The Adler Museum of Medicine was founded in 1962 and was situated in the grounds of the South African Institute for Medical Research, Johannesburg. It is now housed at the University of the Witwatersrand's Medical School Campus in Parktown, Johannesburg.

In June 1974 the Museum's co-founders, Drs Cyril and Esther Adler, presented the Museum to the University of the Witwatersrand which named it the Adler Museum as a token of the esteem in which the founders were held by the University. In addition, the University bestowed the degree of Doctor of Laws (honoris causa) upon Dr Adler and the degree of Doctor of Philosophy (honoris causa) upon Mrs Esther Adler. Until Esther Adler's death in 1982 she was the Museum's Honorary Curator while Cyril Adler acted as Honorary Director of the Museum. From 1982 Dr Cyril Adler was appointed by the University as Director/Curator of the Adler Museum, a post he held until his death in 1988.

1975 saw the inception of the Adler Museum Bulletin, the brainchild of Mrs Rose Meltzer. Mrs Meltzer produced the first edition single-handedly and she continued to edit it until her retirement in 1991 and was editorial consultant until her death in 1992.

The Museum contains interesting and invaluable collections depicting the history of medicine, dentistry, optometry and pharmacy through the ages. Items of medical historical interest on display include microscopes and other scientific instruments, early bleeding and cupping equipment with an exquisitely crafted incision knife, ceramic pharmacy jars dating back to the 17th century, a collection of bone china and ceramic feeding cups, some dating from the 18th and 19th centuries, an early 19th century wooden handled amputation set in a wooden case, diagnostic and surgical instruments, treatment apparatus such as one advertised as 'Patent magnetic electrical machine for nervous diseases' used by Queen Victoria to ease her rheumatism (19th century) and the first electrocardiograph machine (1917) used in the Johannesburg General Hospital, the original artificial kidney machine used in South Africa, early anaesthetic apparatus, ear trumpets and brass ear syringes (early 20th century), hospital and nursing equipment and medical ephemera.

There are reconstructions of an African herb shop, a patient consulting a sango (traditional healer), and a 20th century Johannesburg pharmacy, a doctor's consulting room, a dental surgery, an operating theatre and an optometry display of the same period. A history of scientific medicine is augmented with displays of several alternative modalities. Other attractions range from a reconstruction of a patient being treated by the famous Persian physician Avicenna to an exhibition of early electro-medical equipment, and a collection of rare iron lungs.

A showcase containing new acquisitions to the collection is constantly changed as donations are received. The objects displayed provide an insight into the range and diversity of the collection.

In the foyer outside the Museum are panels relating to the history of the Cradle of Humankind (Sterkfontein and environs) and a display of replicas from the site give visitors a fascinating glimpse into this world heritage site.

The Museum has a rare book collection and a significant history of health sciences reference library. An archive arranged by subject matter is housed in the library. Biographical information relating to thousands of medical and allied health professionals is available for research purposes which includes photographs, notebooks, academic certificates, records, personal papers and memorabilia of prominent health professionals and academics.

The Museum arranges public lectures, tours, temporary exhibitions and provides excellent facilities for health sciences historical teaching and research.
The Board of the Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, has appointed the following members to serve on the Board of Control:

Faculty of Health Sciences ___________________________ Professor Yosuf Veriava (Chairman)
Department of Anatomical Sciences ________________ Mr Brendon Billings
Health Graduates’ Association _________________ Dr Paul Davis
City of Johannesburg Arts and Culture Department ___ Ms Alba Letts
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ABLER MUSEUM BULLETIN

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Editorial

Wanted – A launch pad

Professor JCA Davies

The proposal, in principle, to establish a National Health Insurance Service (NHIS) in South Africa appears to many to have become trapped in uncertainty and discussions of complex issues of marginal significance. Nurses, among others, are reported to have complained that there is not enough information in the public domain about how the system is intended to work, and about slow progress towards implementation. This complex situation is not the fault of any particular individual or group, but an inevitable consequence of the ideological conflicts which are so deeply embedded in South African society. These conflicts, many and various, have retarded the development of primary, secondary and tertiary education, the establishment of a stable high quality health service which successfully balances the need for prevention and the imperative to provide treatment for established disease, and the provision of adequate housing and infrastructural services for a growing population. Recently, obtrusive evidence of a decline in the economy and destructive community and industrial protest has led to widespread pessimism about the prospects for the creation of a developmental state.

A suitable launch pad for a major health project can only be found within the existing health service – this much must be obvious. Equally clear is the fact that many elements in the existing service are not performing to maximum capacity. For example, and for no other reason than that I know the area and have worked there, consider the Limpopo Province.

There are fifty hospitals in the province, almost all of them district hospitals with a necklace of primary health care clinics in the surrounding rural area. My estimate is that on average each district hospital has between five and ten dependant clinics. This is no mean health infrastructure – fifty hospitals and between 250 and 500 clinics. As a result of the almost complete absence of medical management and side-by-side clinical teaching, the nursing sisters and staff nurses who serve in these clinics refer far too many patients to the hospital, thereby inflating the marginal cost to the patients and ensuring that the hospital is permanently overloaded and plagued by long queues and excessive waiting times. Systematic work and simple fact finding projects are impossible under these conditions. In the face of the lengthy queues, the front line staff adopt the routine quadruple prescription of analgesic plus anti-inflammatory plus antibiotic plus vitamin supplement as the way to please as many people as possible by shifting the queue rapidly.

It would be unwise to claim that the Medical Faculty of the University of the Witwatersrand invented primary health care, but it is beyond dispute that this Faculty made an important and lasting contribution to the development of community-based primary health care. Within the last decade there have been two editorials about primary health care in this journal. The first, in 2006, made two points: “In the hands of Emily and Sidney Kark, primary health care was scientific medical practice adapted to a particular geographic situation” ... and: “For two young doctors, Pauline and Ronald Ingle, working at a mission hospital in rural Africa was not medical marginalization but involvement in a complex network of people and ideas, and in parallel providing medical, surgical, paediatric and preventive services to the people living within reach of the hospital”.1 The second was prompted by the publication of a series of six articles about Health in South Africa. Some of the problems facing the country’s health services are listed, and they constitute in aggregate a formidable complex of problems for those whose responsibility it is to set the stage for the introduction of the NHIS.2 The danger is that the centre of interest is located a long way from the primary interest of the majority population living in the rural areas or working in the urban industrial areas. Experience in the Limpopo Province tells me that the acutely
felt need there is for a slick and effective clinic service backed by district hospitals with dedicated medical managers responsible for continued clinical education of the staff working in the clinics. If the existing health service of that province were brought to peak productivity, improved health would act as a promoter of development. Working conditions, and living conditions for the worker, are not good in this country and contribute to the burden of disease and the prevalence of disability outsourced to the labour-sending rural areas.

The people of this democracy would benefit from the development of basic elements of the health service. They are not getting any benefit from the continuing dispute about the pros and cons of the concepts underlying the public and the private practice of medicine. The surviving members of the classes which included Emily and Sidney Kark, and Pauline and Ronald Ingle might like to express their views on the subject.

REFERENCES

INTRODUCTION

As a medical student at Wits and later as a registrar at the Johannesburg General Hospital, I became fascinated by disorders of autoimmunity. “Horror autotoxicus”, literally the horror of self-toxicity, is the process described by the great German immunologist and Nobel laureate Paul Ehrlich to describe our aversion to attack by our own immune system. Nonetheless, we now know that the mechanisms of central and peripheral self-tolerance that we have developed to avoid self-injury do occasionally break down and lead to disorders of systemic (e.g. systemic lupus erythematosus, rheumatoid arthritis) and organ-specific autoimmunity. Among the organ-specific autoimmune diseases is a condition called membranous nephropathy, a relatively common form of kidney disease that I first became familiar with when I joined the Renal Unit in Johannesburg. What followed has been something of a personal odyssey. At times, as a result of happenstance, I have had the luck of being in the right place at the right time. At other times I have benefited from true serendipity.

The opportunity to study immune mechanisms of kidney disease arose in 1977 when I received an NIH research fellowship at Boston University to work with Dr William Couser, then a relatively junior faculty member but considered something of a rising star. It was only a slight coincidence that he had recently started working with a wonderful rat model of membranous nephropathy called Heymann nephritis discovered quite fortuitously in 1959 by Dr Walter Heymann who immunized susceptible strains of rats with an extract of rat kidney cortex and noted that they developed all the clinical and pathological features of human membranous nephropathy.

Membranous nephropathy is a leading cause of nephrotic syndrome in adults, a condition that leads to total body swelling (oedema) because of leakage of albumin from the blood plasma into the urine (proteinuria) when the glomeruli, the filtering units of the kidney, are damaged. Glomerular injury and nephrotic syndrome may be caused by various diseases like diabetes, infections like HIV, hepatitis B or C, lupus erythematosus, and other diseases limited to the kidney. However, membranous nephropathy is among the most frequent causes, especially in adult males in the 4th to 6th decades. It has a variable clinical course. About 15-30% of patients may enter a spontaneous remission, up to 30% progress to end-stage kidney disease, and the remainder have persistent proteinuria unless treated with potent immunosuppressive agents. It has been reported that 30-50% of patients with end-stage membranous nephropathy who receive a kidney transplant will experience a recurrence of the disease in the allograft. The diagnosis of membranous nephropathy has relied exclusively on kidney biopsy and until recently there was no immunoassay available for the diagnosis or to detect active disease.

