* of the territories! In all the territories, in *that* sense, the transition was fairly, was just stable. Never, there was no place in Kenya, nor in Uganda ...
- John:* Yeah, but you see, what happened: Gerry Pringle *in* the Club one night, sort of said, 'Yes. "Unacceptable event" I wonder whether this business of us having to go out and stand by the

²³⁸*Graham notes:* This was Vice President Kawawa, responsible for the National Service Act which caused student protests and the temporary closure of the Dar es Salaam University. This visit of Kawawa's to Amani, which led to the downfall and 'forced retirement' of Pringle as Director, led to the replacement of UK support for Amani with Netherlands (WOTRO) support, including Jan et al.

²³⁹*John notes:* I think it may have been a more local political functionary who insisted on everyone standing out by the roadside when the Vice-President arrived, but I don't know for sure.

²⁴⁰*John notes:* Or was it an employment guarantee?

road would be “acceptable”?’ So I suppose he must have made a presentation of that type.

Now, *he* recommended Bob Smith, who was extremely *efficient* – but, I mean, in terms of running workshops and looking after cows [*Jan is agreeing in the background*] – as an *interim* Director. But they said in headquarters, ‘This isn’t acceptable, because we can’t have a’ – what do they call them – not a ‘*field officer*’, but anyway somebody at that practical level – ‘running the Institute’.²⁴¹ So they said, ‘We will have to appoint John Raybould.’ Which they did, so I went to Nairobi, with Anthony Carlos, who was the only Asian on the staff, a Goan,²⁴² and explained ... I don’t remember all the details, but I think it was the man who you referred to initially, the *older* managerial guy in Nairobi...²⁴³

Jan: In, in Nairobi? The Director General of the East Africa Common Services Organization. He was a Tanzanian in fact.²⁴⁴

John: No – [*pauses*] Actually, yes, that’s right. I can’t remember his name, but anyway, I went up there and I explained the situation, and the sort of general consensus was: ‘No, we can’t have it closed down [*Jan: Ja*], something must be *done*.’ Carlos went with me because, I mean, he was the administrator. Because *he* wasn’t quite so enthusiastic, because his wife, who was pregnant at the time, had also been asked to stand by the road. [*Suppressed giggles and comments*] But I have to be a little careful here, because I was on leave at the time; I am not sure whether anybody here had that experience.

Jan: But I think it was ... but it was definitely an advice, which was based on, how do you call it, the *impossibility* of

²⁴¹Robert Smith was originally a field officer (or malaria officer, a designation introduced under Bagster-Wilson for non-scientific technical European staff) and became after independence the overall Maintenance Superintendent responsible for housing, dairy and workshops.

John notes: Smith was from Aberdeen, ex-Army, and aged about 50. His job was as Maintenance Superintendent, or *Bwana Fundi* (literally, ‘boss craftsman’).

²⁴²One of the various staff members at Amani or on the tea estates who were ‘Goan’ or ‘Anglo-Indian’, that is Catholic of Indian descent (a category widely used in colonial East Africa, which held an interstitial position in the colonial racist ideology; Carlos was Amani’s administrator, with the official title of ‘Executive Officer’, and remained so until the late 1960s. *Graham notes:* Anthony Carlos and family arrived when Jan was Director, and became great assets to our community; they were Goans.

²⁴³*John notes:* Or was it Arusha?

²⁴⁴*John notes:* I don’t remember who I actually saw when I went to headquarters with Anthony Carlos to try to save the Amani Institute. *Jan notes:* It was Amishadai Larson Adu (in fact Secretary, not Director, General of the EACSO from 1962–64). I am more or less sure it was in Mr Adu’s interest as a Tanzanian that both Institutes in Mwanza and Amani would be preserved. This was the first of my interviews with him for my appointment as director of Amani. Present was also Dr Anderson of the EACSO, a white idealistic Kenyan national.

having the institute continuing as a research institute. So that, I mean ... where did that come from?

John: That was purely Pringle.

Jan: Yeah, sure.

John: It wasn't a consensus, it wasn't a suggestion by *anybody* else, but he simply *did* that; and he thought that that would be most easily *implemented* if the Director in charge of the whole set-up was the man in charge of the cows. I mean, rather like that institute in Uganda where the Senior Boatman and the Director were done by the same man, and they just changed hats, you know, according to where they were.²⁴⁵ But that was the sequence. It wasn't a sort of consensus, it wasn't British policy; it was simply Gerry Pringle, who as I said earlier ...

Jan: It must have been much more than that, that Garnham advised against my appointment!

Tony: Just let me say one last word ...

Wenzel: Can we just have one last word from Tony please, and then we proceed for lunch.

Tony: It's been very interesting, listening to this. When I went to Amani, as a fairly young chap, 1959, there was racism around me.

Dorothy: Sure.

Tony: Not by everyone, but by quite a number of people. Racists. [*Dorothy murmurs agreement, and continues to affirm throughout these comments*] Not openly, but when you're talking to them. And I don't know: how did they come to say such things? You know, call them by certain names, and ... there was racism, *quite* definitely. Please believe me! There was.

[*Quiet agreement from several participants*]

Dorothy: Yes, Hemingway²⁴⁶ was a bit ...

Tony: Hemingway! We shouldn't mention names ...

Dorothy: No; but he's dead now! He can't be ...! [*All laugh*]

Tony: ... but this is true; what John is saying is OK. But this ... if, for example ... Pringle wasn't there, but I didn't understand why the people were being treated in such a way, you know. [*Adopts an imperious, upper-class British accent:*] 'Where are you going? Come here!' In their voices. [*Various agree*] And when you were talking to them privately, you know, 'so on

²⁴⁵*John notes:* I was told this story after the expatriate mass exodus. It was a rumour – I doubt whether it was literally true. *Jan notes:* I think this is a reference to the LPR (Leprosy Relief Association) Institute, whose director, Yohana Otsyula, was more a private enterprising farmer than a research director.

²⁴⁶*John notes:* John Hemingway, another field officer, ex-Army, from Yorkshire.

and so on'.²⁴⁷ It all changed, over a period of time; but it was *well* and truly there!

