

WORLD NEUROLOGY

THE OFFICIAL NEWSLETTER OF THE WORLD FEDERATION OF NEUROLOGY

WFN Council of Delegates Meets in Prague

BY WOLFGANG GRISOLD, MD,
AND STEVEN L. LEWIS, MD

The Council of Delegates of the World Federation of Neurology (WFN) met Sept. 12 during the 12th European Congress on Epileptology in Prague, Czech Republic. The meeting was opened by Emilio Perucca, MD, International League Against Epilepsy (ILAE) president, who welcomed the WFN delegates to Prague and emphasized the excellent connections between the WFN and the ILAE.

The introduction was followed by a welcome from WFN President Raad Shakir, MD. Secretary General Wolfgang Grisold, MD, identified 26 voting delegates, including proxies.

Gallo Diop, MD, PhD, recently ended his period as an elected trustee, and Dr. Shakir emphasized his achievements, in particular founding of the African Academy of Neurology (AFAN). For the open trustee position, two candidates, Sarosh M. Katrak, MD, and Steven L. Lewis, MD, applied and each gave a five-minute introduction. This was followed by voting.

Dr. Shakir, Vice President William M. Carroll, MD, and Dr. Grisold each spoke on the achievements and work of the past year. Dr. Shakir informed attendees that John N. Walton, MD, and Noshir H. Wadia, MD, passed away in the the last year. The president also gave the final

report from the the World Congress of Neurology (WCN) 2015 in Santiago, Chile, where 3,500 attendees made the meeting a success.

Sixty percent of the profit made in Santiago was dedicated to the WFN and 40 percent to the Chilean Society of Neurology, Psychiatry, and Neurosurgery.

Collaborations with the World Health Organization (e.g., the Atlas), ICD 11, the Global Neurology Network, the WFN Zika working group (chaired by John England, MD), and the efforts of the WFN to improve neurology in all regions of the world were mentioned.

Dr. Carroll reported on the development of the next WCN in Kyoto, Japan,



Emilio Perucca, MD, (right) president of the International League Against Epilepsy, welcomes the WFN Council of Delegates to Prague. Also pictured (from left): William Carroll, MD, WFN vice president, and Raad Shakir, MD, WFN president.

and the structure of the Congress. Three Nobel laureates will give lectures, and the number of sessions will be 210. The site of WCN 2019 is Dubai, United Arab Emirates. Applications from Europe for WCN 2021 were accepted until the end of September 2016.

The secretary general reported on five issues:

1. The WFN office
2. Zika
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Austrian Day of the Brain Sheds Light on Neurology Issues

BY WOLFGANG GRISOLD, MD

The Austrian Society of Neurology (OEGN) participated in the third Day of the Brain July 22, 2016, by discussing important topics at a press conference. The OEGN was represented by Elisabeth Fertl, MD, OEGN president, Reinhold Schmidt, MD, OEGN past president, and Wolfgang Grisold, MD, World Federation of Neurology (WFN) secretary general.

In Europe, 220 million people

suffer from one or several neurological diseases. This is important because with increasing age, individuals experience disorders such as dementia, Parkinson's disease, and stroke more frequently.

Austrian neurology, represented by the OEGN, has a strong presence with 970 neurologists, including previous neuropsychiatrists. Within Austria, there is a network of 38 acute departments with stroke units, a growing number of neurological rehabilitation centers,

and other neurological centers devoted to care and rehabilitation. All stroke units are connected in a nationwide data and quality assurance system, and they have incorporated intravenous thrombolysis in their procedures. In 11 stroke units, interventional procedures can be performed for patients with acute stroke.

Dr. Schmidt gave an overview on dementia, emphasizing that efforts are needed to maintain cognitive abilities

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Wolfgang Grisold, MD, (from left) WFN secretary general, Elisabeth Fertl, MD, OEGN president, and Reinhold Schmidt, MD, OEGN past president, represent the OEGN during the World Brain Day 2016 press conference.



WORLD FEDERATION OF NEUROLOGY

Editors-in-Chief

Steven L. Lewis (Editor)
Walter Struhal (Co-editor)

WFN London Office

Chester House
Fulham Green
81-83 Fulham High Street
London SW6 3JA

United Kingdom
Tel.: +44 (0)20 3542 1657/1658
Fax: +44 (0)20 3 542 1301
info@wfneurology.org

WFN OFFICERS

President Raad Shakir (United Kingdom)
First Vice President William Carroll (Australia)
Secretary General Wolfgang Grisold (Austria)
Treasurer Richard Stark (Australia)

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WORLD NEUROLOGY

WORLD NEUROLOGY, an official publication of the World Federation of Neurology, provides reports from the leadership of the WFN, its member societies, neurologists around the globe and news from the cutting-edge of clinical neurology. Content for *World Neurology* is provided by the World Federation of Neurology and Ascend Integrated Media.

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Editorial Correspondence: Send editorial correspondence to *World Neurology*, Dr. Lewis at steven_lewis@rush.edu or Dr. Struhal at walter.struhal@akh.linz.at.

World Neurology, ISSN: 0899-9465, is published bimonthly by Ascend Integrated Media
6710 W. 121st St., Suite 100
Overland Park, KS, 66209
Phone +1-913-344-1300
Fax: +1-913-344-1497

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PUBLISHING PARTNER

Ascend Integrated Media

President and CEO

Barbara Kay

Vice President of Content

Rhonda Wickham

Vice President of eMedia

Scott Rarden

Vice President of Sales

Donna Sanford

Project Manager

Amanda Nevala

Art Director

Brianna Vaughn

Editorial Offices

6710 West 121st St., Suite 100
Overland Park, KS 66209
+1-913-469-1110

FROM THE EDITORS

BY STEVEN L. LEWIS, MD, EDITOR,
AND WALTER STRUHAL, MD, CO-EDITOR

We are very pleased to introduce the November/December 2016 issue of *World Neurology*, which starts with the report from the Sept 12, 2016, Council of Delegates meeting that was held in Prague, Czech Republic.

In his President's Column, Raad Shakir, MD, describes the close relationship and tight collaboration of the World Federation of Neurology (WFN) and the six WFN regional organizations and the role of the World Congress of Neurology in enhancing the regions.

Wolfgang Grisold, MD, the secretary-general of the WFN, reports on the activities of the Austrian Society of Neurology related to the July 22, 2016, third Day of the Brain, and Federico Pelli-Noble, MD, reports on the Day of the Brain activities that occurred on the same day in Tucuman, Argentina.

Christopher Gardner-Thorpe, MD, also provides a thoughtful discussion on neurology and international relations.

Kate Riney, MD, PhD, updates us on epilepsydiagnosis.org, an extensive

and unique online tool for diagnostic information on the epilepsies, which can be of benefit to all neurologists (and our patients) globally.

There are also a number of book reviews in this issue, including one from Edward J. Fine, MD, on *Brain Renaissance from Vesalius to Modern Neuroscience*. Dr. Grisold reviews *Teaching and Tuition of Neurology and Neurosurgery in Indonesia*

During One Century: 1850-1950, and Yuri Takeuchi, MD, reviews *Mentored by a Madman: The William Burroughs Experiment*.

Also in this issue, Mustapha El Alaoui Faris, MD, provides us with an overview of the *Continuum* program in Morocco, as a model for other regional programs based on *Continuum*, the official continuing medical education publication of the American Academy of Neurology (AAN) and with which a joint AAN-WFN

effort helps provide *Continuum* to user groups in various countries where this resource is needed. We look forward to future contributions from other regional *Continuum* user groups to highlight how

this important educational resource is being utilized to support neurologic education and patient care.

John D. England, MD, provides his editor-in-chief's update from the *Journal of the Neurological Sciences*, the official journal of the WFN, and personally reflects

on the recent loss of two leaders in academic neurology, Donald Gilden, MD, and Omar Khan, MD. Finally, Donald Silberberg, MD, the past editor of *World Neurology*, provides an extremely heartfelt tribute in his obituary for Dr. Gilden.

We sincerely hope that you will enjoy the articles in this issue, and we continue to encourage your outstanding submissions and helpful suggestions for the benefit of all of the readers of *World Neurology*. •



STEVEN L. LEWIS, MD



WALTER STRUHAL, MD

IN MEMORIAM

Donald Gilden, MD: A Unique Neurologist and Scientist

BY DONALD H. SILBERBERG, MD

For Donald Gilden, MD, his beginnings in Baltimore in many ways foreshadowed what was to become a distinguished career in neurology and virology. Don excelled in his studies while developing into a talented baseball pitcher, good enough to receive an offer from the Baltimore Orioles to join its leading farm team as a prospective big-leaguer. When Don broke the exciting news to his father, his father looked at him — an ace student who had been accepted to Dartmouth College — and said he was destined for great things: in college, not on a baseball field. Don accepted his father's advice, bringing his combination of a competitive spirit, persistence, and teamwork when he enrolled at Dartmouth. So, how did his early years contribute to the development of such a remarkable career?