The histological features of membranous nephropathy are characteristic (Figure 1). There is diffuse thickening of the glomerular basement membrane (GBM) but no increase in cellularity. With Jones’s silver stain characteristic “spikes” are seen to project from the GBM to extend between and surround the sub-epithelial immune deposits that are typical of this disease. The expansion of the GBM is best seen on electron microscopy, which also reveals the subepithelial electron-dense immune deposits, extensive effacement of the overlying podocyte (visceral epithelial cell) foot processes with collapse of the actin cytoskeleton and disruption of the intervening filtration slits. Immunofluorescence shows prominent staining for IgG and C3 in a granular pattern on the glomerular capillary walls typical of an immune complex disease. Most notably, the IgG subclass that predominates in idiopathic membranous nephropathy is IgG4.

Membranous nephropathy may be idiopathic or secondary to a variety of conditions. About 80% of cases of membranous nephropathy are idiopathic
in most series. Membranous lupus nephritis (class 5) is the most common cause of secondary membranous nephropathy in developed countries, whereas infections such as hepatitis B, schistosomiasis, malaria and syphilis predominate in developing countries. Membranous nephropathy may also be seen in association with various drugs and toxins such as NSAIDs, gold, penicillamine and mercury often used in skin-lightening ointments. There is also an association with various solid tumors. Secondary membranous nephropathy can sometimes be distinguished from the idiopathic form by the presence of immune deposits in locations other than the subepithelial space and the predominance of IgG1 or IgG3 in the deposits rather than IgG4.

MECHANISMS OF IMMUNE DEPOSITION

When I joined the Couser laboratory in 1977 it was widely believed that all forms of immune complex disease, including membranous nephropathy, resulted from the entrapment of circulating immune complexes that activate complement and incite a leukocyte-mediated inflammatory response. However, it proved difficult to reproduce such subepithelial deposits by infusing preformed immune complexes and membranous nephropathy is a non-inflammatory disease despite the presence of complement in the immune deposits. Much of what we subsequently learned about the pathogenesis of membranous nephropathy derives from the Heymann nephritis model of experimental membranous nephropathy in rats. Whereas Walter Heymann induced membranous nephropathy in rats with a crude extract of rat renal cortex, it was later discovered that the immunogen is located in a fraction of the proximal tubular brush border termed fraction 1A (Fx1A). Rats immunized with Fx1A develop proteinuria after 6-8 weeks and an immune complex glomerulonephritis indistinguishable from human membranous nephropathy. The development of the passive Heymann nephritis model, in which rats become proteinuric within five days after injecting heterologous anti-Fx1A, enabled a more critical analysis of the mechanisms of immune deposit formation and glomerular injury. In 1978, studies from our laboratory in Boston and that of Philip Hoedemaeker in the Netherlands determined that the subepithelial immune deposits form in situ as a result of circulating antibodies binding to an intrinsic glomerular antigen rather than circulating immune complex entrapment. This was established by perfusing isolated rat kidneys with anti-Fx1A such that the formation and entrapment of circulating immune complexes was impossible. Based on these findings, we hypothesized that the antigen might be a component of the podocyte cell surface, however, the nature of the antigen was unknown until 1985 when Kerjaschki and colleagues in the laboratory of Marilyn Farquhar discovered the target on the podocyte cell surface and called it GP330. A few years later, we found that podocytes are the primary target of antibody-mediated injury in the passive Heymann nephritis model (see below). Antibodies to GP330 were shown to bind and cluster the antigen on the podocyte cell surface whereupon the complexes were shed to form the subepithelial immune deposits characteristic of membranous nephropathy. The true nature of GP330 was uncovered several years later as the result of work in several laboratories. The protein – named megalin – is a 600 kDa transmembrane protein of the LDL receptor family highly expressed in proximal tubular brush border and rat glomeruli.

Figure 1. Pathological features of membranous nephropathy. Left upper panel: Light micrograph of a Periodic Acid Schiff-stained glomerulus showing thickening of the peripheral capillary walls (arrows) but no inflammatory infiltrate. Right upper panel: Immunofluorescence micrograph of a glomerulus stained for IgG showing granular immune deposits in the peripheral capillary loop walls. Complement deposits colocalize with the IgG (not shown). Lower panel: Electron micrograph showing subepithelial electron-dense immune deposits (white asterisks), effacement of the overlying podocyte (Podo) foot processes, condensation of the actin cytoskeleton (arrows) and new glomerular basement membrane (GBM) being laid down between and around (black asterisks) the immune deposits. Cap – capillary lumen; US – urinary space.
THE ROLE OF COMPLEMENT

Shortly after I arrived in Boston, one of my co-fellows Steele Belok ran some experiments to determine the effect of various inflammatory mediators, including complement, on immune deposition in the passive Heymann nephritis model. The results were largely negative, however, unexpectedly the complement-depleted rats did not develop proteinuria while all others did. In the meantime Steele had identified a guru and decided to go off to meditate so I decided to follow up on this serendipitous finding. As noted above, the only known role for complement in tissue injury at that time was an inflammatory process involving leukocytes attracted by the chemotactic properties of C5a. We confirmed that rats depleted of complement failed to develop proteinuria when injected with anti-Fx1A (Figure 2), whereas depletion of leukocytes had no effect.22 This led us to speculate that the effect of complement might be the result of podocyte injury induced by the terminal complement pathway acting through C5b-9, the membrane attack complex. This was later established by studies in the isolated perfused rat kidney model using C6- and C8-deficient sera.23,24 We found that rat kidneys containing subepithelial immune deposits of complement-fixing anti-Fx1a when perfused with C8-deficient human serum or C6-deficient rabbit serum had normal podocyte morphology and no albuminuria. Restoration of the complement deficiencies allowed assembly of C5b-9 and caused massive albuminuria and podocyte damage (Figure 2). Studies in C6-depleted rats with passive Heymann nephritis and in C6-deficient rabbits with membranous nephropathy induced by a planted antigen further established the role of the membrane attack complex of complement in experimental membranous nephropathy.25,26 Subsequent in vitro studies established that sublethal podocyte injury by C5b-9 involves calcium influx, activation of phospholipases, stress pathways, protein kinases and transcription factors, alterations in the regulators of cell cycling, disruption of the actin cytoskeleton and loss of focal adhesion complexes, reactive oxygen species production, DNA damage and overproduction of extracellular matrix proteins.27 We also found that the development of complement-dependent proteinuria in the passive Heymann nephritis model is associated with dissociation of nephrin, a critical podocyte slit-diaphragm protein, from the actin cytoskeleton. This process disrupts and displaces the filtration slit diaphragms, thereby destroying the final barrier to albumin leakage into the urine.28,29

EVIDENCE FOR IN SITU IMMUNE DEPOSITION IN HUMAN MEMBRANOUS NEPHROPATHY

Despite these insights into the pathogenesis of membranous nephropathy, there was some skepticism about the relevance of these findings to human membranous nephropathy. This was because megalin is not present on human podocytes and no one was able to detect circulating anti-megalin antibodies in human membranous nephropathy. Furthermore, IgG4, the predominant IgG subclass in glomerular deposits in human membranous nephropathy, does not bind complement C1q.30-33 This skepticism was largely countered by the remarkable description of a case of alloimmune antenatal membranous nephropathy resulting from the production of alloantibodies to neutral endopeptidase (NEP) in a mother deficient in NEP and sensitized in a prior pregnancy.34 NEP is expressed on the podocytes of human kidneys where it may serve as a target for the transplacental passage of the anti-NEP
alloantibodies. The discovery of additional such cases, and the demonstration that the development proteinuria depended on the presence of complement fixing IgG1 rather than IgG4 anti-NEP antibodies, largely resolved such skepticism and showed that the paradigm established in the Heymann model of experimental membranous nephropathy also applies in human membranous nephropathy.35