And when they ... they became independent, it was after a few months, it all went wrong, and there was a rebellion; the expatriates were going *glowing* on, and *openly* talking about, 'Oh, what are they doing?' You know, saying things. So there was racism. [*Various agree*] And fortunately, it all dissolved. Not everyone; but quite a number of people. I always remember this chap: I was saying, 'Well, he's a nice, er, garden boy, but he's not very good at gardening.' [*chuckles*] He said: 'Oh,' he said, 'Oh, don't worry. Just say "*Kazi basi*",' which means ...

Dorothy:

'Finished with'. Yes.

Tony:

... "Your work is over". "Please go away".²⁴⁸ That sort of thing! Well, who would – what person would *do* that, you know? So this was racism, it was all around you. [*Various agree*] It really was.

John:

Actually, Hemingway, whom you mentioned – an *extraordinary* character.²⁴⁹

Lunch break

Wenzel:

We just would like to have free discussion on Amani, and the legacy, in a minute. That's why we have pictures up there [on screen]. But Frances and *Vyviennne*, you wanted to come with a little additional comment on the ...

Vyviennne:

Yes, it was just – sorry, but when John was talking about – I can't remember his name, who was objecting to standing by the road when the ...

Frances:

Pringle.

Vyviennne:

Pringle, when it upset him to wave when the Deputy President, or whatever he was, came ...

Frances:

Vice President.

Vyviennne:

Yeah: Fran and I sort of quite happily – well, I can't even remember which one it [was] we were on – we all stood in a row, with, with African colleagues, waving flags when President Nyerere came by.

Frances:

We did! Yeah!

Vyviennne:

And sang a song; sang the national anthem and everything! [*Various agree*]

Frances:

Yes, we sang the national anthem! He came to Muheza. For ...

²⁴⁷ Presumably, this represents interminable unpleasant comments about Africans.

²⁴⁸ 'Work has ended', or 'no more work'. That is, Tony's interlocutor advised him to simply dismiss the gardener without notice or explanation.

²⁴⁹ John completes this anecdote after the lunch break; see below. *John notes:* What Tony says is true. I agree that there was racism.

- Vyviennne: Yeah! So – with cameras, and ... [*Various come in enthusiastically*]
- Dorothy: So that just shows; you wanted to.
- Wenzel: So that was much later?
- Frances: Yes, oh yes.
- Dorothy: [*unclear*] in the '70s, wasn't it?
- Vyviennne: This was 1990.²⁵⁰
- Frances: I do remember, though this is going off on a tangent a bit, one of our scientific colleagues looked at the three pictures we had to have on our wall – President Nyerere, Jomo Kenyatta, and Idi Amin – and thought: 'I don't like Idi Amin, why should I have him in my lab?' [*general laughter*] And he removed him; do you remember, John?
- Jan: Oh, that was very rude.
- Frances: And the security people came! And there was a big *shauri*! [*Kiswahili: problem, row*] Yeah. And then finally, you know, they said, 'OK, you can stay, but don't do it again!' Do you remember this?
- Graham: Who was this person who didn't respect Idi ...?
- Frances: Oh, gosh; who do you think he was? [*laughter*]
- Jan: This one [*pointing to John*], here?
- Frances: It was our Canadian colleague.²⁵¹
- Jan: Oh, wow, I thought ...

[*Various participants chuckle*]

- Wenzel: Right, so what you wanted to bring to the discussion was that you had a very positive attitude to the new African government?
- Vyviennne: Yeah, because I felt I was a guest in their country.
- Frances [*in the background*]: A very positive ...
- Vyviennne: You know, I was *contributing*; but I was a guest in *their* country [*Others agree*], which is sort of three stages on from colonialism, isn't it? It was *their* country, it wasn't my country.
- John: Just to put that in very brief perspective, there *was* a change with time; but it was always diverse, and varied according to the individual.
- Vyviennne: Oh yes, yes.
- John: I mean, just before we finished for lunch, I was about to say that John Hemingway, whom Tony mentioned, just before independence, he said he was going [*adopts an urgent tone*]

²⁵⁰Frances had left Amani in 1977, and Vyviennne in 1974, so perhaps this was on a return visit. *John notes* that he has a memory of Nyerere visiting the general Amani area in the early 1960s, but not the Institute in particular.

²⁵¹*John notes*: Bob Dunbar.

- '*immediately!*' after independence. He was keen on Bagster-Wilson, the Director, because Bagster-Wilson was a sort of a traditional Brit. But anyway, John Hemingway said: [*adopting a strangled Yorkshire accent*] 'I'll walk down t'bloody 'ill,²⁵² wavin' the Union Jack, with Bagster-Wilson's sofa on me shoulder!' [*laughter*] And – I can't do the Yorkshire accent, but I mean – there always were individuals like that, and there were ultra-liberals at same time. So, diversity, and overall change with time, yup.
- Wenzel: Thank you, that brings it really nicely to close.
- Alister: Will you use that? [*laughter*]
- Wenzel: Well ... !
- Tony: Just one more thing: saying that, even in The Gambia, colleagues of mine have been known to show, you know, how awful they can be. And so, no matter wherever you went at that time, there was that element amongst – [*several agree*] there really was. OK, that's all.
- Wenzel: Well thank you. [*laughter*] Right, do you have to go, you two [*Frances and Vyvienne*]? Thank you very much for coming.
- Vyvienne: Oh, you're very welcome.
- Frances: Yeah, thank you very much everybody.
- Vyvienne: Yes, it's nice seeing you all again.
- [*various reply*]
- Frances: Yes, and meeting new people that I've heard a lot about and never met, like you [*to Dorothy*] ...
- Dorothy: Yes, we've also learnt about how Amani was later on, which we didn't know about.
- Graham: OK, see you at the centenary then!
- Frances: OK! Yes! [*laughter*]
- Jan: It was nice to meet you, really, and I *really* enjoyed it.

[*laughter and comments from several continue*]

- Katsuko: We can meet some time again, yes.
- Vyvienne: Well, we hope. And you, John. Keep up the letters, yes! [*Kisses*] And you as well.

[*inaudible comments and farewells*]

- John: You know, I'll sort of be more certain of whom I'm writing my Christmas letter to! Anyway, all the very best. That was brilliant, seeing you ...
- Frances: Super to see you! I'll enjoy your next Christmas letter!
- John:

²⁵²I.e., 'the bloody [damn] hill'. Yorkshire, a hardy region in the north of England, is famed for its strong local accent and the supposed directness, tenacity, and pride of its people.