Don returned to Baltimore for medical school and the University of Maryland, which later recognized him as one of its most distinguished alumni. He trained in neurology at the University of Chicago, which recognized him as a distinguished alumnus. There he met his wife Audrey and began their devoted 49 years together. He then spent two years as a neurologist at the Walter Reed National Military Medical Center. He correctly saw that the field of neurovirology held great promise with so many unanswered questions. In 1969, he began his scientific career as a fellow in neurovirology at the Johns

Hopkins School of Medicine. In 1970, his background uniquely qualified him for the faculty of the University of Pennsylvania's department of neurology and its affiliate the Wistar Institute to attempt to find the virus that causes multiple sclerosis. Penn and Wistar had just established the first comprehensive research and clinical care center for MS, and Don quickly became a key member of the team.

A powerful technique at that time for detecting latent viruses was so-called co-cultivation, growing human cells that might contain a virus together with well-characterized lines of cells that had been maintained for many generations *in vitro*, and were known to be free of viruses. This required finding fresh brain and spinal cord tissue from recently deceased individuals with MS and from individuals known to not have MS. A brain bank registry was established. Don made countless trips to autopsy suites throughout Pennsylvania, often on short notice in the middle of the night. The nearby Philadelphia medical examiner's office became a source of control tissues. In the course of these many unrewarding attempts to find an MS virus, Don discovered that the two principal human herpes viruses, Herpes simplex virus (HSV) and varicella zoster virus (VZV), could be found in latent forms in virtually all dorsal root and trigeminal ganglia at postmortem, whether from individuals with MS or controls.

This remarkable finding soon became a major focus of Don's research: How did the virions remained latent, what activated them, and how could VZV cause chicken pox in children and then



Donald Gilden, MD

shingles later in life? In order to further develop his molecular biology skills, in 1980 and 1981 Don joined Yechiel Becker's laboratory in the department of molecular virology at the Hebrew University-Hadassah Medical Center in Jerusalem as a visiting professor. While in Jerusalem, Don found time to join a fast pitch softball league and become captain of the Israeli team with teammates who were 15 to 20 years younger than Don, playing the position of catcher. They played in the Maccabiah Games, Israel's Olympics.

Returning to Penn, he began to explore the many facets of VZV, leading to landmark discoveries that link the virus to giant cell arteritis in its many clinical phenotypes, shingles, temporal arteritis, ischemic optic neuropathy, cerebral and multi-organ vasculitis, and, most recently, Takayasu's arteritis. This opened the way to revolutionize treatment. At the time of his death, scores of colleagues

see DON GILDEN, MD, page 8

PRESIDENT'S COLUMN

How Does the WCN Enhance Regions?

BY RAAD SHAKIR, MD

The World Congress of Neurology (WCN) is the major event for a host society and is as important for the regions. There is no doubt that in each of the last four congresses the impact on the regions was positive, but to a varying degree as expected. This is one of the main reasons for holding congresses in rotation across continents.

If we start with Bangkok in 2009, the Congress was well attended and drew delegates from neighboring countries. This success resulted in the consolidation and formal establishment of the Asian Oceanian Association of Neurology (AOAN). The World Federation of Neurology (WFN) provided the AOAN with seed money to establish its legal status, produce its bylaws, and hire its own professional conference organizer. This indeed happened, and the AOAN is now a well established and financially viable association based in Singapore. This was further consolidated by their most successful subsequent Congress in Melbourne in 2012. This was made even

more successful as they drew on the huge experience of the Australian and New Zealand Association of Neurology. We have to remember that Sydney hosted a successful WCN in 2005. This made the Australian neurologists experts in making congresses work. The AOAN was well organized, and the excellent Congress reinforced the status of the AOAN. Subsequent meetings in Macao and Kuala Lumpur this year continued the progress. It is clear that although the AOAN was established in 1961 with its first meeting in Tokyo, its legal status, bylaws, and financial structure only started to happen following the success of WCN Bangkok.

If we move now to WCN Marrakesh, the situation is even more spectacular. The Congress banner was "With Africa For Africa." Prior to the WCN, the only African association was a combination of neurologists and neurosurgeons. The Pan African Association of Neurosciences (PAANS) has been in existence for nearly 40 years, but the structure and function has never been brought to the modern age. Moreover, the neurosurgeons, except

a few, decided to form their own African setup and left PAANS. It was high time to organize African neurology in one solid organization with proper membership, a constitution, and bylaws as well as legal status. This aim was paramount for African neurologists who saw the Marrakesh Congress as the opportunity to establish their academy. The Moroccan society and the WFN agreed to create an Africa fund. This came from the profits of the WCN and was specifically dedicated for the establishment of an African neurology association. Although it took four years, with good will and massive organization of the head of the Africa initiative Gallo Diop, MD, PhD, of Senegal, and the WFN Regional Chair Riadh Gouider, MD, of Tunisia, it all came to fruition.

In August 2015, a meeting in Dakar of 27 African associations established the African Academy of Neurology (AFAN). The bylaws and constitution were approved, democratically elected officers were chosen, and now the organization is officially registered as a nonprofit organization in Cape Town, South Africa. The

needs of Africa are massive. President Johan Aarli, MD, established the WFN Africa task force in December 2006, and we are delighted that the organization is now fully functional. The first Congress of AFAN is going to be held jointly with the Congress of the Pan Arab Union of Neurological Societies in March 2017 in Tunisia.

One might rightly think that neurology in Europe is well organized and education is advanced, which is certainly the case. However, at the time of the WCN 2013 in Vienna, there were two continental neurological organizations in deep discussions and negotiations on a merger. At the time of the WCN Vienna, one of the two regional organizations, the European Federation of Neurological Societies



RAAD
SHAKIR, MD

see **PRESIDENT**, page 10

Epilepsydiagnosis.org: A Novel Diagnostic Manual of the Epilepsies

BY KATE RINEY, MD, PHD

Although there is much information on the internet about epilepsy and seizures, there is a glaring absence of a single source of information that aligns with the international classification and provides an organized presentation of the many seizure types and syndromes to help with diagnosis and treatment.

This information gap was recognized and led to the International League Against Epilepsy's (ILAE) epilepsydiagnosis.org project, which was launched formally in September 2014. It has been a unique resource in medicine and has harnessed the power of the internet to present the complexity of the significant amount of new information now available about the epilepsies

and their etiologies, in a manner that is concise, current, and accessible to a global audience. It is as relevant to those in primary and secondary health care settings as it is to those in tertiary epilepsy practices. It also shows promise as an instructional and training resource for those who are new to medicine.

The project was conceived and developed by the ILAE's Commission on Classification and Terminology (2009-2013) and this Commission's Diagnostic Manual Taskforce, in partnership with eResearch at the University of Melbourne, Australia. The project has been further developed by the ILAE's Commission on Classification and Terminology (2013-2017) and this commission's epilepsydiagnosis.org and syndromes task force.

Since the release of epilepsydiagnosis.org, its reach has steadily increased each month. Approximately 10,000 unique visitors from around the world access the site each month, viewing pages more than 40,000 times per month. Website users span professional groups that range from those in primary care to those working in tertiary health care settings. The ongoing growth in user engagement with the website continues to occur organically through relevance of the website content to those in clinical practices where epilepsy is diagnosed and managed.