IDENTIFICATION OF THE M-TYPE PHOSPHOLIPASE A2 RECEPTOR AS AN AUTOANTIGEN IN HUMAN MEMBRANOUS NEPHROPATHY

While the elegant studies of foetomaternal alloimmunization to NEP clearly showed that the in situ paradigm established in the Heymann model of experimental membranous nephropathy also applies in human membranous nephropathy, the nature of the target antigen in idiopathic membranous nephropathy remained in question. To address this, we conducted a series of studies using protein extracts from isolated normal human glomeruli and sera from patients with idiopathic and secondary membranous nephropathy as well as serum from subjects with several other diseases and normal control subjects.36 This was not a new undertaking since we and other investigators had attempted similar studies in the past without any success. Nevertheless, having had some recent success in identifying podocyte target antigens in experimental models using modern proteomics,37,38 we decided to try again. Several experiments were a complete failure until one day Dr Larry Beck (then a research fellow and presently assistant professor) walked into my office with the western blot shown in Figure 3. This showed for the very first time a protein band at about 185 kDa that was identified by serum IgG antibodies from five subjects with idiopathic membranous nephropathy and none of the controls. So why did this work whereas all other attempts had failed? For reasons unrelated to the explanation, we had decided to electrophorese the glomerular protein extracts under non-reducing conditions rather than the conventional method using reducing agents to disrupt disulfide bonds. Electrophoresis under reducing conditions completely abolished reactivity with the patient sera, which indicates that the epitope identified by the autoantibodies exists in a conformation-dependent configuration. The results were confirmed with several additional patient and control sera and deglycosylation studies showed that all the reactive idiopathic membranous nephropathy sera identified the protein backbone of the same glycoprotein. Proteomic analysis of the fully glycosylated and deglycosylated protein revealed several candidate proteins, including some that are known to be expressed on podocytes. However, none of the known candidates was reactive with the human membranous nephropathy sera. Among the proteins identified in the proteomic analysis was the M-type phospholipase A2 receptor (PLA2R).39 While PLA2R was known to be expressed in kidney,40 it had not been identified in human podocytes and had never been implicated in human kidney disease, although it had been shown to be up regulated and expressed by injured mesangial cells in a rat model of glomerulonephritis.41 In collaboration with Dr Gerard Lambeau from the University of Nice who had originally cloned the human M-type PLA2R40, we performed western blot analysis of recombinant PLA2R with the human membranous nephropathy sera, as well as western blot analysis of the human glomerular extracts with a specific anti-PLA2R antibody from Dr Lambeau. This clearly established the identity of PLA2R as a putative target identified by human membranous nephropathy autoantibodies. This was confirmed by immunoprecipitation of the native antigen in human glomerular extracts by membranous nephropathy patient sera and identification with the specific anti-PLA2R antibody. Confocal immunofluorescence microscopy with anti-PLA2R

demonstrated that PLA2R is expressed on the podocytes of normal human kidney sections (Figure 4). In addition, the IgG4 antibodies and PLA2R were seen to co-localize in kidney sections from patients with idiopathic membranous nephropathy but not in sections from patients with secondary membranous nephropathy due to lupus nephritis (Figure 5). Thus, it would appear that the mechanism of antibody-induced clustering and shedding of the podocyte antigen-antibody complex that had been demonstrated in experimental membranous nephropathy might also apply in the human disease. Analysis of the IgG subclass specificity of the circulating and tissue-deposited anti-PLA2R autoantibodies was examined and found to be predominantly, but not exclusively IgG4. Thus we were able to conclude that the M-type PLA2R is a major target antigen in idiopathic but not secondary forms of membranous nephropathy, and that a high proportion of patients with idiopathic membranous nephropathy have circulating anti-PLA2R antibodies directed at a conformation-dependent epitope on PLA2R.36

CHARACTERISTICS OF PLA2R

PLA2R is a member of the mannose receptor family, which comprises the mannose receptor, Endo180, Dec-205 and PLA2R. A receptor for Fc on avian immunoglobulin is another member of this protein family. All family members have a cysteine-rich N-terminal domain, followed by a fibronectin II region and 8-10 C-type lectin-like domains, a transmembrane segment and a short cytoplasmic tail with an endocytic signal domain.42 The function of PLA2R in podocytes remains uncertain, however, it has been shown that stimulation of cells expressing PLA2R with sPLA2 induces cPLA2 activation, eicosanoid production and generation of reactive oxygen species.43,44 Moreover, over-expression of PLA2R induces DNA damage and causes cellular senescence.45 Recently, PLA2R has also been found to have tumor suppressor properties mediated through the kinase JAK246-49 and it mediates myocardial healing after ischemic injury by interacting with beta1-integrins.50 Another interesting observation is that other members of the mannose receptor family have been shown to exist in either extended or bent configurations.42,51 If PLA2R is also found to exist in different configurations it might explain the conformation-dependent nature of the reactivity of the membranous nephropathy autoantibodies with the antigen. In that regard, we and others (Fresquet et al. Abstracts of the American Society of Nephrology 2013) have found that the autoantibodies identify a conformation-dependent (reduction-sensitive) epitope in the N-terminal region of PLA2R that is known to undergo conformational changes in other mannose receptor family members. Furthermore, this region is known to harbor several non-synonymous coding SNPs, variations in which might confer susceptibility to membranous nephropathy52,53 and account for the conformation dependent nature of the target epitope.

GENETIC ASSOCIATIONS

As in many autoimmune diseases, membranous nephropathy has long been known to be associated with certain class II major histocompatibility (MHC) loci, thus suggesting a genetic susceptibility to the disease.54,55 Moreover, shortly after we reported that PLA2R is a major
antigen in idiopathic membranous nephropathy, significant associations were reported with polymorphisms in the PLA2R1 gene in Korean and Taiwanese subjects.52,56 Perhaps more striking were the results of an independent unbiased genome-wide association study from a European consortium that showed a strong genetic association of idiopathic membranous nephropathy with a non-coding single nucleotide polymorphism (SNP) in PLA2R1 and with the MHC II locus HLA-DQA1.57 Notably, the PLA2R1 SNP was in strong linkage disequilibrium with non-synonymous coding SNPs found in the Asian studies. Remarkably, although the PLA2R1 and HLA-DQA1 SNPs were both significantly and independently associated with the disease, the odds ratio of membranous nephropathy was almost 80 fold in individuals that were homozygous for both HLA-DQA1 and PLA2R1 variants. This work provided a robust and independent verification of the significance of PLA2R, however, subsequent studies have not identified unique or rare PLA2R1 variants to explain the susceptibility to membranous nephropathy.58 It is possible that the strong genetic interaction between the PLA2R1 and HLA-DQA1 loci may indicate that a specific HLA molecule is required to present PLA2R aberrantly to the immune system, or another factor, such as a microbial infection leading to molecular mimicry, may trigger the onset of disease.59

CLINICAL AND THERAPEUTIC IMPLICATIONS

To date, we have analyzed the sera of more than 200 patients with idiopathic membranous nephropathy and found seropositivity to PLA2R in 80% of cases. This includes patients from several different ethnic groups and geographic areas. None of our normal and disease controls has been positive, and almost all of the cases of secondary membranous nephropathy have been negative. In a recent series of 116 Chinese patients, a positive test for anti-PLA2R was found in one case each of membranous nephropathy associated with hepatitis B and SLE, two cases of membranous nephropathy in patients with mercury exposure, and three cases of membranous nephropathy in patients with cancer.60 Whether these are real or chance associations has yet to be established. We have found a good correlation between anti-PLA2R reactivity and disease activity. In a series of cases of idiopathic membranous nephropathy treated with rituximab we found that 83% of those that entered into a clinical remission lost reactivity prior to the reduction in proteinuria, whereas 71% of those who failed to remit remained positive for anti-PLA2R.61 Furthermore, we performed an analysis of 54 serum samples from 18 patients with idiopathic membranous nephropathy obtained at various stages of clinical disease, and found that the anti-PLA2R titer correlated strongly with clinical status and proteinuria.62 Similar results were reported by others.53,64 Table 1 summarizes the results of most published clinical studies that have utilized one or more serological assay (western blot, indirect immunofluorescence or ELISA). In addition, following on our observation that PLA2R relocates from the podocyte plasma membrane to co-localize with IgG in the immune deposits in idiopathic but not secondary membranous nephropathy, several studies have confirmed that finding in larger numbers of patients and several pathology laboratories are routinely performing tissue staining for PLA2R to distinguish primary (idiopathic) from secondary membranous nephropathy and recurrent from de novo membranous nephropathy after transplantation.65-68 Finally, to determine if anti-PLA2R positivity at the time of kidney transplantation confers a risk for recurrence, we evaluated 26 patients from the Mayo Clinic, 18 with recurrent MN and 8 without recurrence, with serial post-transplant serum samples and renal biopsies to determine if patients with pre- transplant anti-PLA2R are at increased risk of recurrence as compared to seronegative patients. In the recurrent group, 10/18 patients had anti-PLA2R at the time of transplantation as compared to 2/8 patients in the non-recurrent group. The positive predictive value of pre-transplant anti-PLA2R for recurrence was 83%, while the negative predictive value was only 42%. Clearly, further prospective studies are required to define the value of anti-PLA2R in this setting.

In July 2014, the United States Food and Drug Administration approved two anti-PLA2R assays for clinical use, an indirect immunofluorescence assay using cells transfected with recombinant human PLA2R and a high-throughput ELISA (Euroimmun, Morris Plains, NJ). Thus far, the sensitivity of anti-PLA2R positivity for the diagnosis of idiopathic membranous nephropathy is 60-80%, the higher number representing newly diagnosed and active cases (Table 1), and the specificity is at least 96%. Moreover, the fact that the antibodies decline and even disappear prior to the complete resolution of proteinuria may offer a more accurate guide to the duration of immunosuppressive therapy.64,69 Additional prospective data from
clinical trials of membranous nephropathy will further refine the value of this test for the follow up of patients receiving treatment for membranous nephropathy.