And yours, which is *probably* the most humorous one I ever get ...

Frances: Ooh! And now I'll feel constrained when I'm writing my next Christmas letter.

Vyviennne: It's got to be ...

Frances: It's got to be funny!

[laughter]

John: Oh, funnier than a donkey on a high, narrow ledge is difficult [*Frances laughs*], but I'm sure you can achieve it!

Frances: Right. Right...

[*Frances and Vyviennne leave. Jan and Graham have a side conversation about the Dutch involvement in Kenya's Medical Research Institute (KEMRI)*]

Jan: But it is completely being non-expatriate now.²⁵³ It is still there, as a medical research institute, yes, but the Dutch have nothing in it anymore, for a long time.

Graham: KEMRI?

Jan: Ja.

Graham: KEMRI is a ... but there is no continuity. Some of my US colleagues are working in there. They've just come out with a fantastic paper, with all the viruses in Kenya.²⁵⁴

Jan: Focusing on viruses, is it? Oh, I see.

Graham: Yeah, I can help you find that, and send it to you. 'Cause you'd be glad to see the way some old arbovirus programmes did continue ...²⁵⁵

Jan: Yeah, yeah.

Wenzel: Right. We wanted to close the day by showing you just a few pictures of Amani; and ask you what you think, Amani's legacy is, and its future. So this [first slide] was when we went to Amani with John [in 2013]. We were fortunate to be guided by John. John points at some rare epiphyte, or ... [*in reply to a question*] Yes, this is the *Boma*, I think, the corner of the *Boma* [Director's house].

²⁵³Now a Centre for Public Health within the Kenya Medical Research Institute, the department Jan and Graham are discussing was previously known as the Medical Research Centre. It was managed by the Royal Tropical Institute of Amsterdam until 1987, then handed over and was renamed in 1995. A plaque commemorating this MRC still remains at the KEMRI offices. See: <http://www.kemri.org/index.php/history-a-mandates>, accessed 2 January 2015.

²⁵⁴Ochieng, C. et al. (2013) Mosquito-borne arbovirus surveillance at selected sites in diverse ecological zones of Kenya; 2007–2012 *Virology Journal* 10: 140–150.

²⁵⁵*Jan notes:* But what about the East African Virus Research Institute? (Presumably, this is either a question about the fate of this institution, now the Uganda Virus Research Institute; or a concern about duplication between regional institutes – a point Jan makes in the conversation about Amani's future.)

[Exclamations of surprise]

- Dorothy:* it doesn't look like a bit like the *Boma*. [laughs]
Wenzel: This is just to give you some idea of what it looks like today. The next slide shows some of the people, who all recognised John. He was a very well-known feature, and even children who were not born at the time would know about him.
- John:* 'Kidevu!'²⁵⁶
Wenzel: 'Kidevu, Kidevu!' [laughter] On the next slide, though, you can see that many of the facilities, like the library in this case, are pretty much untouched since the '70s; this is Matola finding some of the papers he published, in the paper collection ...
- Dorothy:* He's lost weight! Goodness! He was so plump, and round.
Wenzel: You see not much has happened since these papers were archived in the '60s and '70s. On the next slide: we went into John's laboratory and found most things almost untouched ...
- John:* That's right.
Wenzel: ... including the collection. I mean, they were touched by termites or insects but not touched by ...
- Tony:* They've probably eaten the results and everything.
Wenzel: So we found Steven Fedha there, who together with us explored the lab, and ...
- Graham:* He's got a new hat. [laughter]
Wenzel: And ultimately, as can be seen on the next slide, we found that not much was going on there. John has already told you some of the stories about the grass being kept, the roads being kept, but no work to be done. Which then raises the question of what actually your work in the '60s and '70s has achieved for African science, and Tanzanian science, and how this present situation of Amani relates to your aspirations in the '60s and '70s. We were wondering whether you could comment on this. I know, Jan, you wanted ...
- Jan:* Difficult to really ... ja. If I look back now, I think what's the *real* important thing that that has happened, I think it's the fact that socially, we changed the situation, in the sense that women started taking part in the institute, like Margaret Muniss, and the ones that followed her; but I was particularly proud once I heard that, what's her name ... [someone supplies: *Martha* ...] Martha Lemnge was appointed the Director, and I thought 'Oh! That's really what we went for, that's the culmination of it.' And still if we look back, that's for me the best part of it.

²⁵⁶ 'Beardy' in Swahili – John's perennial nickname in Amani. See Geissler, P.W. and Kelly, A.H. (2017) 'Kidevu's return', in *Traces of the Future*, pp. 150–53.

Then, if you think about the technical side, yes, we started something, like with the immunofluorescence at that time,²⁵⁷ which was said to be something you couldn't do. I still remember, I got from Bruce-Chwatt in Geneva,²⁵⁸ I got a letter and it said: 'This absolutely is the *wrong* approach, you shouldn't do that, and ...'. Then, anyway, I was committed, so we went on; and he was very fair; after about a half a year, when he had heard from different people that things were going well, he did send me a letter and he said, 'Fine, I'm coming to have a look at it.' So he was very good in that sense.

So I think *that* has given at least a start to a modern research institute, even if I am not responsible for that at all; but still, there is a Tanga now, a research institute which is in all senses a very up-to-date, modern institute. So I think that's part of the input that's been there.

Ja, but for the future of the [Amani] institute, I think I would refer to what René told me: that the Institute since German times has made its ups and downs in all different kinds of ways, and I think this is a phase again where the Institute is looking at a new future. And I think very much the ecological movement should get a hold on it [*Dorothy agrees*]; I think in that sense, it will gradually have a future. I realise that now there is the group of tourists coming in, there are students occasionally coming in, and so you can see, if they just work on it, that might be quite an important future for the Institute.

So I hope – no, not only hope: I am quite sure, that that Institute will continue in that sense; I am quite sure about it. It was solidly built by the Germans, so you can hardly destroy it! [*laughs*.]