Website Goals

- To make available, in an easy-to-understand form, the latest concepts relating to seizures and the epilepsies
- To assist clinicians, particularly those in primary and secondary health care settings anywhere in the world, who look after people with epilepsy to diagnose seizure type(s), classify epilepsy, diagnose epilepsy syndromes, and define the etiology
- To provide an educational resource that is current for personal learning and small group teaching settings

Website Offerings

The structure of the website reflects the importance of seizure type,



syndrome, and etiology in clinical practice, and how these aspects of the epilepsy interrelate. You will find:

- Seizure type classification with video examples of seizure types: The availability of video is a unique feature of this site, allowing clinicians to clearly see the features of seizures, including distinguishing features from other similar seizure types. A short and instantaneous registration process is required to view the video section, and this is available to anyone with an internet connection. Individuals and their families have kindly given consent for videos to be freely available in this way.
- Seizure types presented with differential diagnoses, including a comprehensive section on epilepsy imitators: Find full descriptions of non-epileptic paroxysmal phenomena that can mimic seizures.

see **EPILEPSY**, page 7

ILAE'S COMMISSION ON CLASSIFICATION AND TERMINOLOGY [EPILEPSYDIAGNOSIS.ORG](http://epilepsydiagnosis.org) AND SYNDROMES TASKFORCE MEMBERS

2009-2013

Ingrid Scheffer, Sameer Zuberi, Sam Berkovic, Pippo Capovilla, Helen Zhang, Doug Nordli, Jeff Buchalter, Lynette Sadleir, Anne Berg, Mary Connolly, Laura Guilhoto, Edouard Hirsch, Sam Wiebe, Christian Korff, Andrew Lux, Yoshimi Sogawa, Elaine Wirrell, Stephan Schuele, and Kate Riney

2013-2017

Roberto Caraballo, Kate Riney, Norimichi Higurashi, Vivek Jain, Floor Jansen, Mike Kerr, Lieven Lagae, John Paul Leach, Ingrid Scheffer, Rima Nababout, Elizabeth Thiele, Federico Vigevano, Khaled Zamel, Sameer Zuberi, Muhammad Salisu, and Nerses Bebek

Continuum for Continuing Education in Morocco

BY MUSTAPHA EL ALAOUI FARIS, MD

The Moroccan Society of Neurology had the recent privilege of using *Continuum*:

Lifelong Learning in Neurology through the partnership between the American Academy of Neurology (AAN) and the World Federation of Neurology (WFN).

The first working session on May 4, 2016, during the National Congress of Neurology in Marrakech, Morocco, used the *Continuum* issue on *Epilepsy*. A second session was held Sept. 24, 2016, using the *Dementia and Multiple Sclerosis and Other Demyelinating Disorders* issues. The next session will be Dec. 17, 2016, in Rabat, Morocco, and will involve the



Mustapha El Alaoui Faris, MD

Continuum issues on *Movement Disorders* and *Neuroimaging*.

For organizing the *Continuum* sessions, the Moroccan Society of Neurology has established the following rules:

- Participation in the *Continuum* program is open to neurologists and to the third- and fourth-year residents.
- The articles from *Continuum* are sent by email to each of the participants.
- Each participant must read the entire *Continuum* issue and complete the questionnaires of the Post-Reading Assessment and the Patient Management problem
- Since Moroccan neurologists come from different cities in the country, it was decided to organize quarterly sessions with about 30 participants at each session.
- Each session will be devoted to two *Continuum* issues. Each session lasts a day, and each *Continuum* issue is studied for four hours. The first two hours are devoted to discussing the main items,

and the following two hours to correct questionnaires of the Post-Reading Assessment and the Patient-Management Problem.

Young neurologists and more senior neurologists were equally pleased to share this experience in a studious, relaxed atmosphere. Moroccan neurologists enjoyed the didactic nature of the *Continuum* program, the personal reflections of various authors of *Continuum's* articles in their fields of interest, and the clinical case studies. They would like to thank the staffs of the AAN and the WFN for allowing the use of this excellent educational document and especially to thank Steven L. Lewis, MD, editor-in-chief of *Continuum*, and Helen Gallagher, WFN



Moroccan neurologists take part in the Sept. 24, 2016, *Continuum* session, in Rabat.

CME program manager, for their efforts.

I invite neurologists worldwide to enjoy the *Continuum* program, an excellent educational tool for continuing education in neurology, thanks to the efforts of the AAN and the WFN. •

Mustapha El Alaoui Faris, MD, a World Federation of Neurology delegate, is responsible for the *Continuum* program in Morocco.

Editor's Update and Selected Articles From the *Journal of the Neurological Sciences*

BY JOHN D. ENGLAND, MD

August 2016 was an awful month for the world of neurology and the *Journal of the Neurological Sciences*.

We suffered the loss of two outstanding academic neurologists, Omar Khan, MD, and Donald Gilden, MD. Both were valuable members

of the Editorial Board of the *Journal of the Neurological Sciences*, and both were outstanding neurologists and academic teachers and researchers.

Their loss creates a great void in the world of neurology.

Dr. Khan, professor and chair of the department of neurology at Wayne State University, passed away Aug. 13 at age 53. He had been a faculty member at Wayne State since 1998 and chair of the department of neurology since 2012. He was an internationally known expert in multiple sclerosis and served as the director of the Wayne State University Multiple Sclerosis Center and Magnetic Resonance Image Analysis Laboratory. He served as principal investigator of more than 55 clinical trials and published extensively in the field of multiple sclerosis. He was extraordinarily helpful as a reviewer and Editorial Board member of the *Journal of the Neurological Sciences*.



John D. England, MD

Dr. Gilden, professor and former chair of the department of neurology at the University of Colorado School of Medicine, passed away Aug. 22 at age 78. He was the department's longest-serving chair (1985-2009) and led the department into an era of prominence. He exemplified the fast-disappearing triple threat academic with his outstanding abilities in clinical neurology, education, and basic research. He was internationally renowned as a foremost expert in the biology and pathogenesis of varicella zoster virus (VZV). He was the first to demonstrate that VZV DNA can be found in normal human sensory ganglia neurons, and described VZV-vasculopathy of brain. His most recent studies concentrated upon the association of VZV with giant cell (temporal) arteritis. He authored or co-authored 420 papers, many of which are now seminal articles in the field of neuro-virology and neurology. On a personal note, I owe him a great debt of gratitude since he offered me my first academic faculty position and helped guide my academic career. He was a tireless and gifted reviewer and contributor to the *Journal of the Neurological Sciences*.

In our ongoing attempt to inform readers of important and interesting new developments in the journal, the editorial staff has selected two new "free-access" articles for our readership.

1) Joel Huovinen and colleagues from Finland describe a probable familial subgroup of idiopathic normal pressure

hydrocephalus (iNPH) from a nationwide Finnish cohort of 375 shunt-operated patients with iNPH. A total of 60 patients (16%) had possible or probable familial iNPH. Eighteen (4.8%) had probable iNPH and 42 (11%) had possible familial iNPH. The familial iNPH patients had an approximately threefold risk of dementia compared to the sporadic iNPH patients. This study suggests that screening for familial iNPH is indicated for both clinical and research purposes. Identified familial cases should provide an opportunity to study the characteristics and genetic markers of this disease. Joel Huovinen et al., Familial Idiopathic Normal Pressure Hydrocephalus, *J. Neurol. Sci.* 368 (2016) 11-18. [http://www.jns-journal.com/article/S0022-510X\(16\)30384-7/fulltext](http://www.jns-journal.com/article/S0022-510X(16)30384-7/fulltext).

2) The Zika virus epidemic has become an important topic for public health and global neurology. Several neurological complications of Zika virus infection have been described, including the congenital Zika virus infection syndrome in babies, and meningoencephalitis, acute myelitis, and post-infectious Guillain-Barre syndrome in adults. In conjunction with the World Federation of Neurology Zika Work Group, Marco Medina, MD, and colleagues describe the first reported case of a reversible sensory polyneuropathy associated with acute Zika virus

infection. The patient was a 62-year old Honduran man who developed an acute "patchy" non-fiber-length-dependent sensory polyneuropathy associated with acute (laboratory-proven) Zika virus infection. The sensory polyneuropathy affected mainly the small sensory fibers and to a much lesser extent larger myelinated sensory fibers. The fact that the neuropathy began during the acute stage of the infection suggests a probable direct viral inflammatory process affecting sensory nerves. Marco Medina, et al., Zika Virus Associated With Sensory Polyneuropathy, *J. Neurol. Sci.* 369 (2016) 271-272. [http://www.jns-journal.com/article/S0022-510X\(16\)30535-4/fulltext](http://www.jns-journal.com/article/S0022-510X(16)30535-4/fulltext). •

John D. England, MD, is editor-in-chief of the *Journal of the Neurological Sciences*.



More Than 200 Attend 2016 World Brain Day in Argentina



FEDERICO
PELLI-NOBLE,
MD, PHD

Federico Pelli-Noble, MD, PhD, is a World Federation of Neurology Delegate for Argentina.

BY FEDERICO PELLI-NOBLE, MD, PHD

World Brain Day was celebrated on July 22, 2016, in Tucuman, Argentina. All of the Organizations of Health were present, and the topics included dementia, Parkinson's disease, epilepsy, and neuromuscular diseases. Nearly 200 people attended the conferences. It was a nice journey and a successful event, alerting the public about the increasing neurological problems related to an aging population. •

(Top) Dr. Pedro Nofal speaks to the community about dementia in San Miguel de Tucuman, Argentina.

(At Right) Community members and physicians take part in World Brain Day in San Miguel de Tucuman, Argentina. Alejandro Helguera (from left), Maria Ester Totongi, and Drs. Federico Pelli-Noble, Andrea Arcos, Pedro Nofal, Oscar Iguzquiza, and Alejandra Molteni.