**SUMMARY**

In summary, we have identified PLA2R as a major target antigen in idiopathic membranous nephropathy. Approximately 60-80% of patients from all ethnicities with biopsy proven membranous nephropathy have tested positive for anti-PLA2R. The autoantibodies identify a conformation-dependent epitope in the N-terminal region of PLA2R on podocytes. This region is known to undergo conformational changes in other mannose receptor family members. Anti-PLA2R reactivity is highly specific for idiopathic membranous nephropathy. The antibodies are mostly, if not exclusively, IgG4 and the IgG4 anti-PLA2R antibodies co-localize with PLA2R in idiopathic membranous nephropathy but not in secondary forms of membranous nephropathy on kidney biopsy. However, there are still questions to resolve. Is there another antigen in the 20% of idiopathic cases that have tested negative for anti-PLA2R or are they simply inactive? What are the antigens in secondary membranous nephropathy? How do IgG4 antibodies cause podocyte injury if they can't fix complement? What triggers the development of anti-PLA2R? How do the genetic variations in PLA2R confer susceptibility to membranous nephropathy? Whatever the answer

### Table 1. Current status of anti-PLA2R serological tests in patients with primary (idiopathic) membranous nephropathy

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<th>Author (Year)</th>
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<th>Reference</th>
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WB - western blot; IFA - indirect immunofluorescence
to these questions, it is clear that the detection of anti-PLA2R can serve as a useful diagnostic test in cases that are not amenable to kidney biopsy as well as to follow the response to treatment and possibly to predict the recurrence of membranous nephropathy after transplantation.

ACKNOWLEDGMENTS

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DISCLOSURE

Dr Salant is a co-inventor on a patent “Diagnostics for Membranous Nephropathy”. He reports serving as a consultant for Alnylam and Chugai Pharmaceuticals and he conducts research with Alexion, Alnylam and Pfizer.

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ABSTRACT

A wealth of photographic material from Tara, the H Moross Centre, exists at the Adler Museum of Medicine. For the purposes of this article, only one photographic item will be investigated, namely the Tara photograph album (the album). Such an investigation is faced with a number of difficulties as the album is undated and lacks any accompanying text (no captions, titles, or preface). Although the album lacks the relevant texts and archived documents to assist in decoding the photographs, I argue that the institutional ethos of Tara during the superintendency of Dr H Moross (1947 – c 1969) provides a contextual framework within which one can examine the photographs critically. Accordingly, this article seeks to explore Tara’s institutional ethos in order to provide a historically informed understanding of the production and encoding of the album’s photographs.

INTRODUCTION

“Psychiatry and photography were born with a few decades separating them. Their encounter produced the use of photography for classificatory and teaching purposes in order to identify, study and classify mental illness”.1 Such a statement highlights the dominant concern of visual culture scholarship that seeks to interrogate the clinical and classificatory genre of photography within psychiatry. Recently, however, there has been an acknowledgement that multiple other genres also stem from the nexus between photography and psychiatry. One such genre includes the promotional photographs that psychiatric institutions display or present to the public. The production and dissemination of these images can, for the most part, be linked to the image-making of the institution – the creation of a favourable view of itself.2–5

The archives of Tara, the H Moross Centre, at the Adler Museum of Medicine provide a valuable resource in exploring the genre of promotional photographs. The folders of the archive are brimming with photographs from newspaper clippings, brochures and a photograph album (the album). For the purposes of this article, I am interested in providing a critical exploration of the album. Yet such an investigation is faced with a number of difficulties as the album is undated and lacks any accompanying text (no captions, titles, or preface). Moreover, I have thus far not been able to locate any documents that make specific mention of the album. One can estimate that the photographs were taken in the late 1940s and early 1950s based on the styles of clothing depicted.

The album is a regal hard-cover book in landscape format with twelve A4 black-and-white photographs pasted on separate sheets of paper with the name of ‘Wittels Studio’ signed at the bottom right corner of each photograph. Although the album lacks any captions and text to assist in decoding the photographs, I argue that the institutional ethos of Tara during the abovementioned time-period provides a context in which one can critically examine the photographs. Said differently, a contextual reading of the photographs is possible by understanding Tara’s therapeutic tenets, principles and aims. Accordingly, the article seeks to explore Tara’s institutional ethos to provide a historically informed understanding of the production and encoding of the album’s photographs.

Tara was established as a provincial hospital of the former Transvaal province in 1946. The hospital in Hurlingham, Johannesburg, catered for the care and treatment of non-certifiable psychiatric problems, in other words, the minor and recoverable cases of mental illness.6–8 The scholarship on Tara has in the most part enumerated the seminal role and pioneering contributions of Dr Hyman Moross (1904 – 1979), the hospital’s first Medical Superintendent.9 This article seeks to contribute to the existing scholarship by identifying and exploring the institutional ethos and image-making relating to the hospital.

Under the superintendency of Moross (1947 – c 1969), a core institutional ethos of Tara was the provision...
of and practice within a therapeutic community.\textsuperscript{10-12} For Moross, the therapeutic community comprised a synthesis of a number of current concepts in psychiatry that focused on maintaining a therapeutic milieu and harmonious hospital environment while offering a range of occupational therapy and associated activities for the active participation of patients.\textsuperscript{13} The approach and regimen of the therapeutic community was believed to be ideally suited for the treatment of patients who were battling the perplexities of life and having problems relating to other people:

the milieu which he enters on admittance to hospital must provide such new living experiences and new personal relationships as to provoke less anxiety than before, afford maximal support and gradually enable the patient to develop social relationships and to live more effectively with others.\textsuperscript{14}

Tara was equipped with a range of medical technologies and machines that catered for the hospital’s various sections – medical, surgical and neurosurgical. Yet, there is not one photograph that depicts either the machines or the aforementioned hospital sections. Instead, the photographs are of the picturesque grounds of the hospital, individuals playing sports (tennis, golf and bowls), patients relaxing to the rhythmic beat of a drum, a weaving workshop, and the impressive collection of books in the library. These photographs suggest that the album was not aiming to record all the facilities and facets of care and treatment at the hospital. Instead, it compellingly presented a hospital environment that promoted the ideals of a therapeutic community. Thus, I argue that the interpretation of the photographs requires a conceptual framework that sheds light on the therapeutic community. Consequently, the investigation consists of an interlinking twofold objective, namely: (1) to research the concept of the therapeutic community through historical and critical texts; and (2) to explore how the photographs require for their interpretation a conceptual framework of the therapeutic community.

Figures 1-3 are evocative of a leisure resort in the array of sporting amenities and activities depicted. All the images show patients playing sport. Figure 1 includes umbrellas and spectators, which contribute to establishing a vividly ebullient scene. While the photographs portray various outdoor sporting activities, these very activities operated as a mode of treatment at the hospital.\textsuperscript{15} A main concern within the concept of the therapeutic community was developing the use of recreation as a therapeutic tool in hospital practice.\textsuperscript{16} Thus, what follows is an exploration that illuminates the diverse therapeutic imburement of sporting activities. On a very direct level, sport was one form of physical education that aimed to improve the bodily status of the individual.\textsuperscript{17} Furthermore, it was also believed to restore “rhythm, co-ordination, appetite and weight;
it helps to induce a sense of well-being and inspires psychological accessibility". Sport was also constructed as a recreational pursuit for the therapeutic purpose of relaxation. Moreover, sporting activities, whether conceived as recreation engagement or physical education, were valuable for being participatory and social. To this end, it was argued that on a therapeutic level the patients benefited from group engagement. Such an argument was based on Moross’s commitment to group psychotherapy that called for bringing individuals together into direct and meaningful interaction. In doing so, this form of therapy offered:

opportunities for social participation and for increasing social capacity, at a rate commensurate with the patient’s abilities. The group situation makes it possible for the members to enjoy equal responsibility, freedom of thought and uninhibited self-expression.

The photographs are remarkable in this regard in that they display groups of individuals interacting with one another and socialising. The demeanour and behaviour of the individuals are markedly friendly and connote companionship, camaraderie and team spirit.

In figure 4, a healthcare worker in a white coat is seated in close proximity to the beds of the patients while she rhythmically beats a drum. Her eyes appear closed as if she is somewhat absorbed in a pleasurable state induced by the cadence of the drum. The pose of the healthcare worker is juxtaposed with the individuals lying on the bed. Whereas the healthcare worker looks naturally and unpretentiously relaxed, the individuals appear to be adopting poses mandated as part of a treatment programme. The individuals are all lying on their backs with their arms to the side while a pillow lies beneath their knees. Such a pose anchors the interpretation of the photograph as a treatment session conducted for therapeutic benefits. The sessions on relaxation techniques were a core principle of the therapeutic community.