²⁵⁷ *Jan notes*: The immunofluorescence technique is based on reacting a fluorescence-labelled, specific antibody with its antigen. I.e. anti-*Plasmodium fieldi*-labelled antibodies with *P. fieldi* antigen (parasite smears). As *P. fieldi* also reacts with *P. falciparum* antibodies, one can block *P. fieldi* antigen with antibodies in the blood of members of a select population and theoretically establish the *P. falciparum* prevalence in the population. This gives an insight into the parasite pressure on the population. Like the spleen rate, only much more sensitive. (In an informal conversation, Jan noted that some in the WHO establishment viewed attempts to apply this laboratory technique in Amani as a waste of time.)

²⁵⁸ Professor Leonard Jan Bruce-Chwatt was a malarial entomologist of Polish descent who escaped to London from a prisoner of war camp during the Second World War, and became a prominent scientist within British imperial malarial research. In 1948 he married a British woman, Joan Bruce, and added her name to his own. He joined the WHO in Geneva 1958 as Chief of research and technical intelligence in malaria eradication, then returned to the LSHTM as a member of staff in 1967. After retiring from the LSHTM, he continued to research and write at the Wellcome Museum from 1974 until his death in 1989. See <http://munksroll.rcplondon.ac.uk/Biography/Details/625>, accessed 15 January 2016.

- Dorothy:* Yep. We need David Attenborough²⁵⁹ to go there, you know; he should have gone there, shouldn't he?
- Graham:* Yeah.
- Dorothy:* With the [TV] programme, and people would say, 'Oh! Let's go there!' You know. [*Chuckles and comments from others*]
- Graham:* People like that would be very good.
- Jan:* Ja.

[*Pause*]

- Graham:* Hm. The *facilities* demand a new owner, an appropriate *scientific* kind of owner; or you could convert it even into a proper tourist centre, a *real* tourist centre. And then you'd have to get some investors to put up a cable car so you don't have to drive up there. [*Others laugh*]
 [*Protesting*] There are places like that even in Australia, where the visitors go to the top of the hills by cable car, and have holidays and come down again. So there is a lot of potential, it just hasn't been *offered*. It needs a top decision at government level to make it available, for *property* for proper development and use, or to designate another appropriate department. And I guess most of us would be happy to see the forest reserve people [*others agree*] taking it up and turning it into part of the bio-climatic agenda. So am not doubtful that it can, and *should*, be used in those ways; but all the time we've known it, it has *not* been used to the best advantage. Even in our best times, we all sat thinking, 'Well, should we amalgamate with, or go to Mwanza [*Jan agrees*] – because they have better roads? Should we justify the improvement *of* the road?' – which frankly today is almost *less* likely than it was in the past.²⁶⁰
 So someone ... if in some nice way our experience and respect for the place could translate, in this project, to *some* written recommendations that it just *needs* someone to grab it and use it better. Because it *is* so sad. Though it's not unusual to find ageing ... you could go all across the Amazon and find these kinds of places [*Jan agreeing*], that used to be great under Portuguese rule, and nobody wants to bother today in that part of the Amazon. So I'm not seeing it as unique in its physical neglect; I do see it as unique in its *achievements* in those periods: the forestry under Germans, the forestry under British, and it could just be forestry again under proper Tanzanian leadership.

²⁵⁹Sir David Frederick Attenborough, born in 1926; a famous British naturalist and documentary-maker.

²⁶⁰*John notes:* There *have* been minor improvements.

- Jan [who has been agreeing throughout this]:* That's why I say: you mentioned physical neglect; I think this Institute is still very well looked after [*others agree*], if I look at the photos and the films. I mean, I'm surprised how well they maintain the environment, and that some of the essential parts like the cattle herd, is still there [*Dorothy agrees*]; and that they are looking after the place. So there are all kind of things that give me great hope that this institute is not like the ruins we have found in other places. It's not going to be a ruin in the end.
- Graham:* But we mustn't allow you [Wenzel] getting the impression that we are not pleased about the productivity of what we did in our times.
- Jan:* Yes; no.
- Graham:* John's the *best* example, because he was simply transplanted to West Africa, and Jan carried his capabilities to a number of centres in the short term, and basically he, he upgraded the work, what the WHO TDR program was capable of.²⁶¹ We need to explain to you what that is if you don't have experience of it. And in my own case I'm always pleased to see that ... I'd like to think of the gap getting narrower all the time, of what we demonstrated about the vectors in my time there, when I was on the back of the giant ... Gillies programme.
- So you don't expect to find Wilkes doing parous rates²⁶² any more in the same place; it would be tedious to see the same old techniques applied in the same old ways; we *know* those answers, and they have been disseminated into our scientific field. And I am often impressed right now, with online

²⁶¹WHO, Special Programme for Research and Training in Tropical Diseases, set up 1974, contributed greatly to transnational research and training activities across Africa, and funded course activities, as well as research and overseas training for Amani during the 1980s and 90s. See <http://www.who.int/tdr/about/history/en/>, accessed 18 January 2018.

Jan notes: I became a member of the first WHO TDR in Geneva.

²⁶²A measure used in the mathematical modelling of mosquito populations – see Gillies, M. and Wilkes, T. (1963) Observations on nulliparous and parous rates in a population of *Anopheles funestus* in East Africa, *Annals of Tropical Medicine and Parasitology* 57: 204–13. *Graham notes:* To determine if a female mosquito has laid eggs and become parous, you look into the ovaries to see if they have stretched (Detinova method), and you count the number of dilatations on each follicle in the ovary to see how many times she laid eggs (Polovodova method). The latter is a rare skill in which Tony is world expert. By counting the proportions of 1-parous, 2-par, 3-par, 4-par, 5-par (Polovodova numbers) and the whole proportion parous (Detinova proportion), you can measure the daily survival rates of female mosquitoes; hence you can age-grade the whole population sample, thus you can estimate the proportion surviving long enough to become infective and transmit malaria or filariasis (depending on temperature) and so you can observe reduction of survival rates after insecticidal spraying of houses (so-called 'indoor residual sprays') in order to stop transmission. Usually fewer than 80 per cent of female *Anopheles* are parous in any sample; if you cut the parous rate below 60 per cent you can prevent malaria transmission. See: Kelly, A.H. (2017), 'Remembering a sovjet method', in *Traces of the Future*, pp. 136–39.