BOOK REVIEW

A Century of *Teaching and Tuition of Neurology and Neurosurgery in Indonesia*

BY WOLFGANG GRISOLD, MD

The book *Teaching and Tuition of Neurology and Neurosurgery in Indonesia During One Century (1850-1950)* by Antoine Keyser provides a history of neurology in Indonesia, covering development of this field in different epochs of science and the changing political situation. It also memorably describes the research, theories, and final detection of beriberi in this part of the world.

Indonesia is a large country, and looking at its population of 240 million, distributed on 3,000 islands, it is surprising that we know so little about the country and its neurology. The territory of what now is Indonesia is briefly followed through history, which is important in order to understand the influence of different medical schools, mostly from the Dutch academic background, on the development of the health system, including neurology. The book describes the emerging specialty

of neurology in close context to psychiatry and the later emerging field of neurosurgery.

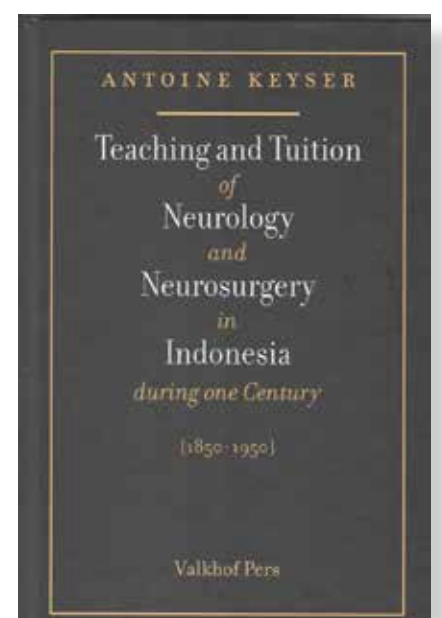
The reader will find many familiar names from European neurology involved in research and development. The book also includes a short sketch on specialization in psychiatry in Indonesia. In particular, the studies of the Swiss psychiatrist Emil Kraepelin (1856-1926) visiting and studying the cultural factors influencing mental diseases is a good example.

The author chronologically looked at publications and topics of interest to neurologists. The most impressive story is that of beriberi, and a separate chapter not only teaches the importance of this disease for the region, but the tortuous path the final discovery of the cause and offering of effective treatment of this condition. This story, like the similar story of scurvy, teaches how inflexible dogma,

conventions, and large organizations (where individuals including prisoners, soldiers, and patients were kept under uniform conditions) can endanger the health of persons. Also, the author's description of vitamin B1 deficiency and its effect on the health of people is a worthwhile lecture for teaching purposes.

This book mirrors the field of neurology in the past 100 years worldwide, using the example of Indonesia. The development of local conditions are described, based on historic facts as well as publications.

It is a good example of how a book comprising narrative and facts can provide valuable background on neurology in an individual area. The World Federation of Neurology could be well advised to encourage its members to produce similar outlines



of the history and development of neurology in its regions. •

Wolfgang Grisold, MD, is secretary general of the World Federation of Neurology.

BOOK REVIEW

From Vesalius to Modern Neuroscience

BY EDWARD J. FINE, MD

In *Brain Renaissance From Vesalius to Modern Neuroscience*, authors Marco Catani and Stefano Sandrone have written chapters based on translations from Andreas Vesalius' book on the brain from his *De Humani Corporis Fabrica*, followed by commentaries. The book is published by Notting Hill Editions, 2016.

The first chapter adroitly reviews the history of dissection of human bodies and Galen's hegemony prior to Andreas Vesalius' first edition of his seminal and revolutionary anatomical textbook of 1543.

Chapter 2 recounts Andreas Vesalius' illustrious lineage in a family of physicians and pharmacists who attended royalty. Andreas Vesalius was



Edward J. Fine, MD

born on Dec. 31, 1514, in Sablon, a neighborhood of Brussels. His father was the royal apothecary (pharmacist) to Charles V of Spain. At age 15, Vesalius entered the Castle College in Leuven, which promoted the philosophy of humanism. At age 18, Vesalius left Leuven to study medicine in Paris.

Chapter 3 recalls Vesalius' medical education in Paris and his encounter with profound differences between what he saw in human cadavers and Galen's incorrect descriptions. Galen's texts of anatomy were the canon from the time of the Roman Empire to publication of Vesalius' *De Humani Corporis Fabrica*. Vesalius left Paris abruptly without graduating, due to war between Henry II of France and Charles V of Spain, patron of Vesalius' father.

The fourth and fifth chapters highlight Vesalius graduating from Leuven Medical School, traveling to and joining the medical school at Padua, Italy, renowned for its eminence in teaching anatomy from human dissection. Through dissection, Vesalius found so many more errors in Galen's descriptions of human anatomy that Vesalius concluded Galen had dissected monkeys and other animals rather than humans. Chapters 6, 7, and 8 deal with production of the *Fabrica*, a volume of nearly 700 pages of which the seventh book deals with the brain, making 200 woodcuts used to print illustrations, and sources for backgrounds in anatomical illustrations. Vesalius' friendship with Contarini, the podesta (chief magistrate) of Padua, provided corpses of recently freshly executed criminals for dissection.

Disgusted by nefarious intrigues of jealous surgeons and physicians at the

Court of Phillip II in Spain, Vesalius escaped to the Holy Land after contacting colleagues who would petition his return to the chair of anatomy and surgery at Padua. The authors cite reliable accounts that Vesalius studied medicinal herbs there. He died attempting to return to Padua. His death on the island of Zante was attributed to exhaustion from scurvy, or illness caused by a prolonged voyage in the tempestuous Mediterranean Sea.

Chapter 13 defines Vesalius' concept of the brain as the source of sensation and voluntary movement. Vesalius was versed in comparative anatomy: "... there is no difference at all in the structure of the brain in the parts that I have dissected in the sheep, goat, monkey ... when compared with the human brain." He recognized that man's intelligence was due to "... the human brain larger proportionally to his body but also larger than all of the animals" Vesalius stridently denied the presence of the rete mirabile in the base of the human skull, a structure Galen insisted was present in humans. This structure is part of bovine skulls. Vesalius also decried Galenic beliefs about ventricular function.

In Chapters 14 and 15, Vesalius denotes *dura* and *pia* as hard and soft membranes surrounding the brain. He reminds readers of similarities and differences between these structures and pericardium and epicardium. Vesalius presciently mentions that the surface of the thin membrane (*pia*) is covered with aqueous liquid (cerebrospinal fluid) and that this membrane "provides a defensive wall for the brain against collisions with the skull."

In Chapter 16, Vesalius describes the corpus callosum, brainstem, and cerebellum with emphasis on the position and external surface of the cerebellum. Vesalius rebuked Galen for not describing accurately the morphology of the cerebellum: "Oh, Galen, you have been deluded without good reason by things of little importance and sometimes also by your apes." Vesalius comments on the mid-position of the corpus callosum — that it is a band of fibers connecting the hemispheres. The commentary begins with the statement that Galen and Vesalius assigned a mechanical function to the corpus callosum to keep the cortex from collapsing into the ventricles.

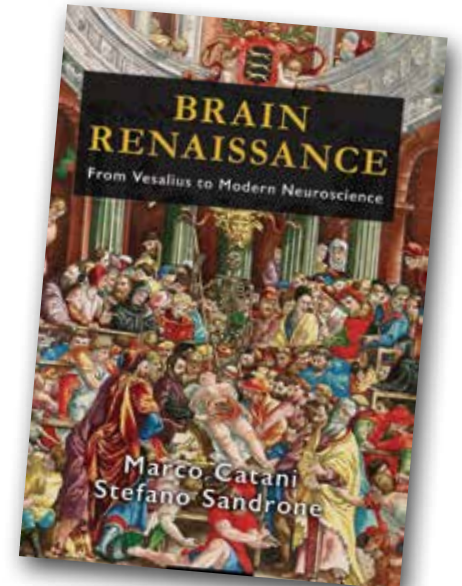
In the commentary, we learn that some anatomists succeeding Vesalius assigned absurd roles to the corpus callosum such as the seat of the soul. Spurzheim and Gall proposed that the corpus callosum "contributed to producing action and reciprocal reaction between the hemispheres." We read that persons born with agenesis of the corpus callosum may be nearly normal or be developmentally impaired. Catani and Stefano Sandrone accurately summarized

Gazzaniga and Sperry's research on the functions of persons who underwent transection of the corpus callosum for control of epilepsy. Catani and Sandrone inform us that the anatomical fornix was linked to arches in Rome where prostitutes met their customers. They recounted the discovery of connections of the fornix to mammillary bodies by Felix Vicq d'Azyr in 1786. These authors advanced the idea that Papez, who is credited for "discovering" a circuit for emotion in 1937, was actually scooped by Paul Broca in 1878. Moreover, Christfried Jakob's circuit for emotions closely resembled James Papez's 1937 diagram. John Fulton and Jacobsen observed chimps were less aggressive after they had resected portions of their frontal lobes. Antonio Moniz, assisted by the neurosurgeon Almeida Lima, injected pure ethanol into frontal lobes of chronic schizophrenics. They were convinced they had improved the patients' behavior. They were visited by Walter Freeman, an ambitious neurologist, who later performed 3,000 trans-orbital leucotomies that partially controlled violent behavior, but caused profound inability to plan and initiate activities. Catani and Sandrone summarized the tragic case of H.M. who suffered anterograde amnesia after bilateral removal of his hippocampi in an attempt to control partial complex epilepsy.