Tara placed special emphasis on relaxation techniques and treatment. This took the form of special classes in which the patients were taught how to consciously relax. The classes were valuable in improving sleep patterns while also contributing to minimising tension in human relationships and fostering stress-free interpersonal contact. A connected outcome of relaxation treatments was that the patient learnt to “appreciate the value of relaxation in action. He learns, for example, that he need not drive a motor car with a vice-like grip of the steering wheel, urging the car along with braced arm and leg muscles, but comes instead to appreciate how much more competent he can be when he is comfortable and relaxed”. One notable relaxation technique was the use of music that was deemed to be beneficial “to the extent that it may engender satisfying release from tension, and the pleasurable emotions stimulates by it may aid distressing sensations”.

Depicted in figure 4 is a poster on a wall that reads “If you are relaxed you are not afraid; if you are afraid you are not relaxed”. While music may be soothing and aid the patient in consciously relaxing, the outcome of the relaxation treatment programme is equally focused on teaching the patients the difference between tension and relaxation. In this regard, the poster acts as a maxim that calls for the patients to consciously assess their stress and anxiety levels in their daily living and to manage them through the relaxation techniques taught at the hospital.

For Moross, a risk of hospital institutionalisation was that patients could develop an unhealthy dependence on the hospital to protect them against the pressures of normal life. As a therapeutic community, Tara instead aimed to encourage the recovery and successful return of patients to the community. This was fostered by the hospital promoting social participation and relaxation techniques that aided the full integration of the individual into life outside the hospital. Active participation in occupational therapy was an additional means of supporting the patient to keep “in touch with the reality of daily living external to the hospital, and ... counteract isolation”.

Figure 4
Figure 5 depicts a workshop for occupational therapy in which a number of women are engaged in weaving. Occupational therapy was thought to offer diverse therapeutic outcomes. It offered patients respite from tensions, anxiety, grief and morbid or melancholic thoughts by offering them opportunities for meaningful engagement and active socialisation. This respite was contingent upon the hospital offering a wide range of activities to appeal to the various preferences of individuals. Additionally, the choice of the activity was “discussed and designed by and with the patient, otherwise the activity is regarded as a disciplinary restriction and the patient is not likely to benefit from it after his discharge from hospital”.

It is worth noting two features in the photograph that explain the practice of occupational therapy at Tara, namely the setting of the workshop and the presence of the nurse / therapist in the background. By being in the workshops, the patients were removed from their wards and entered a work atmosphere. This was an intentional mechanism designed for the hospital to help the patients to re-enter the work environment of the outside world. The Tara workshops therefore served as a stepping stone in the rehabilitation of the patient. A friendly workshop atmosphere was offered where “the patient is often helped to overcome his inability to mix with others, to make social contacts, and to take part in communal activities”. Central to enabling and encouraging the development of social contacts and co-operation between the patients is the role of the nurse / therapist. The nurse / therapist acts not only to guide the patients but to promote confidence in their abilities and skills. “As confidence expands, anxiety, frustration and stress may become more endurable; the patient may be motivated to recover and move toward regulating his behaviour by personal initiative, judging for himself what needs to be done, making plans for doing it and executing such plans”. Thus, occupational therapy helped to prevent boredom and depression while also assisted in restoring self-confidence and the engendering of responsibility.

Figures 6 and 7 are visually striking in their photographic composition. What is most distinctive is the way in which the images represent the trope of the picturesque – how the landscape’s arrangements are cultivated to resemble a painting. Figure 6 depicts an idyllic scene of a bridge over a tranquil and serene body of water. The photograph is framed on the right by a magnificent tree crowned by a thicket of leaves. The foreground reveals an open and inviting section of lawn that is well-shaded. The focal point of Figure 7 is a tree that is dignified and gracious in its outstretching towards the sky. The shallow water of the pond appears marble-like in its reflection of the clouds and sky.

In the photographs, the landscape and scenery are the focal points. In one way, the focus can be accorded to the central role that the landscape
and grounds played in treatment options within the therapeutic community. Extensive hospital grounds and gardens were fundamental for the outdoor recreation amenities offered at Tara. During leisure time, the gardens may have been a sought after space for rest and relaxation, for meditation, light meandering, bird-watching or a plethora of other activities that suited individual tastes.

Of interest, though, is that Tara’s representation of its grounds and landscape has parallels with nineteenth century asylums across South Africa and the West, when asylums sought a country location with ample grounds and an unobstructed view of a surrounding landscape that was both tranquil and picturesque. Furthermore, substantial portions of the asylum site were cultivated as gardens and farms for the purpose of providing occupational therapy and exercise for patients – an intrinsic component of the therapeutic regimen practised at the asylum. Thus, the landscape design was not intended for appearances only, but had an explicit role in the treatment of patients. Stated differently, the location, grounds and design of asylums were intrinsic components of the therapeutic regimen offered at the institution. The landscape tropes of nineteenth century asylums became adjuncts to mental health treatment in the twentieth century under the concept of milieu therapy. At Tara, milieu therapy was woven into every facet of the hospital system. Tara’s appreciation of milieu therapy further serves to underpin and underscore the image of the hospital as being dedicated to providing an appropriate setting in which patients could regain their serenity.

A notable feature of the album is that there is not a single depiction of a psychiatrist. Instead, there are extensive representations of nurses and other members of the therapeutic team. This intriguing focus on members of the therapeutic team other than psychiatrists can be succinctly enumerated in terms of the therapeutic community. In such a treatment approach, it was extolled that “any staff member with whom the patient has contact is a potential psychotherapeutically active agent”. Thus it was not only the psychiatrist/patient relationship that mattered, but the patient’s contact and communication with all members of staff that held therapeutic value. In figures 4 and 5, the hospital’s staff members are depicted neither as wardens nor supervisors. Instead, they are shown to be intimately engaged with the patients. They serve to constructively support and guide the patients in the workshop, while in the relaxation sessions they sooth and comfort the patients.

In the absence of any captions or text in the album, the interpretation of the photographs can for the most part be described as a hermeneutical or interpretive reading. A fundamental feature of hermeneutics is that it acknowledges that there will always be the prospect of generating alternative interpretations that may offer more convincing or even divergent interpretations. Thus, while this article considers the therapeutic community as a construct critical to the interpretation of the photographs, there are other ideological constructs evident in the photographs which offer further research topics. An absence in this article has been a critical analysis of the representations of race, class and gender in the photographs. Future investigations may indicate how the dominant socio-cultural understandings of race, class and gender are embedded in the images. Such an undertaking will provide much warranted additional avenues of research.

Although the discussion of image-making has been limited to the Tara album, it may serve to enrich further explorations into other forms of promotional photography disseminated by Tara. A precursory examination of the archived promotional photographs shows a continuity in the themes, motifs and tropes established in the album. Thus, future research efforts may take the form of trying to evaluate and understand more extensively the resonance of the visual repertoire established in the album and its influence on various other promotional photographs.

Additionally, future studies may move towards exploring the image-making of the hospital in various other media forms. Tara ran a number of mental health campaigns which included radio programmes, open-days and a film produced by the hospital to enlighten the public on the aims and work of Tara. It is certain that the examination of each medium will reveal new approaches and features that will aid in establishing the full scope and scale of the hospital’s image-making. For the present, what can be stated is that the image-making provided an important tool to counter the fear and stigma of mental illness and the public’s lack of confidence in mental hospitals. The image-making helped “in the development of a more acceptable image of the psychiatric hospital which may have been preconceived as a dreadful place accommodating bizarre ‘manics’ and staffed by strong-armed persecutors”.

"46"
ACKNOWLEDGEMENTS

I wish to thank Rochelle Keene for introducing me to the Tara photograph album and providing invaluable help and support with my research. The photographs are reproduced with permission from the Adler Museum of Medicine.

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18. Ibid, p 141.
27. Ibid, p 142.
34. Ibid, p 375
36. Ibid, p 142.
37. Ibid, p 142.
38. Ibid, p 144.
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At 16:00 on 31 December 1973, six young men gathered outside the office of the Chair of Surgery, awaiting their instructions from Professor du Plessis, who for the next six months would be known to them as “Sir!” in his presence and, occasionally, God, but mostly DuP everywhere else. Kenneth Polonsky, Richard Conn, Warren Carel, Raymond Polak, Brian Greis and I. We had at least three things in common: first, we were all good students, good enough to secure the number one internship at Wits at the time; second, we had all applied for DuP’s Job as our first choice; and third, we were all scared three-quarters to death by the challenges of the next six months. A real band of brothers-in-the-making.

The door opened, in we went and there he was! DuP’s reputation as a tyrant was well known, as was his exceptional prowess as an academic surgeon, teacher, mentor and role model. He ‘welcomed’ us to his ward with words that went something like: “I didn’t ask you to apply for my job, you did. So here are the rules!” Just a few of the many will suffice:

- We would have every second weekend off starting after ward rounds on Saturday (about 14:00) to Monday morning at 05:00-06:00 when we would put in the intravenous for the day. At all other times, we were responsible for our own patients.
- We would wear a tie and a clean white coat on the ward every day, be clean shaven, wear our hair above the collar and above our ears, never leave the operating room dressed in surgical scrubs.
- We would avoid fighting with the charge nurses because he would take their side every time since we were just passing through.
- And on Wednesdays and Saturdays we would pour tea for the consultants, giving him a cup with two fingers of tea, the rest hot water, no milk, no sugar.
- Did the rules scare us even more: not at all, we knew them before he spelled them out for us and we could not have been any more anxious and excited. After all, we were now doctors and this was our first “job.”