- publishing, I can show you 20 papers in the past month published online that integrate what we provided.²⁶³
- Wenzel:* So it lives on elsewhere?
- Graham:* It's become pan-African and global, the principles of what we established. And I should just pay the courtesy comment, that what Harry [Kortmann] did ... people are still *raising* those questions. [*Various others agree*] I see it, and *often* in America, in big places, I interject, I say, 'But, have you seen Kortmann's work?' And of course they say no. [*Others agreeing and remarking*] But the answers in *that* great document [*referring to Kortmann's thesis, which he brought to the seminar*] are still being new *questions*, that people are asking me in many parts of this global malaria ... you know, we're in a renaissance of global malaria commitments. And nothing we did is ... is wasted.
- John:* Absolutely, that is the answer to Wenzel's question, how work at Amani contributed. You've explained very briefly but lucidly that it contributed a great deal, in many cases, to totally different parts of Africa and wherever.
- But the other question we've been asked to answer is ... what to do with it *now*, and there are all sorts of possibilities. But the *basic* problem that nobody yet has solved, is: *how* can you get the Institute working again, if people are not prepared to live there? I mean, could an outstanding school be built there or something [*Dorothy agrees*], to *facilitate* the possibility of them staying there and working there? I just don't know.
- There's a logic behind forestry being involved, and of course it would be whether if it was a forest station or a natural ... nature reserve; or somewhere doing research on medical products from forest plants.
- Dorothy:* Yes, yes.
- John:* Which is what *they* have discussed, you know, the Tanzanians have discussed that as a possibility. Now, the latter suggestion would work, *if* there was sufficient co-operation with places where they *have* experience in that field ... Graham knows much more about that than I do. But you do have this problem of getting people to live there, because with the present road [*Dorothy agrees*], you can't really live in Tanga and work in Amani, especially in the rainy season.
- Dorothy:* It could be part of the Dar University, like Silwood Park is to Imperial College.²⁶⁴ Amani to Dar es Salaam! So that ...

²⁶³*Graham notes:* For example, just search PubMed for 'ELISA!' (www.ncbi.nlm.nih.gov/pubmed, of the US National Library of Medicine, accessed 4 February 2016.)

²⁶⁴A centre for research into pure and applied ecology, which became part of Imperial College in 1947, originally as a centre for applied entomology; located 25 miles west of Central London where the main Imperial College campus is based. See: <https://www.imperial.ac.uk/visit/campuses/silwood-park/>, accessed 23 January 2016.

[Various others respond]

Graham: A field facility.

Dorothy: A field station, yes. A field station for the university. Or, perhaps – those next-door, in Kenya, they might want to use it as well, as a field station. Because the labs are down there. Labs and houses ...

Graham
[unclear]: ... make recommendations in the deans' office of Morogoro University and Kilimanjaro University. [Dorothy laughs] I'd say we ...

John: In a sense, that's always been done to a significant extent, but it hasn't really been described, because it wasn't the main purpose of the Institute. But there have always been naturalists coming up – in fact, in the old days when they had one bath, not two or three showers as they have at the moment, in the Rest House, it was often difficult to get a bath because the bath was [full of] snakes and frogs, or whatever they had collected ...

Dorothy: Well, the water was brown.

John: Well, you know, the water was brown [Dorothy and someone else make a couple of side comments], but I mean there were all these animals collected. So there was always that interest, and I remember [the university of] Dar es Salaam coming up once, doing a zoological survey of the forest. In fact that's how I found the tree-hole crab that somebody named after me.²⁶⁵ A student put his finger down a hole and something bit him! [Dorothy laughs] And he sort of leapt off the tree, and said, 'Something bit me!' And I thought, 'Well, that's strange; what could have bit, in there?' [laughs] So I went up and found that there *was* a tree-hole crab, and I think it was the only one *known* in that area at that time. I think the only other known one was somewhere in the West Indies or something.

Anyway, it's always been used to *some* extent, but if it could be sort of *advertised* and *clarified*,²⁶⁶ with significantly increased usage, that I think would be very good. And that's happening with the nature reserve side [*someone agrees*], but involving East African universities as you suggested [Dorothy starts to reply, agreeing] would be a good idea.

²⁶⁵*Potamonautes raybouldii*, a now endangered species of freshwater crab, which lives in water-filled tree holes in the Eastern Usambaras. See: https://en.wikipedia.org/wiki/Potamonautes_raybouldii, accessed 15 January 2016; and Cumberlidge N. and M. Vannini (2004) Ecology and taxonomy of a tree-living freshwater crab (*Brachyura: Potamoidea: Potamonautidae*) from Kenya and Tanzania, East Africa, *Journal of Natural History* 38: 681–693, which pulls together field notes from various teams to compare to other species.

²⁶⁶*John notes*: For wildlife studies, that is.



FIGURE 24A Wedding of Tom and Billah Fletcher, late 1950s (Super 8 by Mick Gillies). Figure 24B. Wedding of Katsuko and John Raybould, 1972 (personal collection, John Raybould).

Jan:

You could, I think ... ²⁶⁷

Graham:

We *must* make the point that the endemism²⁶⁸ is so *great*. If you are in biology, the number of endemic species on the Eastern Usambaras is *very* high, I think the highest index you can find in any of those mountains. [*Various agree*] And, of course, it's vulnerable; it's very small, so any advocacy for its future in a bio-evolutionary, -climatic context, [must emphasise that] it's not just 'a nice place on a small mountain'. It's a *specialty endemic* place. For example, it's hard to say this because it sounds silly, but there's no parallel: there are six known species of mosquitoes there, which don't occur anywhere else! [*Various agree*] There is nowhere else on the planet with that level of endemic mosquitoes! And it's the same for frogs and lizards and crabs²⁶⁹ and so on. So ...

John:

I mean for violets, African violets, you know...²⁷⁰ where else... ?

²⁶⁷Jan notes: My point was that it's up to the Africans to envision what to do with the Institute, if anything at all, within their future research policies.

²⁶⁸i.e., the extent to which a species is ecologically unique to a defined geographic location.

²⁶⁹John notes: And birds.

²⁷⁰Jan notes: In fact, the violets occur at the Northern side of the Usambaras, quite removed from Amani. But John notes: I remember them being at Amani when I worked there and during my recent visit I saw them only a short drive away.