In the chapter on the pineal gland, Vesalius localizes this structure to the base of the third ventricle and its function as a gland. Sandrone and Catani summarized knowledge of pineal function from Descartes' opinion as the seat of the soul to current knowledge of its role in secretion of melatonin. Connections between the photoreceptors in the eye to the suprachiasmatic nucleus in the hypothalamus and then to the pineal gland control increase melatonin release from the pineal gland at night and suppress its secretion during daylight. I was amused to learn that farmers expose hens to excessive artificial light to suppress melatonin release and increase egg production.

Although the titles of chapters on Testes and Buttocks of the Brain and Sex on the Hills may strike readers as risqué, the content is about the colliculi and the dependent pineal gland resembling these organs. Catani and Sandrone explain lucidly how the expansion of occipital lobes replaced the superior colliculi as the principal structure for vision in the ascent of evolution from birds to man. They mention the role of the inferior colliculus in the auditory pathway from medulla to the primary auditory cortex.

In Chapter 22 on the cerebellar processes, Vesalius lambasted Galen for his fanciful and fallacious concept of the function of the cerebellum as a valve to control the flow of the animal



spirits to the spinal cord and then to the nerves. Vesalius vehemently objected to the misnomers of Galen used to describe folds of the cerebellar cortex as *vincula* or chains.

Commentary following Vesalius on the cerebellum contains a plethora of interesting facts, including that the elephant has the largest cerebellum in absolute and relative size. We learn that Costanzo Varoli removed the brain from the skull, inverted it, and described the *pons* (Latin for bridge). Thomas Willis in 1664 discovered its three peduncles. Albrecht von Haller corrected Willis' statement that the cerebellum controlled involuntary movements of the heart and lungs by locating these functions in the brainstem. Luigi Rolando used electrodes supplied with current from Volta's electrical pile to stimulate regions of the brains of pigs. He found muscular movements were strongest when he stimulated the cerebellum. Pierre Flourens in 1824 correctly assigned coordination of movement to the cerebellum and movement to the spinal cord. Catani and Sandrone end their commentary tersely, describing cerebellar cellular anatomy and Golgi's vicious defense of the syncytial theory of brain architecture in his Nobel lecture in 1906.

Vesalius described the infundibulum as the structure that collects and drains cerebral phlegm. He believed drainage from the infundibulum out of the cranium occurred through spaces surrounding arteries, veins, and nerves. The commentary describes the connections between the hypothalamus and pituitary, and the regulatory effects of the hypothalamus on thyroid, adrenal, and ovarian or testicular hormones. The authors cited the amazing case of the pituitary giantess Aama Bataillard, whose autopsy revealed a greatly enlarged pituitary. They summarized extensive research on the influence of pituitary extracts on growth and maturation in Chapter 24.

Subsequent chapters deal with the

see **VESALIUS**, page 8

INTERNATIONAL RELATIONS

A Call to Foster International Relations

BY CHRISTOPHER GARDNER-THORPE, MD

It would be trite to say that at no time have good international relations been more necessary than now. We live largely in communities, and, ultimately, everything we do is dependent upon the consent of others. We can achieve our human aims peacefully or by the alternative approach. Hence relations between all of us as individuals, as communities, and as nations, need to be nurtured — and this involves compromise.

Neurology affects all persons too, because we are all at risk of neurological disorders, and the specialty affects us professionally as well in our everyday jobs. Good relations between professionals are essential, as are relationships between professionals and their patients.

The neurological community worldwide is well served by local groups and societies in each country and further afield. For example, the formation of the European Academy of Neurology by the coming together of the European Federation of Neurological Societies and the European Neurological Society demonstrates how on one continent, Europe, like-minded persons can come together to exchange ideas and promote good practice and good research. Communication between individuals is vital in professional life (as it is in personal life), whether face-to-face or by means of messages on paper or increasingly by electronic means. How can we facilitate the interactions between all of us who desire increased cooperation and friendship too?

International relations are enhanced by the work of organizations, including the World Federation of Neurology (WFN) with its network of contacts throughout the globe and its conferences. The publication of *World Neurology* offers a site for the sharing not only of information but of ideas too. The WFN is not an overtly political organization and does not engage to any significant extent in polemics. The organization made great strides during each presidency and perhaps especially during that of the late Lord John Walton, MD, who made many radical contributions to much of neurology and its science. The memorial service for Dr. Walton in early November brought many messages of support for the promotion of international relations.

Many others have promoted good international relations extending over the 20th century. The International Society for the History of the Neurosciences and the International Society for the History of Medicine, whose new president is Carlos Viesca, MD, of Mexico City, bring to communication a slightly different focus than the strictly scientific study of neurology. There is no real doubt that to study the history of our subject is to increase understanding of where we have come from and more important, why, and to help us understand how to advance further. It is not only instructive in this manner but also a good academic discipline, and enjoyable in the process — the three principles of the study of

medical history. We might ask, to what extent can we learn from each other's heritage? Surely a great deal. Failed eponymists, those whose names should have been given to the first discovery or description of something, abound. An example is the description of Duchenne muscular dystrophy to which perhaps prior description should be attributed to Edward Meryon, buried in Brompton Cemetery in London. The Dax/Broca puzzle, the Bell/Magendie controversy, and the Darwin/Wallace debate are all examples of who should have prior acknowledgement; many others examples stretch across the world. Inappropriate arguments about this and that can either sour international relations or lead to harmonious resolution, a sort of dialectic where thesis is followed by antithesis and then by synthesis. We should make the most of these opportunities to debate and inform each other.

What part do physicians play in the promotion of national and international peace? A great deal is possible — the Nuremberg Code, and discussions about physicians' part in capital punishment and in war are examples. Recent strike action by physicians in the United Kingdom has been unprecedented, never before seen, and followed by the understanding that similar follow-up action would lead to more harm to patients, and, of course, to the profession, and the policy abandoned. The government also needs to learn that compromise is important and not to exploit a near-monopoly position within

a government-controlled service for ill-founded statistical reasons, despite the many advantages that such a service holds for the population, since each of us is at one time either sick, potentially sick, and always in need of proper health care.

The planned exodus of the United Kingdom from the European Union (but not from Europe since that is a geographical matter) will change many aspects of health care. On the one hand, there will be greater freedom to control the ways in which governments act. On the other hand, the controls that come from being part of a larger community (the European Union) will be relinquished. The law of unintended consequences will have free reign with lots of heart-searching afterward.

There are many facets to our need to promulgate relations between nations and the manner in which we can promote these bonds. Within medicine, we see many possibilities for shaping the health and happiness of human beings, and shifting forces should make us wary and constantly vigilant to new opportunities. Our Strengths and Weaknesses bring Opportunities and Threats — the SWOT analysis. As medics and others who take part in health care, we must make the most of our strengths and opportunities by fostering our international relations, since these are precious and could so easily be lost by inaction, as well as by inappropriate actions. •

Christopher Gardner-Thorpe, MD, is a consultant neurologist in Exeter, United Kingdom.