Rather than provide a blow-by-blow account of those six months, I have chosen to highlight the experience through a series of cases, events and interactions that have stuck in my mind throughout the next 40 years. DuP was the most demanding individual I have ever worked for or with. He demanded only one thing of himself and everyone around him: maximal effort.

**THE BENT FINGER**

On the first day of the internship, I was exposed to DuP’s aura: we were scrubbing in on my first case, DuP on the right, David (Dave) Coombs, the senior registrar, in the middle, and me on the left (and when I say scrubbing I mean just that! Finger tips to elbow). DuP asked Dave how the man in the surgical infection ward, we’ll call him Mr Ferreira, was doing. Dave said the man was critically ill and very likely would not survive. DuP simply pointed his bent index finger at Dave
and me (he would do that often as a form of benediction) and said that we were not to let him die, period, the end, no debate. In this way we would demonstrate excellence in patient care to the doctors who had looked after Mr Ferreira in a private hospital and, quite frankly missed the diagnosis of bowel gangrene due to an intussusception. For the next six weeks I became Mr Ferreira’s ‘bodyguard,’” treating another crisis every few days, multiple episodes of septic shock, massive GI bleeding, the complications of ever more desperate therapeutic approaches, such as hyperbaric oxygen therapy, a supposed adrenal crisis and much more. I may have been his neophyte bodyguard, but Mr Ferreira became my ‘teacher:’ in addition to being the textbook of surgical complications, he taught me how to stay awake for days in a row, and resilience, tenacity and commitment to the individual patient. I had left DuP’s ward when Mr Ferreira returned six months later to have his bowel reconnected. On ward rounds, DuP said to him that he was lucky to be alive. Mr Ferreira replied that luck had nothing to do with it, rather that a young intern, Daneman, had simply refused to let him die!

On a subsequent occasion, the bent finger was pointed at me as DuP was completing the removal of a massive parathyroid adenoma. Daneman, he asked rhetorically, what are your plans for the next 24 hours? None, Sir! I said. Well, you’ll be sitting by this woman’s bed during that time because in 6 hours her calcium is going to fall through the floor and you are going to be there to prevent and treat it. Yes, Sir! Almost to the minute he had predicted what would happen. These were lessons in observation and experience that were unrivalled.

RUNNING ON EMPTY: THE TRAVAILS OF EXHAUSTION

The last time I checked there were still 168 hours in a week and in DuP’s ward we were spending more than 110-120 of those hours on the ward. The first thing that happened was leg aches and pains, likely shin splints, from being on our feet so many hours a day, but those went away in a few weeks. More scary to me were the thoughts that crept into my head after being up for a number of nights in a row: If only the patient would die, I could go to sleep. It did not affect my patient care but I began to question my suitability for clinical medicine. After a few days of these dark thoughts, I told one of my co-interns about it. He said he had exactly the same thoughts and felt he was the only one. We had a short discussion and these thoughts never returned. Almost 40 years later, I recounted this story to one of the other interns and he said, why didn’t you talk to me about it, too? For all these years I thought I was the only one … It was almost 40 years later when reading Samuel Shem’s brilliant book, *The House of God*, a quasi-fictional look at internship at a famous hospital in the USA, that I read about the author’s similar experience which resonated with my own.

On a lighter side, every time I got into bed I would fall into such a deep sleep that I could not easily distinguish between the telephone, my pager or the alarm. Thank goodness for my wife, Meredyth, who would answer the telephone while I was fumbling with the alarm. I think she saved my skin on many occasions. She had a lot of patience that year: pregnant with our first child, she would wait until my weekends off call to discuss baby naming. I would lie on the bed while she read the names. After a few minutes she would shake me awake and say, what is the last name you heard? I would say, sheepishly, ‘Aaron?’ the first in the alphabet! Our first son is Nicholas.

The exhaustion of internship taught us how to catnap whenever the opportunity arose, and it did so every Wednesday during pathology rounds. The interns, registrars and consultants gathered with the pathologists to review the path specimens of the previous week. The lights were switched off and a pathology registrar would read the name of the first patient, Mr Jones, for instance. This was a cue for a short history from the intern responsible and a cue for the others to doze off. When the first case was finished, the path registrar would say, Mrs Smith. The awake intern then would jab Mrs Smith’s intern awake and he would give the synopsis and so on for an hour. We were a very finely tuned unit in this regard. And there was never any snoring.

There is nothing heroic about working 120 hours a week, and functioning in a state of near exhaustion throughout. To those of our generation who belittle the work demands and work ethic of today’s interns and residents with restricted work hours, I would say only one thing: we were abused in the past, simple as that. It became a badge of honour to have survived the internship, then registrarships of the day. It has taken another 30 years for sanity to prevail.
Of the six month surgical internship, four months were on the professorial ward, one on the trauma unit and two weeks on anaesthesia, with a two week vacation. For me these were the middle two months. The anaesthesia service required early rising (but later than on DuP’s ward), all morning in the Operating Rooms (known as ‘Theatre’), a review of the next day’s cases, and off by 15:00-16:00 on most days. After DuP’s ward, this was a piece of cake except for the intense need each afternoon to catch up on sleep: was it the residue from sniffing gases all morning or from sleep deprivation of the ward?

The use of the word ‘Theatre’ to describe the operating rooms may sound arcane, but given the histrionics of some of the surgeons, the shouting, throwing of forceps, scalpels, etc. (NEVER by DuP!), it is often quite appropriate. Theatre was where interns could expect the most abuse. Somehow we were always to blame for everything that was not perfect in the surgeon’s mind.

The trauma service bored me to tears. Fuel shortages had ‘fueled’ temporary laws that reduced speeds on both city streets and highways so that motor vehicle accidents all but disappeared (simple cause-and-effect for anyone listening). There was a trickle of victims of violence so that being on call one-in-two was not too onerous.

Quiet, until one Sunday evening at about 10:00 when my pager went off to call the Emergency Room (Casualty). I had been relaxing at Resdoc, the residence across the street for interns at Johannesburg General Hospital. The charge nurse said, you better come quickly because one of the other interns has been stabbed! He was stable but …. I asked a few medical questions, then said, was he stabbed between Resdoc and the hospital. The nurse said yes, and I asked then how was I to get to him safely? A nightwatchman was dispatched to ensure my safety, but the truth was that this intern was attacked in a dark and lonely spot while ‘making out’ with one of the nurses on his medical unit. An attacker came across the two and stabbed my colleague twice with his ‘knobkerrie’ – a piece of wood carved with a round handle at one end, the ‘knob’, and a sharpened end at the other extreme. The nurse had a broken tibia, heaven only knows how she sustained such an injury: medicine teaches us to seek the mechanism of the injury. Perhaps we ought to have consulted the Kama Sutra. The two minor scratches on my colleague’s abdomen precipitated an abdominal X-ray, and the finding of air-under-the-diaphragm meant penetration (by the weapon, that is). What followed was team work at its best: a trauma surgeon came quickly, and we scrubbed for surgery. At the same time, two other interns, both close friends of the victim, ran errands such as getting blood typing and blood on hand in case he needed transfusion, taking blood specimens to the lab and bringing back results. The two scratch marks and abdominal air were just the opener: he had, as I recall 22 separate internal injuries that required attention: to bowel and liver predominantly. He survived very well, and has had an illustrious career. Perhaps he too ponders from time-to-time how that broken bone occurred.

There was nothing haphazard about DuP’s ward: there was one mantra: Perfection, and nothing less. Do things the way your registrars perceived what DuP wanted and everything would be fine, and mostly it was. DuP operated on an obese colleague who had a benign intestinal polyp. The operation was successful but the patient maintained a low niggling fever postop and did not feel quite right. DuP visited the ward, examined and reexamined the patient every day, eventually pinpointing the source: a small abscess deep in the adiposity of the abdominal wall. There had been just something amiss with this patient that caught DuP’s attention and he did not rest until he found the cause of the patient’s, and his, discomfort.

DuP had little time for idle conversation but always explained in detail to each patient what he was going to do in their operation. For those about to undergo radical surgery for malignancies, e.g. radical mastectomies for breast cancer or major bowel resections for carcinoma of the colon, he would always say something like “if we don’t do this surgery it might become malignant.” A nice cop-out, but it was the same for most surgeons at the time, and patients rarely questioned the professor. That is until Mr Selkirk was admitted for an abdomino-peroneal resection of a low bowel carcinoma. DuP explained the massive surgery in detail, one team working on
the abdominal side, another on the anal side leaving him with a colostomy and a host of long-term challenges. What followed was an attitude-changing revelation to me:

Patient: Professor, do I have cancer.