John notes: And the Nduk eagle owl, *Bubo vosseleri*. (See the description of Graham's observations, and concerns for the species due to forest clearance for cardamom cultivation in: White, G. (1974) Rarest eagle owl in trouble, *Oryx* 12: 484-6: 'Five [...] immature Nduk eagle owls have been found in recent years [...] The first three of these were each brought by local people in 1969, 1970 and 1971 respectively. The other two, as reported to me by Dr J Raybould, were found in January 1972 and 1973 respectively; all were flightless downy youngsters. My wife and I kept the 1969 bird as a house-pet, feeding it exclusively on rats and raw beef wrapped in cotton wool, until we left Amani in September 1971; it is now in the London Zoo [...] Unfortunately, the 1970 and 1971 birds were not treated well enough to survive; the 1972

- Graham:* I had thought that the [*Dorothy starts to comment, but stops*] World Wild Life people, or whatever, had got it more and more classified as sacred. But we are sitting here worrying about how to use the best facilities in the most sacred place!
- Jan:* I think that maybe, now, and I was thinking we should move away from these academic kind of connections [*someone agrees*], because I think the place is far too grand to serve as a field station, for instance. All these buildings are unnecessary. One of the buildings could be worked out as a very efficient multi-purpose building; in that sense, the site is not suitable, I think, for bringing in people for a particular research project. And on top of it, there is the chance that we start duplicating, which we have been doing all the time, duplicating institutes.²⁷¹ So if you say they could look, for instance, at local products that could be used in medicine, etc. I mean there are already numerous institutes doing this, and I *don't* think there is a need for another one to do it. So, I personally *still* think if Amani has a future, it should be developed on the basis of commercial eco-tourism, etc. And then, plugged in with that, studies by people that might have a special project on it. [*Dorothy agrees*]
- But, the basis should be sound economically, I think, as a commercial thing, that *attracts* people, that attracts *groups*; and then the buildings could be easily used as a kind of hotel. That's the only future, I think, for it.
- John:* I would add just one word to that: eco-tourism, and *conservation*.²⁷²
- Katsuko:* Conservation, yes.²⁷³

bird died after two weeks, but the 1973 one survives in the care of Dr Theo Goosens, a Dutch medical officer living at Amani'.

Graham notes: My eldest son Oliver still keeps his photo of our *Bubo vosseleri* called 'Oohlooh' on display. When Oliver was a baby lying in an old-fashioned pram on our veranda in Amani, Ooloooh spent long hours perched on the pram handle watching over Oliver sleeping. When Ooloooh was a fluffy chick from the nest, he was found by one of the Amani lab staff who went for a drink at the Amani town bar with this owlet perched on his shoulders. It was Christmas Eve 1969 and I popped into the bar for a beer with the villagers. Seeing this lovely owlet looking bewildered, I asked the guy what he was going to do with it. He said it would make a nice extra for his family Christmas pot-luck. I protested and said I wanted to buy it. He was glad to have the cash, and I was thrilled to have the owl. Only later did I recognise its significance for being the long-lost species named after the first German Director of the old forest station. Recently ornithologists have reported more of them – see [file:///C:/Users/Cheki/Downloads/Usambara%20Eagle-owl%20\(Bubo%C2%A0vosseleri\)%20-%20BirdLife%20species%20factsheet.pdf](file:///C:/Users/Cheki/Downloads/Usambara%20Eagle-owl%20(Bubo%C2%A0vosseleri)%20-%20BirdLife%20species%20factsheet.pdf), accessed 7 February 2016.

²⁷¹ *Jan notes:* For example, a WHO TDR medical research institute was started from basics in Ndola, Zambia in the '70s.

²⁷² *Jan notes:* The Germans seemingly doing this already?

²⁷³ *Graham notes:* Katsuko Raybould was a plant ecologist and came to Amani as a Japanese volunteer, to make an inventory of the introduced trees and maybe other herbs – species experimentally planted by German and British horticulturalists under previous administrations. The

Graham: The crops that are so productive there are fairly well known, but it seems as if nobody has really industrialized the production of them. And by that I mean the latest one I heard about from René,²⁷⁴ that quinine is getting more popular.

[*Others agree*]

Graham: So we're talking of a crop that was introduced there a hundred years ago, and which, he tells me, there is a kind of *competition* to take out at the moment, because it's so precious.

Jan: There's a special interest now, in quinine from Amani.²⁷⁵ [*Chuckles. Jan and Graham talk over each other in what follows*]

Graham: Yes, and in our time, the latest thing that was so popular was the *iliki* – that's the cardamoms.²⁷⁶

Jan: *Iliki*, it was already cultivated there long ago. It was nothing new there that *we* discovered.

Graham: Yeah, but it became fashionable in our time. And the problem of what we saw was the taking out of the mature trees to have a certain limited shade for the *iliki* [*Jan is agreeing*], and all of these ... And the pricing of the cardamoms was very strange in our time. Because the border was officially closed, because of the breaking-down process in the Community, and the people knew that if they packaged it and took it quietly at night into Kenya, they could get five times the price than the regulated government price in Tanzania. [*Others agree*]

Jan: Ja, because of the socialist system; they had to operate in state organizations.²⁷⁷

Graham: And so that made cardamom terribly popular. So I don't know what the next fashion crop is going to be; it could even be something like artemisinin or something.²⁷⁸

Tony: It's actually growing in Tanzania, isn't it?

Director (Jan) gave her a nice small house where John would pass by each day *en route* to Amani offices, so he could give her lifts to/from the library. Hence the Raybould family.

²⁷⁴Rene Gerrets, one of the researchers of the MEREAF research team, who had extensive informal conversations with reunion participants on the previous day.

²⁷⁵Jan refers here to an informal conversation with Rene Gerrets, who has written about current usage of the century old Cinchona plantations of the originally German botanical gardens at Amani. See Gerrets, R. (2017), 'The botanical gardens', in *Traces of the Future*, pp. 162–73.

²⁷⁶A relatively new farm crop in the area, which has become highly successful in the past decade, with steadily growing prices. Many of the old Amani staff have invested in growing cardamoms, because they have had access to land and to a stable salary, allowing them to wait for the crop to become harvestable.

²⁷⁷*Jan notes:* It could only be sold via these state organisations, which were very inefficient and corrupt.