EPILEPSY

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- Focal seizure types flexibly described by their features, and by features that suggest anatomical localization.
- Epilepsy syndromes: This area is presented in a comprehensive list, including details on clinical presentations, EEG and imaging features (with images to illustrate these), and current understanding of syndrome etiologies.
- Epilepsy etiologies: This is presented in a comprehensive but concise section that includes most notably genetic and structural etiologies, but also content on metabolic and immune etiologies. Read concise and clinically relevant information on phenotypes seen with more than 50 genes associated with epilepsy, as well as the phenotypes seen in chromosomal abnormalities associated with epilepsy. In 2016 a significant change was made to the structural etiologies content, making available the most current knowledge

- regarding brain abnormalities associated with epilepsy, especially newer information regarding their genetic bases. The site now includes a tour de force of the following structural etiologies for epilepsy:
- Malformations of cortical development: Focal cortical dysplasia, tuberous sclerosis, lissencephaly, subcortical band heterotopia, grey matter heterotopia, polymicrogyria, hemimegalencephaly, schizencephaly, and hypothalamic hamartoma
 - Vascular malformations: Cerebral angioma, Sturge-Weber syndrome, and arteriovenous malformation
 - Hippocampal sclerosis
 - Hypoxic-ischemic: Stroke and hypoxic ischemic brain injury
 - Traumatic brain injury
 - Tumors: dysembryoplastic neuroepithelial tumors and ganglioglioma
 - Porencephalic cysts
- Epilepsydiagnosis.org complements resources available through *Epileptic Disorders*, the ILAE's official educational journal, for professionals with particular

interest in epilepsy. However, epilepsydiagnosis.org, through its open access format, also provides an increased reach to health professionals from primary and secondary health care settings who see patients with epilepsy, and is relevant for community organizations and for the general public due to the simple and clear presentation of information.

Please visit and use epilepsydiagnosis.org. Your comments and suggestions are welcome in the Give Feedback section. •

Kate Riney, MD, PhD, is chief executive officer of the Australia and New Zealand Child Neurology Society Limited, a pediatric neurologist at Lady Cilento Children's Hospital, and a senior lecturer at the University of Queensland in Brisbane.

VISITORS TO EPILEPSYDIAGNOSIS.ORG

(by professional background)

1.	Secondary Health Care — Adult Neurology	8%
2.	Secondary Health Care — Pediatrics General	7%
3.	Postgraduate Medical Trainee — Adult Medicine	6%
4.	Secondary Health Care — Pediatric Neurology	6%
5.	Tertiary Health Care — Pediatric Neurology	6%
6.	Tertiary Health Care — Adult Neurology	5%
7.	Primary Health Care — General Practice	4%
8.	Postgraduate Medical Trainee — Pediatric Medicine	4%
9.	Primary Health Care — Other	4%
10.	Tertiary Health Care — Pediatric Epileptologist	4%

VESALIUS

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variations of the blood vessels of the brain and Vesalius' precise description of structures within the eye. Vesalius' closing chapter deals with methods on how to remove and dissect the brain.

Chapter 31 contains useful chronological tables of advances in microscopy, electrophysiology neuroanatomy, and neuroimaging. A subsequent chapter tersely comments on phrenology, discovery of animal electricity, and the action potential.

The following chapters provided more information on advances made in staining brain tissue by Golgi and Cajal, emergence of the neuronal doctrine, and Cajal's declaration of proof of dynamic polarization based on Cajal's microscopic observations. Staining techniques that differentiated regions of human brain led to construction of elaborate maps by Campbell and Brodman.

Chapter 37 omits the discoveries of Richard Caton who first recorded electrical potentials recorded from cerebral cortices of moving mammals (electrocorticography) in response to light and tactile stimuli. No comments are offered regarding Hans Berger's meticulous descriptions of normal and abnormal EEG activity in awake and

sleep, after trauma, and during seizures. The authors' final chapter summarizes the emerging science of functional MRI imaging of connections between regions of brain during specific tasks.

This book has some minor but detracting errors and omissions. The authors did not mention the Papal edict that blocked human dissection for four centuries and how the Medici family's Pope ended this prohibition. This information would explain the resurgence of human cadaver dissection in the Renaissance. In the section about limbic system connections to the prefrontal cortex, these authors should have mentioned that Ignaz Moniz received the Nobel Prize for discovery of the harmful prefrontal leucotomy, but not for initiating the highly beneficial technique of cerebral angiography. In some areas, the commentary seems haphazard and sometimes omits important material.

These authors' commentary on the cerebellum omits anatomical studies of James S. Risien Russell, who discovered the uncinate fasciculus, known as the hook bundle of Russell. That chapter overlooks clinical observations of American authors Charles K. Mills and Theodore Weisenberg regarding lesions in the anterior versus posterior vermis that cause loss of tone and respectively falling forward or

backward. No mention was made of Babinski's discovery of dysdiadochokinesis in 1902 or Granger Stewart and Gordon Holmes' publication in *Brain* in 1904 on loss of check or "rebound" in patients with cerebellar hemispheric lesions. This chapter minimizes Gordon Holmes' meticulous and exhaustive observations of 40 World War I soldiers as they recovered from gunshot wounds to their cerebella. Holmes described initial hypotonia of limbs ipsilateral to destruction of the cerebellar hemisphere, later deviation of gait toward the side of the cerebellar hemisphere. The figure showing extreme hypotonia of a soldier is the sole illustration from Holmes' opus. The authors could have included Holmes' graphic recordings of disturbed movements induced by cerebellar hemispheric lesions.

The commentary would be improved by comment on the Galvani versus Volta controversy, the landmark publication of *The Functions of the Brain* by David Ferrier in 1876, based on ablation and electrical stimulation of cerebral cortex of primates and other mammals. Elaborating on discoveries of Caton and Berger, cited only in the chronological tables, would have added much.

Typographical errors mildly mar the book. In pages 40 and 41, the erroneous date

1664 appears three times instead of 1564, which is the correct year of Vesalius's trip to the Holy Land and his death. Footnote 27 contains a typographical error, "char-toid," for carotid. Nonetheless, these minor defects do not blemish a book that contains a vibrant translation of Vesalius' *Book Seven* and plethora of information in their commentary.

Despite these omissions, this is the book to own for those who are not Latin scholars but desire to read an accurate translation of the writings of Vesalius. Much of the commentary upon anatomical, clinical, and pathological discoveries made after Vesalius is germane and informative for understanding the development of neuroscience. Oxford Press substantially bound this hardcover book, printed an attractive cover, and precisely reproduced figures in the appendix from Vesalius' *Book Seven*. I can attest to the clarity of these illustrations, having viewed both original editions of the *Fabrica* on visiting the medical library at Leuven. MRI, photographs, and illustrations from neurological and neuroanatomical literature were intelligently selected and faithfully reproduced. A revised edition following some of these suggestions would be well received. •

Edward J. Fine, MD, is an associate professor of neurology at the University at Buffalo, State University of

DON GILDEN, MD

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throughout the United States who had provided biopsy samples, or were aware of his findings, reported to Don that their patients who were doing poorly with conventional corticosteroid treatment responded quickly to anti-viral agents, e.g. valacyclovir. This reinforced what he was seeing at the University Colorado, and undoubtedly will be the subject of clinical trials (if they are really needed) and future publications.

While conducting his research at Penn, Don quickly gained the reputation as a go-to neurologist for colleagues in many departments throughout Philadelphia, and ultimately the United States, for help in solving difficult neurological problems as an expert clinician and later as a neurovirologist. He was a true triple threat in every respect, an outstanding teacher, astute clinician, and extraordinary scientist.

In 1985, Don became professor and chair of the department of neurology at the University of Colorado, remaining chair until 2009. Notably, he expanded his successful research program while developing a nationally prominent department of neurology. His abilities and energy as a teacher were recognized when he received the Outstanding Teacher Award from neurology residents four times. Don was honored with many other national and international awards,

including the Alumni Award for Distinguished Service from the University of Chicago, the Pioneer Award of the International Society of Neurovirology, and the 2008 Honor Award and Gold Key for outstanding contributions to medicine and distinguished service to mankind from the University of Maryland School of Medicine. He was elected to the Association of American Physicians, to fellowship in the American Association for the Advancement of Science, and to the Johns Hopkins Society of Scholars. He held leadership positions in many professional societies during his career, and he remained active on many editorial boards, with the National Institutes of Health (NIH) and the National Multiple Sclerosis Society study sections until his death.

A measure of the friendship and loyalty that he inspired was the fact that his principal laboratory assistants who joined his laboratory in the late 1970s stayed as members of his team, from Philadelphia, to Jerusalem, to Denver, and until their retirements over the last several years.

Don continued his research even after discovering that he had an aggressive renal carcinoma, enduring a difficult 18 months of therapies, finally succumbing on Aug. 22, 2016. In his last months, he identified five genes actively expressed during the process of latency. This was consistent with his having lived his life to the fullest. As late as early August, he worked with his colleagues to ensure that his grants would continue funding the research team

and that the decades of advances he made in unraveling the nature of the varicella zoster virus would continue.

To cite some numbers: Don was an author on more 420 papers and remained the principal investigator on both an NIH Program Project Grant and an R01 until his death. He trained 26 graduate students and postdoctoral fellows, all of whom but the most recent hold important faculty positions in the United States, Canada, Japan, and Norway. He was mentor to countless medical students and residents, and consultant to his peers throughout the world. He held leadership positions in numerous professional societies and remained active on many editorial boards and NIH study sections until his death.