Professor: Not now, but it might become malignant if we do not do this surgery.

Patient: Cut the crap, Professor. You know I have cancer, I know I have cancer. Otherwise why would I agree to such a disfiguring operation? So let’s stop kidding ourselves and get on with it.

Intern (me) to himself: this has been a sentinel moment in my medical career! Disclosure would mean just that in future: telling the truth as we knew it. I hope DuP also took something from this encounter.

One more lesson: near the end of my six month surgical internship, DuP admitted Mrs Collins from his clinic for assessment of probable stomach cancer: she had many worrying signs and symptoms all pointing to this diagnosis. But after a week of intense investigation, I made a diagnosis of pernicious anaemia, a medical condition on a surgical ward! Good grief! I told this to our registrar, relatively new to the ward, on evening rounds on a Tuesday. He said in front of the patient: Get her off the ward before DuP’s rounds tomorrow! I said I had arranged a medical unit transfer for after rounds the following day so that we could discuss the outcome with DuP. What followed was a most unprofessional shouting match between the registrar, incandescent with rage at the impertinent intern, and the impertinent intern refusing to budge. I prevailed to the joy of Mrs Collins that evening. On rounds the next day, DuP and his entourage of consultants, trainees, nurses and others, stopped in front of Mrs Collins’ bed. The impertinent intern said: Mrs Collins is the woman we admitted from your clinic last week for evaluation of likely stomach cancer. Her diagnosis is, in fact, pernicious anaemia based on the following …. I finished my concise description and waited for the tirade, but none came. Rather DuP said, that is fantastic, and spent the next 30 minutes or so providing a bedside dissertation on pernicious anaemia and its masquerading as stomach cancer and its potential for malignant transformation. The contrite registrar said only that it was a good teaching session. Hopefully he learned that DuP loved the diagnostic and/or therapeutic challenge and need not be feared as long as the housestaff was doing a good job.

MOVING ON

Just as abruptly as it started, so abruptly did the six months on DuP’s ward end. We took him and his consultants out to dinner (he loved prawns), he gave the six interns each a copy of Verney’s book, The Student Life, which was about Sir William Osler. In it he put the same inscription: With happy memories of an excellent House Surgeon with a most promising future, followed by See page 131, a different one for each of us. On page 131 of my copy he had underlined the following: The value of experience is not in seeing much, but in seeing wisely. For each of us it was a hint as to what we needed to pay more attention.

After it was over, I said to my wife, if I say I learned a huge amount about excellence in clinical medicine during those six months and had undying respect for DuP, nod in agreement. But if I say we had a wonderful time, give me a swift kick in the ass!

What happened to that 'Band of Brothers': the six nervous novices all left South Africa for further training and to avoid the crushing burden of apartheid. And none returned. Raymond Polak became an academic surgeon, specializing in liver transplantation in Chicago; Brian Greis went into private practice in obstetrics and gynaecology running fertility clinics in Chicago until he retired relatively early; Warren Carel is an anaesthesiologist in Philadelphia; Kenneth Polonsky did internal medicine and endocrinology at the University of Chicago, spent a few years as Chair of Medicine at Washington University in St Louis before returning to Chicago as Dean of the Faculty of Medicine; Richard Cohn became a paediatric haematologist/oncologist, moving to Sydney where he now is Chief of Paediatrics at the University of Sydney teaching hospital. And I left for Toronto, specializing in paediatric endocrinology, and joining the Faculty of the University of Toronto and the medical staff of The Hospital for Sick Children, where I am now Department Chair and Paediatrician-in-Chief respectively.

And I bet each and every one of us speaks of those six months on DuP’s ward on a not infrequent basis. Yes Sir!
In April 2004 I became the Curator of the Adler Museum of Medicine, coming from a long stint at the Johannesburg Art Gallery: 25 years to be precise (1978 – 2003). The first article I wrote for the Bulletin, in December 2004, was about this journey, substituting pill boxes for paintings. I was bold enough to write a lengthy list of things I wanted to achieve during my term as Curator, something I advise people not to do lest they set themselves up for failure! But as I look back on ten years at the helm, I am delighted with what has been accomplished by this small team of committed people who make up the staff of the Museum. And here I pause to pay tribute to them: Cheryl-Anne Cromie, professional officer, who has stood by my side from the beginning and has been the most tremendous support in every way, running the Museum with me in a partnership which has been enviable; Sepeke David Sekwele, who worked at the Museum as a volunteer prior to being made a member of staff and who has concentrated on the management of the collection and the development of its electronic database. His knowledge of the content of the collection is unequalled. And finally Gilbert Singo who has served Wits for 26 years and the museum for 25 of those years, and who has the longest institutional memory of us all! This small team has accomplished wonders and I am so proud to have led them for 10 years – they have made my stay at Wits valuable and rewarding, and they have been tremendous colleagues and friends. We have shared so much together both in terms of work and our personal lives – it will be hard to say goodbye to them and I wish them all well for the future.

On reflection, what do I see as the highlights of the last ten years? I think we have turned the Museum into an interesting, vibrant space at Wits Medical School, one which is well used by the Faculty and the students in many ways: for functions and important events; as a formal venue for meetings, lectures, presentations, seminars and a myriad of other events, as an informal venue for concerts, art exhibitions, shavathons, prize-givings and many other uses by individuals, other Schools within Wits and external institutions.

Undoubtedly the most daunting challenge was taking the decision to scrap the Museum’s existing electronic database in 2004 and, with the assistance of a trusted Museum colleague, Dr Mike Raath, who had been on the Museum’s Board and understood the problem, we created a new database for the collection. Progress in capturing the artefacts has been excellent, and over 40 000 have now been captured out of a possible 50 000 – 60 000 items.

Reconfiguring the Museum’s archives was another major task which was begun in May 2004. We had files and papers by the thousand strewn all over the Museum where any flat surface was to be found, including the floors. We probably discarded two thirds of the material in the archives as better information and images were easily available on the internet. We also began the process of rebuilding the archives with relevant and important material relating to the subject matter of the Museum, its collections, as well as the Faculty of Health Sciences. In this we were greatly assisted by people such as Professor Tom Bothwell and Professor Yosuf Veriava who passed on the extensive archives of the Department of Medicine to the Museum, as well as their own personal archives.

At the same time, and as donations of hundreds of books were received sometimes on a weekly basis, we also decided to weed the Library, adding further to the volume of unpacked material all over the Museum. And just as we thought we may just get on top of things, we were required to vacate large storage areas at the NIOH/NHLS and move into one comparatively small storeroom in the basement of a
building! This is any curator’s nightmare come true – and so it was! In the process of moving, we were compelled to deaccession and get rid of uncomfortably large sections of the collection itself. This process, incidentally, formed the content of several papers I presented at conferences of the South African Museums Association as we attempted to get to grips with constructive and ethical guidelines for the process which would stand up to peer review and scrutiny.

While these processes were ongoing, we found ourselves daunted by the tasks we had set ourselves. The Museum was actually in a shambles and we had largely created the chaos ourselves! We frequently consulted each other and other archivists, librarians and museum professionals before making decisions. It took us many years and much soul-searching and consultation before we saw the light at the end of the tunnel.

The Museum has received many wonderful donations over the last ten years, all of which are detailed in the Annual Reports. We have received gifts great and small, which have included the Asher Dubb history of medicine stamp collection, a collection of history of medicine stamps belonging to the late Professor Asher Dubb, which was donated to the Museum by his wife, Professor Vivian Fritz; the first stethoscope (c1946) owned by the late Professor Phillip V Tobias when he was a medical student; two Parklane Clinic theatre scrubs used during the first surrogate grandmother delivery donated by Dr J van der Wat; and a mass miniature X-ray machine from Anglogold Ashanti Health (Pty) Ltd, to name a few.

The Museum also embarked on a project to acquire contemporary South African artworks and the Board of the Museum commissioned a small number of artworks for the foyer which have included three major installations. Churchill Madikida was the first artist who did an installation in the Medical School foyer, using objects from the Johannesburg Hospital to create a hospice-type installation entitled Status II, 2006, an exploration into the theme of HIV/AIDS on which the artist had focused for a number of years. The second was a sculpture by Walter Oltmann entitled The double helix, 2007; and the third was a series entitled Biko Series II, 2008 by Colin Richards.

The Museum has been fortunate in having significant artworks donated to it. This included a major series of photographs by world renowned photographer David Goldblatt relating to asbestos mining in South Africa and Australia, and the health consequences of this, which highlight the devastation asbestos mining has caused to the people involved in mining operations, their families, and the environment. Two of the important photographs: Blue asbestos on the tailings dump of the Owendale Asbestos Mine. Northern Cape, 2002, and Tailings dump after reclamation. Owendale Mine. Northern Cape. 2007 are displayed in the foyer.

An art space was established in the Museum on the mezzanine level. Selection of artists to have exhibitions in this space has been limited to those producing work which are of specific interest to health science students, school learners and the general public in a museum of this nature.