²⁷⁸A substance occurring in the plant *Artemisia annua*, sweet wormwood, which, along with synthetic derivatives, provides rapid action against *Plasmodium falciparum* malaria and is also used in some cancer treatments. Artemisia extracts have been used in Chinese traditional medicine

[Several people agree]

- Graham:* Artemisinin is cultivated industrially on Kilimanjaro. Yes.
Wenzel: Tony, what is your take on the legacy of Amani?
Tony: Yes, well, that's an easy one, the legacy of Amani. Since I was there, '59, until I left, about seven or eight years later, I learned so much from so many people. There was so much good work coming out. And that's been the case. When I came back in 1987 [to work in lowland Muheza], it was still the same old Amani – the forest, the views; the houses had changed a little, and ...

[Dorothy makes a joke, inaudibly]

- Tony:* But the place was neglected; it was *dying*. I used to feel embarrassed to take people up who wanted to look around Amani, which they'd read about, because it'd be laboratories with people ... empty laboratories, with people just sitting around; nothing was being done. [It's] a question of money – of getting grants, of course. It was rather – well, you know, *difficult* to live with this: how can it *get* to this state? And when we're talking now about: 'Yes, well, can it be uplifted? Can it get back to something like that? You could diversify maybe, use it differently...' And when you *think* of the people, the Directors who have been there, the work they've done, how good it has been; Graham, with his *Gambiae* complex, and his – someone mentioned that – that was something absolutely marvelous; we only knew *Anopheles gambiae* when I went. By the time I had finished there, we were talking about four different species! That's all history now. Gillies' work on mosquito biology and behaviour, which we ... he used to take further when he got back to England. [A] tremendous legacy; went on for such a long time; the grant from the MRC, of something like 20–25 years. It was a pleasure to be involved *in* that. I'd like to *think* that Amani is going to thrive again. And what John says about 'people don't want to go there', that's the very reason the British²⁷⁹ wanted to go there: you always go on a hill, you get nice views and the climate is a little better.

[Others agree]

It would be nice to see ... I don't know, I just *hope* that something can be done. It's had a wonderful past, not only with

to treat malaria for centuries. See: <https://en.wikipedia.org/wiki/Artemisinin>, accessed 15 January 2016.

²⁷⁹ *John notes:* And also the Germans before them.

the medical aspect, but also the agriculturists were there, the Germans were there; they labeled all the trees [*Dorothy: With names*]. Everything was left really ship-shape. And let's hope that Amani can gradually get back to what it was.

Jan: OK, what I would like to bring up is one thing, that maybe should be brought to the fore: what happened when Philip Wegesa started to destroy – demolishing the one old lab? Why did he do it? I mean he was an African, so he must have had some vision about it, and he wanted to demolish the old building that was there, and make something new for it. How does *that* fit in somewhere future of the thing – is that something – from the African side? You could say...²⁸⁰

Graham: Well, I'm glad they didn't build the silly...

Jan [persisting with his point]: Ja, OK ...

Graham:

... artificial replacement, and I know why he took it down: it was because it was conspicuously the *oldest* building, it was more or less an adobe plaster structure, with timbers from German times. So it wasn't a very *grand* German thing, and it was dingy inside. And *he* felt that he'd been put in it, even by you [addressing Jan], as the worst lab; and even if that's not ...

[*Others cut in in protest*]

Jan: I'm *not* aware of that at all, no ...

Graham: I do know that when he decided to take it down, I recall him taking discussions about 'We're gonna replace that filthy old smelly dump of a place with a nice big posh new place'.

Jan: Ja, but I was bringing [it] up in the sense of the heritage idea. I mean: is there something that *we* are talking [about], in the form of heritage of this magnificent Institute; but how does that relate to the *African* view of the Institute? Do they have any value on heritage that way? Because – in that sense: *why* did Philip start taking down things?

John: Well, I think it's part of ... I mean I'm not sure whether or not Graham is entirely right, because I don't have the details, but he would have a better memory than me, so he may well be correct. But I *would* go so far as to say that it may *well* be part of the idea that you want modernisation and sophistication, even if what you're knocking down has

²⁸⁰*Jan notes:* That is, was he looking for something that would be more appreciated from the African side? It seems to me that our value system is not necessarily that of Africans. They may not want to preserve this or that beautiful but colonial inheritance. *Ergo*, we should be careful about pressing our Western point of view, even if to us it seemed a good old solid building.

stood the test of time, and would survive for hundreds of years.

There *is* a tendency at certain times, in the history of different cultures, where people say ‘Ooh yes, we don’t want brown sugar, we want this white refined stuff.’ And, ‘We don’t want old-fashioned buildings, that sort of look neo-Arabic, and don’t have a lift; you have to walk upstairs.’ There may have been an element of that. I mean I’ve no real reason for saying that, because I don’t know whether it was Wegesa who *instigated* the idea of a new, modern building, or whether it came from headquarters; I think Graham’s got more information on it, but it certainly *happened* in his time, so he obviously wasn’t strongly *opposed* to the idea.²⁸¹

Tony: That, that, that was *my* lab! [*Others chuckle*] No, I was in it for seven years, dissecting something like 10–12,000 mosquitoes, [*John: Yes*] and it was a lovely lab! [*Dorothy agrees*] It was cool, it was you know – it was big –

Dorothy: High ceiling.

Tony: High ceiling; and you could see all the people who came from the Rest House. [*All chuckle*] And, talking to Matola,²⁸² I said, ‘*Why* did you knock it down?’ They knocked it down because they *thought* there was going to be a WHO training centre.²⁸³ Now, whether that was right I don’t know, but it never got off the ground ... well, it couldn’t because it was *knocked* off the ground. [*Others chuckle*] But why? The Germans used to build things to last a long time.

[*Others agree*]

Dorothy: Yes, I think all the houses ...

Tony: I am not getting at Jan for choosing that one, but when I got there, I said, ‘Where’s is my lab?’ I panicked. [*Others: Yes.*] ‘Oh, it’s gone, where’s it gone? *Why?*’ I thought, ‘Has it been burned down? Because it was an *extremely* good lab; and it was ... it had got an annexe, where they used to do a lot of work for the library, didn’t they?’

²⁸¹*Graham notes:* Unfortunately, Philip’s effort to upgrade the Amani labs resulted in the destruction of the oldest lab (next door to the Rest House) but failure to get funding for its replacement. So that plot remains empty to this day. Later the Finnish investment in forestry led to creation of new facilities along the road to Kwamkoro.