Don played to win at everything he did. He enjoyed skiing, becoming so accomplished that one could mistake him for a professional. He enjoyed teaching his friends and colleagues (including me) how to better navigate the slopes.

He was a serious violinist, never traveling without his instrument and practicing every day, even throughout his illness. In addition to recitals at national meetings, I enjoyed hearing him practice in hotel rooms in many countries as we attended meetings and in his home in Denver. When possible, Don added attendance each year to a national or international violin competition, including the International Violin Competition of Indianapolis, to his neurology and virology meetings schedules.

Don had a warm and engaging personality that endeared him to many of us. He and his wife maintained enduring friendships and were extremely hospitable to those of us who showed up in Denver from time to time.

However, where Don really devoted his energies and love was with his family, Audrey, their sons Daniel, Adam, and Paul, and their families. He and Audrey have been fully involved in their lives, leading to incredibly close ties among all of them. Although theirs is the greatest loss, Don's passing leaves a tremendous void in neurology and virology, and he will be sorely missed by his many students, trainees, friends, and colleagues. May he rest in peace. •

Don Silberberg, MD, is an emeritus professor and chair of the department of neurology at the University of Pennsylvania, Philadelphia.

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BOOK REVIEW

Mentored by a Madman: The William Burroughs Experiment

BY YURI TAKEUCHI, MD

A mentor is a preceptor who imparts wisdom and shares knowledge with less experienced colleagues. During medical training, it is customary to have a teacher who guides the future physician in approaching patients with the right clinical tools, bedside manner, and generosity that characterizes a good physician.



Yuri Takeuchi, MD

In the first chapters of his autobiographical book, *Mentored by a Madman: The William Burroughs Experiment*, Professor Andrew J. Lees, MD, a neurologist known worldwide for his contributions to the understanding and treatment of Parkinson's disease and other movement disorders, describes his early beginnings as a brilliant medical student at London's Hospital Medical College in Whitechapel. The memories of those first years in medical school will be shared by all of those who have had the illusion of becoming a physician. Regardless of the person who serves as role model for young medical students, it was evident to young Lees that the doctor-patient relationship is always unbalanced, given that the God-like physician always knows what is best for the "unschooled" patient.

As a sixth-grade child, the future Dr. Lees was introduced to the work

of Richard Spruce, an American biologist who may be considered the father of modern ethnobotany. They shared a "passion for grasses and trees" and Spruce's descriptions "left me with an indelible impression of the convulsive beauty of the forest ... he also hinted in this logbooks that the plants of the rainforest held most of the secrets to understanding and manipulating the chemical systems of the human brain."

Dr. Lees tells us about Spruce's narrative of his experience during the "Feast of Gifts" of the native tribes, a ceremonial event that included the ritual drinking of the "caapi" brew. Spruce collected some fresh specimens of the liana *Banisteriopsis caapi*, the source of yagé, that were sent to the Royal Botanical Gardens at Kew for classification and analysis in 1853.

In 1952, William Burroughs read about yagé, also known as ayahuasca, "the vine of the soul," used by the natives for its prophetic and clairvoyance properties. In 1953, in Bogotá, Colombia, Burroughs met the charismatic Dr. Richard Schultes. Schultes introduced Burroughs to the yagé ceremonies. Dr. Lees describes that Burroughs "had glimpsed a supernatural state of being that provided him with a gateway into a proximate closed-off past." He began a series of scientific investigations and published in the *British Journal of Addiction* a paper informing that the mixture of *Banisteriopsis caapi* with the leaves of *Psychotria viridis* or chacrona is responsible for the psychedelic effect of yagé.

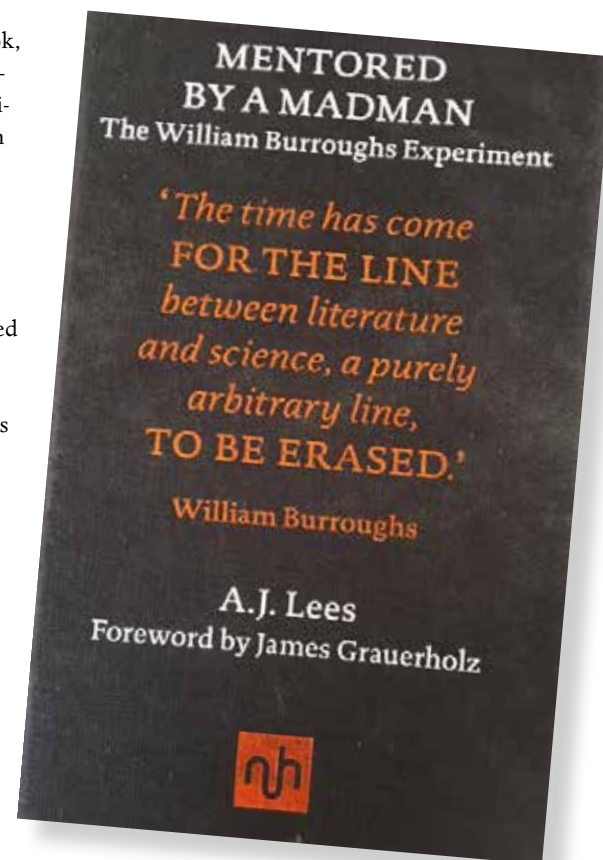
As a confession in the book, Dr. Lees tells us of his experiences with L-Dopa and selegiline, two medications used in the treatment of Parkinson's disease and, at his mid-60s, his journey to the Colombian Amazon forest to meet the native Indians and to experience the visions induced by the yagé ceremonies. The vivid descriptions of those self-experimental experiences by "a man of many quests," as described by Raymond Tallis in the recent review of the book in *Brain*, are the most personal and intimate part of this autobiographical book.

Ethnopharmacology's aim, as described by its international society, is the discovery of a wealth of useful therapeutic agents in the plant and animal kingdoms; the empirical knowledge of these medicinal substances, and of their toxic potential passed on by oral tradition, sometimes recorded. Many valuable drugs (e.g., morphine, taxols, physostigmine, quinidine, emetine) were found as prototypes in the attempts to develop more effective and less toxic medicines.

Dr. Lees' message is to open our minds and show respect for nontraditional medicines and, with a strong scientific basis, to listen to our patients because

those who suffer the terrible burden of neurological diseases have a sixth sense. We, as understanding physicians, should pay more attention to the voice of rainforest medicine. Perhaps, if we drink "the vine of the soul," we might find promising alternative medicines to relieve the suffering of our fellow human beings. •

Yuri Takeuchi, MD, is past president of the Congress of Colombian Association of Neurology.



DAY OF THE BRAIN

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with age and in aged persons. In particular, in 75- and 80-year-old individuals, more risk for cognitive changes can be expected. The aim and strategy must be to identify the factors that positively enhance cognitive reserve. Increasingly, activity training of cognitive abilities and maintenance of social networks have been identified as positive factors.

Age is often identified as a burden (e.g., related to the burden of disease) and a contributor to increasing health care costs. This is, however, a naturally occurring phase in the life cycle with increasing needs. It is the duty of neurologists to act as advocates for our patients, to see the importance of these neurological needs for our patients, and to avoid classifying age as a burden.

Another important task in neurology is palliative care. Several neurological diseases need palliative settings of different types and time courses. For example, palliative care can be a long-term project in patients with degenerative diseases or a shorter time course in amyotrophic lateral sclerosis and brain tumors. Palliative care is not the same as end-of-life care, and it is important to include these concepts into neurology worldwide.

Worldwide, the WFN is engaged in intensive cooperation with the World Health Organization, including with ICD 11, noncommunicable diseases, and the present state of the Zika infection, where the WFN has created an international expert group.

The Austrian society had a strong echo in the media after the press conference, including several follow-up radio interviews. •

WFN 2017 Elections: Submit Your Candidate Recommendations

On Sept. 17, 2017, at the Annual General Meeting of the World Federation of Neurology Council of Delegates during the World Congress of Neurology in Kyoto, Japan, elections will be held for the following posts:

- President to take up office from Jan. 1, 2018 (position vacated by Raad Shakir, MD, not eligible for re-election)
- First vice president to take up office from Jan. 1, 2018 (position vacated by William M. Carroll, MD, not eligible for re-election as first vice president)
- One elected trustee to take up office from Sept. 18, 2017 (position vacated by Riadh Gouider, MD, eligible for re-election)

Candidate names may be submitted together with written confirmation of their willingness to stand for election, a brief curriculum vitae (a single

type-written page), and written support from their national society. This should reach the London secretariat office by Jan. 31, 2017.

The Nominating Committee will draw up an official list six months before the date of the election and will scrutinize all submissions received. Candidates for the positions of president and first vice president also will be required to provide a statement of their goals and objectives for the organization if elected, which will be published in *World Neurology*. They also will be required to present a short statement at the Council of Delegates on the day of the election.