Some of the intentions of this initiative are to enhance the foyer of Medical School by the installation of appropriate contemporary artworks by South African artists; to open the Museum to a wider audience, thereby increasing its visibility and that of Medical School and to enrich the perspectives of health professions students through seeing cogent and poignant work by artists of high caliber in order to enhance their understanding of contemporary art-making in this country and encourage creativity and different perspectives among them.

An active exhibitions programme has been established and maintained over the years, with two major researched exhibitions, accompanied by important publications, being produced. These
are: Health and health care under apartheid, an exhibition initially conceived and researched by Dr Jane Doherty which was subsequently revised and greatly enlarged by Assistant Professor Simonne Horwitz, Department of History, University of Saskatchewan, Canada and I. The exhibition was subsequently shown at the University of Cape Town, Stellenbosch University and Constitutional Court in Johannesburg (2010 to 2011).

The second major exhibition, Confronting HIV/AIDS, is a permanent exhibition which was completed in 2013 and provides a visually and intellectually stimulating account of the HIV/AIDS epidemic by introducing the disease, listing its clinical stages, looking at the history and spread of the disease, particularly in South Africa, and at treatment. The text was prepared by Professor Maria Papathanasopoulos, Co-Director: HIV Pathogenesis Research Laboratory and Genotyping Laboratory, Department of Molecular Medicine and Haematology, School of Pathology, Wits; Assistant Professor Simonne Horwitz, Department of History, University of Saskatchewan, Canada and I.

A third major exhibition, Poliomyelitis – the dread of yesteryear, which opened in 2012, which I researched. The exhibition was opened by Professor Barry Schoub, former Executive Director of the National Institute for Communicable Diseases, National Health Laboratory Services and Wits Professor of Virology who contributed extensively in advising and assisting me during the research process.

Several permanent displays were changed and information updated. Consultation with experts in various areas took place and the Museum was extremely fortunate to work with a number of these specialists over the years. The panels of alternative modalities of health care and treatment were updated, redesigned and installed in 2008. We were extremely fortunate in having the much acclaimed South African photographer Jodi Bieber allow us to use one of her images for the traditional southern African healing showcase, and Fiona Simmons for her photograph of a sangoma in another display of southern African traditional healing.

Many of the temporary exhibitions made fascinating viewing for all visitors to the Museum. These have included African Genesis, an exhibition of hominid and associated fossils from the Cradle of Humankind World Heritage site in which the world famous Mrs Ples and the Taung child, never before shown together, with dinofelis (sabre tooth cat), were exhibited. This unique exhibition, made possible through collaboration between the School of Anatomical Sciences, the Adler Museum and the Transvaal Museum, Northern Flagship Institution (Ditsong) (2006); Rural health care: All Saints Hospital, Umtata, Eastern Cape, an exhibition of photographs taken by Dr Pauline Ingle in the 1960s and 1970s containing images of patients, health education and activities, rural surgery and medicine highlighting issues in rural health care (2006); Are your rights respected? An exhibition presented in collaboration with GALA (Gay and Lesbian Archives) in which the original artwork produced by Tommy Motswai and Vusi Malindi for a comic which looked at issues of sexual violence, STIs, HIV and different sexualities in the deaf community (2006); HIV/AIDS: Nine lives, an exhibition donated to the Gay and Lesbian Archives initially displayed at the Constitutional Court and now on loan to the Museum (from 2004).

The 50th anniversary of the Adler Museum was celebrated in style on 18 October 2012 with Faculty and Museum staff, past and present Board members, alumni, early donors and friends marking the Golden Jubilee of the Museum with a celebratory tea. Dr Joseph Teeger, a 1951 Wits Medical School graduate and former Board member, addressed the guests. An exhibition on the highlights of the Museum was compiled by the Museum staff for the occasion. The Museum continues the ideals of the Museum’s co-founders, Drs Cyril and Esther Adler, to preserve the history of the health sciences in southern Africa.

Further exhibitions relating directly to the teaching programme of the Faculty included: History of tuberculosis, researched and conceptualised by
Professor Mary Edginton and sponsored by Sandoz (2006); Asbestos: wonder fibre – serial killer, researched and designed by Jemima Cantrell of the National Institute for Occupational Health and Professor Tony Cantrell (2008); and Malaria in Context, researched by Professor Maureen Coetzee, Director, Malaria Entomology Research Unit, School of Pathology, Wits; Dr Basil Brooke, Vector Control Reference Unit, NICD/NHLS & Malaria Entomology Research Unit, School of Pathology, Wits; Professor John Frean, Deputy Director, NICD/NHLS & School of Pathology, Wits and Dr Liz Thomson, General Director, Medecins Sans Frontières/Doctors Without Borders (MSF) South Africa which I curated. The exhibition was sponsored by MSF. It encompasses the history of malaria, a clinical description of the disease, its prevention and treatment and its economic implication (2011).

Co-operation with other entities has led to the Museum’s involvement in the annual Yebo Gogga project, an initiative of the Life Sciences Museum and Biodiversity Centre, School of Animal Plant and Environmental Sciences; Body Knowledge: Medicine and Humanities in conversation, a medical humanities conference arranged by WISER (Wits Institute for Social and Economic Research); Health Science Week with Sci-Bono Discovery Centre, Newtown and the Health Professionals Art Society show which are annual exhibitions of artworks in all media by members of the society. There have also been a number of important loans from the collection to other museums, outside organisations, artists and film companies which have increased the visibility of the Museum and its wonderful collection.

Collaboration within the Faculty and within the University has resulted in a number of interesting exhibitions which have included Wits90 Treasures arranged for the 90th anniversary of Wits and held at the Wits Art Museum and most recently 20 Years of Democracy, arranged for Faculty Research Day in 2014. It has also resulted in collaboration in research projects such as the History of Nursing Education at Wits published in 2012.

The AJ Orenstein Memorial lecture has gained prominence as a major annual Faculty event and attendances at this prestigious lecture have risen sharply since 2004 when it was delivered by the late Professor Phillip V Tobias and was aptly titled At my Wit’s End? After 60 years at Medical School. Recent speakers have included Dr Sydney Brenner, Nobel prize winner (Physiology or Medicine 2002) in 2005, and Professor Jiri Dvorak, FIFA Chief Medical Officer and Chairman F-MARC, who was visiting South Africa for the Football World Cup in 2010. The complete list can be seen on the Museum’s website.

The Adler Museum Bulletin is now in its 39th year of publication and remains, to the best of our knowledge, the only journal which publishes papers in the field of historical research in the field of medicine and allied health sciences on the African continent. The Editors have wisely been recording the immense contribution that the Faculty of Health Sciences and this Medical School has made, through its graduates and alumni, locally and internationally since 2004. They have received and solicited a number of personal histories from distinguished graduates, many of whom have made contributions of global significance in order to ensure that as much of this history is recorded and preserved, thereby performing an important role within the Faculty.

A notable event in 2013 was the publication of Our Graduates 1924-2012 which I researched and produced. The publication contains a detailed chronology of events relating to the history of the Faculty of Health Sciences and the Medical School and a list of graduates which includes all under- and postgraduate students in all disciplines and in all specialties taught by the Faculty from 1919. The summary of graduates from 1925 to 2012 at the end of the publication has enabled the Faculty to gauge in numbers the contribution it has made over the years in terms of the training of health professionals.

Guided tours for school and other groups are an increasingly popular feature of the Museum’s education programme and worksheets, devised with the assistance of school educators, are well used during school visits. These are constantly updated and become part of the portfolio work of school learners.

A common but unsatisfactory and insufficient yardstick in monitoring the performance of any museum is its attendance figures. It is pleasing to note that attendances have risen from 5 190 in 2004 to 10 140 in 2013: for a small and highly specialised museum with limited resources, this is an excellent achievement and is testament to the efforts of the staff of the Museum.

There are so many people who contribute to the progress of the Museum that one is reluctant to start listing names. They are always mentioned in the Museum’s Annual Report which is published on its website for all to see. In closing, I wish the new Curator well for the future and trust that this precious Museum will go from strength to strength.
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References are listed at the end of the manuscript and should be indicated in the text by superior numbers and listed at the end of the paper in numerical order. Do not list references alphabetically. References should be set out in the Harvard style, and only approved abbreviations of journal titles should be used. ‘Personal communications’ and work that is ‘in preparation’ may be cited in the text, but not in the reference list. However, formal theses and dissertations, even though unpublished, may be listed provided full details are supplied, including the institution where the master copy is lodged. Do not indent or otherwise format each entry. Note that this is a reference list and should not be formatted as footnotes.

Reference examples

Dr Frack had been a member of the 1919 Class, the Tin Templers.¹

It did not, however, include anything about osteology, for bones would have doubled the size of The Pocket Gray.²

Direct quotes should be in italics or in inverted commas

Military medicine, surgery, and nursing were matters too important to be left to private charity, however well intended….³

“The tenth edition of Aids to Anatomy appeared in 1940…. It had been edited by Professor Stibbe, who, sadly, in 1923 left the University of the Witwatersrand.”⁴

References


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