²⁸²Possibly at the 50th anniversary celebration of the Amani Institute.

²⁸³This hope was not entirely unfounded; the WHO Tropical Disease Research (TDR) programme, established 1974 had, especially in its beginnings, a strong emphasis on capacity building and did collaborate with the Amani Institute. The collapse of the East African Community, and diminishing willingness of international organisations and donors to invest into long-term institution building and lasting infrastructure prevented these hopes for Amani to materialize. See <https://www.who.int/tdr/about/history/en/>, accessed 27 March 2019.

[*Others agree and start coming in with reminiscences about the lab.*]

- John:* It had more character than any of the other labs, actually.
[*chuckles*]
- Dorothy:* That's right.
- Tony:* So, really sorry to just go on mulling over this, but I liked that [lab]. It's something that has been – part of your life, you know. [*Others agree*]
- Wenzel:* What do you think, Jan? You brought this very interesting subject up. Why did they knock – why did Wegesa or whoever do that?

[*Jan starts to reply but Graham jumps in*]

- Graham:* He was deluding himself that it would be simple, once the space was clear, to justify the funds to build something better. But I'm, personally, fairly sure about his intentions.
- Jan:* No.
- Graham:* And it is fascinating; John claims to have seen the drawings for the new construction, while sitting there in the [Amani] library.
- Dorothy:* Oh, they had that?
- Graham:* So all the parts of the story fit together.
- Jan:* Ja.
- Graham:* It's a question of the *motive*, and the failure to deliver.

[*Others agree*]

- Jan:* Ja. And at the same time, I think it also fitted in Philip's idea of modernisation. Philip, I remember still, when he took over the *Boma*, the first thing he did was get out all this [old] furniture. He wanted *Ikea*-type furniture. So that ... [*Others comment in surprise*] No, but it's typical: he wanted to modernise the place. [*Others agree*] So that's the important part.
- Graham:* It's a good job they didn't knock down the building [the *Boma*]!
- Jan:* Yeah, so he might, he *might*, in the end, have done that; and even now the *Boma* still traditionally is a place that is ... that hardly can be touched. I mean there is still these ideas of all kinds of spirits going around, and Africans not wanting to live in it. It is still there! But ...
- Graham:* It's actually an opportunity. I believe the space [of the old lab], when you see it as it's positioned next to the Rest House, it's a great opportunity. If we took a vote amongst ourselves, what to put there: a visitor centre? With a proper display? Double the size of the Rest House? So many things!

[*Others are all responding*]

- Jan:* And make sure that we get all kinds of tourist organisations, or – how do you call it – eco, eco projects.

Graham: If you ran a bar, you couldn't make a loss; if you ran a burger bar!

Jan: Ja. But what I was raising is: how do the ... how does the idea of *heritage* for these old institutions register with *Africans* in general, with ideas about *their*, *their* continent, *their* future, *their* country? So, it might be that we have quite different views in that sense, quite different opinions.

[*Others are still brainstorming*]

Graham: I would put a tower, 100 feet, with a platform for viewing.
Dorothy: It's the same with the house in Muheza. When Tony and I left, Caroline took over with her African husband,²⁸⁴ and when we went ... She was away for a while, so we went back to take over the project. And when I went back: 'What's happened to the garden?!' I had beautiful bananas, big yellow ones, big red ones; and I had planted a *lot* of things in the garden, even near the back door; the most wonderful moonflower that came out every night. *Everything* had gone, all; the flowers, the bushes ... And I said: '!' [*imitates inarticulate astonishment*]. [*Pretending to be Caroline, in response*] 'Well, our children; it might be dangerous for snakes and things.'

Graham: Well, Caroline didn't touch the garden,²⁸⁵ clearly. [*They start talking over each other*]

Dorothy: Somebody did!

Graham: She's a very nice middle-class English woman from Reading, and ...

Dorothy: Well, she had someone to do it for her.

Graham: ... and it didn't matter to her.

Dorothy: Great big banana trees; a big stand of them there ...

Graham: She was formidably active in her research.

Dorothy: ... *chopped* completely; gone.

Jan: But the question stays, somewhere: what's the relevance of our discussion here about the future of the Institute, if we don't ... if we are not Africans? And we ...

Graham: I think the Darwin Centre needs to get involved.

Wenzel: I think you've come with a beautiful closing question in a way here, Jan. Something we can take with us to Tanzania when we do a similar reunion in Tanzania; because the question is what the point might be, with heritage, or what might be beside the point. It's certainly a question that should be

²⁸⁴Caroline Maxwell, British entomologist affiliated with the London School of Hygiene, who ran the London school entomology programs in Muheza in the 1980s and 90s. See, e.g., Maxwell, C. A., W. Chambo, et al. (2003). Variation of malaria transmission and morbidity with altitude in Tanzania and with introduction of alphacypermethrin treated nets. *Malaria Journal* 2: 28–28.

²⁸⁵I.e., wasn't interested in gardening.

taken forward there. So I'm grateful that you closed with that, and also that you closed with this really interesting issue of the disappearing lab, as it were, to highlight this issue.

Graham: What is best to replace it? I think a viewing platform, 100, 200 feet high.

[*All talk at once*]

Jan: There will be rockets today hitting the moon from it!

Graham: Well, they have one that the Indians [here: native Americans] have built in one of the Indian reservations on the banks of the Grand Canyon! They've done a bigger, better viewing platform on the Indian reservation than all the other tourism places for the Grand Canyon! So ...

[*Various speculations continue*]

Wenzel: There might be futures, but there is now, above all, a train you want to catch, in a short time, so I think I want to thank you very, very much for your patience with us today, especially, chasing you through the day, and asking, and keeping going; but it was very, very useful for us to learn and to have you here. Thanks to all of you that you travelled all the way and spent these three days with us.

Dorothy: Well it's been worth it! I mean, even though we missed the first day – you know, if we hadn't have come, it would have been awful.

Wenzel: I was very happy that you came.

Jan: And I think on our side we should also thank you very much, really, for some *really* interesting days that we had together. For the fact that we could meet up after so many years. [*All agree*] We had very good time in the sense of 'Hurrah! We had that!' [*Others agree*] And so, I say, we should really go back home and say: 'This was fantastic.' Thank you very much, and that's to you, and to all of you. Thank you very much!

End of seminar