Please note that following the closing date, additional nominations can be submitted by five or more national delegates acting jointly up to 30 days before the Council of Delegates meeting (Aug. 18, 2017). •

DELEGATES

continued from page 1

The Kenes Group will be the professional conference organizer for three more congresses. The secretary general also gave the reports from the Public Awareness Committee and the Applied Research Group Committee. The 2016 World Brain Day topic was “The Aging Brain.” The Day of the Brain will be continued in 2017, and the topic will be “Stroke.”

The WFN publications have a wide-ranging presence, from the website and social media, to *World Neurology* and the *Journal of the Neurologic Sciences*, to a new electronic journal, *eNS*.

The next neuromuscular congress — the International Congress on Neuromuscular Diseases (ICNMD 2018) — will be held in 2018 in Vienna.

Keith Newton, who served the WFN as executive director for 17 years, has retired, and his engagement and significant contributions to the WFN were acknowledged.

Richard Stark, MD, treasurer, presented the financial situation. Subsequent to the Congress in Chile, the financial situation has remained stable. Negative trends are the reduction of interest due to the economic situation in investments. The WFN will have to maintain the policy of lean management and careful budgeting, in particular, since in the years between congresses current costs exceed the income. The auditor's report was approved, and the auditor was selected for the next financial period.

The Membership Committee received three applications, from Nepal, Togo, and Mauritania. Formally, Mauritania fulfilled all conditions and details and was accepted as a new WFN member. The other two countries were encouraged to resubmit their applications in Kyoto. For Guatemala,

there are issues with regard to the presence of two societies accredited in 2001 by the WFN. The 2001 decision by the Council of Delegates to accept two Guatemalan associations has been reversed and approved by the South American delegates.

Education Committee Chair Dr. Lewis provided the report of the WFN educational activities, including the awarding of 30 Junior Travelling Fellowships in 2016. In addition, attendees were provided with an update on the the WFN department visit program for four-to-six-week visits, which now includes Austria, Canada, Germany, Norway, and Turkey. The status of the WFN Teaching Center program (for fellowship or full neurologic training) also was discussed. The program now includes two African centers, Rabat (a French-speaking site), Cairo (English-speaking), the newest center in Dakar (French-speaking), and the newest center in Mexico for Central and South America (Spanish speaking). The status and current usage of the *Continuum* program, an important joint educational initiative of the American Academy of Neurology and the WFN, also was discussed. Dr. Lewis and Walter Struhal, MD, editors of *World Neurology*, also reminded attendees of a call for articles on training in neurology around the world for publication in *World Neurology*.

Morris Freedman, MD, presented on distance learning, and he shared details about the Canadian-African interactive video conference as an example of future international medical video conferences that could possibly be supported by the Canadian government and include WFN involvement.

Dr. Struhal gave the report for the Publications and Communications Committee. He introduced the new and impressive WFN website and reported on the successful expansion on social media, including acknowledging the efforts of the social media group members.



The WFN Council of Delegates cast ballots, electing Steven L. Lewis, MD, as WFN trustee.

Regional issues were presented by representatives from these regions:

- AFAN: WFN Trustee Riadh Gouider, MD, presented on African initiatives by the AFAN, which was founded in 2015. The first meeting together with the Pan-Arab Union will take place in March 2017.
- Asian and Oceanian Congress of Neurology (AOCN): The Asian Initiative was reported by Ryuji Kaji, MD, PhD, who presented on Asian initiatives, including the AOCN's August 2016 meeting in Kuala Lumpur, which was organized by the Kenes Group. In 2016, at the Japanese Society of Neurology meeting in Kobe, there were several thousand attendees. This meeting also was attended by several WFN officers. Dr. Kaji also reported on positive developments with regard to planning of the WCN in Kyoto. Dr. Kaji also presented new features of Japanese research, including rehabilitation and treatment with stem cells in spinal cord injury.

- Pan-American Federation of Neurological Societies (PAFNS): Marco Medina, MD, presented the update from PAFNS, whose constitution and bylaws were signed during the 2015 Congress in Chile. The organization is supported by the ILAE, the World Sleep Society, and the Iberoamerican Cerebrovascular Diseases Society, and its first official meeting was scheduled to be held Oct. 30-Nov. 3, 2016, in Cancun, Mexico.

The announcement of the result of the trustee election was presented. There were 26 votes, and, according to tradition, the number of votes for each candidate were not announced. The result was that Dr. Lewis of the United States became the newly elected trustee of the WFN.

Finally, the attendees were reminded to save the dates of Sept. 16-21 for WCN 2017 in Kyoto. •

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(EFNS) fully participated in the WCN as a partner and canceled its own Congress for that year. This resulted in consolidating the attendance for the WCN. The Austrian society worked closely with the EFNS to make the Congress a huge success. The birth of the European Academy of Neurology (EAN) followed with the merger of EFNS and the European Neurological Society. This merger started with the 2015 joint meeting in Istanbul, and the first EAN Congress was held in 2016 in Copenhagen.

Moving on to Latin America, the Santiago WCN was held in 2015. This was the second Congress in the continent following Buenos Aires in 1993, and the Chilean colleagues performed marvelously. The Congress was a success scientifically, socially, and financially. The regional association was in the process of being formed. Although neurological

congresses had been held since the 1960s, they followed the same pattern as elsewhere in the world. A host country holds the Congress with the full responsibility of organization and outcome; there was no set structure and the region, although participating, did not reap the rewards of the Congress. There had been an intense discussion between Latin American neurologists over the previous four years, which culminated in a pivotal meeting during the Marrakesh Congress and proceeded to further meetings under the auspices of the WFN. These deliberations were financially supported fully by the WFN and culminated in the formation of the Pan American Federation of Neurological Societies (PAFNS). The constitution and bylaws were written, and the final step was in Santiago, when it was decided to host the PAFNS administrative office in Chile. The Chilean society agreed to offer office facilities, and the constitution and bylaws were translated into Spanish. The PAFNS is now registered as a nonprofit

foundation in Chile. This will allow future developments and financial stability to disseminate neurological training in Latin America.

Again like Africa, the Santiago Congress provided financial provision for PAFNS. The WFN and Sonopsyn (Chilean Society) have given up some of their profits to facilitate the establishment of the PAFNS. This was supplemented by a grant from the American Academy of Neurology, and the three organizations are involved in providing seeding for the nascent PAFNS. It has been most heartening to see that the Mexican Academy of Neurology stepped up to host the first PAFNS Congress in October 2016 in Cancun.

All of this only demonstrates the close relationship and tight collaboration of the six WFN regional organizations in doing all they can to consolidate their status and support each other, which is the essence of regional empowerment as one of the pillars of the WFN strategy for improving neurology worldwide. •

MARK YOUR CALENDAR

5th Annual Miami Neuro Symposium
Dec. 1-3, 2016

Coral Gables, Florida
cme.baptisthealth.net/miamineuro/pages/index.aspx

Third Kuwait North American Neurology Conference

Dec. 9-11, 2016
Kuwait City, Kuwait
kuwaitneurology.com

European Federation of Autonomic Societies 2017 School and Meeting
Feb. 16-17, 2017

Innsbruck, Austria
efasweb.com/web/index.php/upcoming-events/efas-2017-programme

INTROPICON-17: International Tropical Neurology Conference 2017
March 24-26, 2017

Mumbai, India
iancon.net/Tropical_Neurology_Conference_2017

www.iancon.net



INDIAN ACADEMY OF
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International Tropical Neurology Conference, 2017

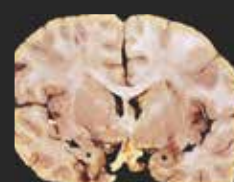
Organized by:
**Indian Academy of Neurology -
Tropical Neurology Subsection**

Under Aegis of:
World Federation of Neurology

Dates: 24th - 26th March, 2017

Venue: Grand Hyatt, Mumbai

Email: intropicon2017@gmail.com



Address For Correspondence:

Dr. Chandrashekhar Meshram

Organizing Secretary

Brain and Mind Institute, B - 101, Neeti Gaurav Complex,
Ramdaspath Nagpur, India - 440 010

Email: drmeshram@hotmail.com

Cell +919822722132 | Fax +917122451626

Conference Secretariat:

C/o Vama Events Pvt. Ltd.,

Office No. 4, Gr. Floor, Anmol C.H.S.,

Sakharam Keer Road, Parallel to L. J. Road,
Shivaji Park, Mumbai - 400 016

Tel.: + 91 22 2438 3498 Telefax: + 91 22 2438 3499

Email: vamahospitality@hotmail.com

