A New Organization for an Old Disorder

BY JON STONE, ALAN CARSON, AND MARK HALLETT

Functional symptoms and disorders should be familiar to any practicing neurologist. The patient has a genuine and disabling symptom, such as limb weakness, tremor, blackouts, or dizziness, but the clinical history and examination shows positive evidence that the symptom is a disorder of function, not structure.

Typically, findings of internal inconsistency, such as Hoover’s sign of functional leg weakness or typical findings of a functional (non-epileptic) seizure, should point the way and allow a positive diagnosis to be made. These are not diagnoses of exclusion, should not be made on the presence or absence of psychological factors, and can be diagnosed alongside neurological diseases that may commonly accompany them.

Studies in many parts of the world have shown that functional disorders are one of the most common reasons for neurological consultation. Despite this, the topic has often been invisible in curricula and training programs for neurologists. Patients commonly remain
THE PLENARIES AT THE WORLD CONGRESS OF NEUROLOGY IN DUBAI.

The battle to beat Parkinson’s Disease
Patrik Brundin. See text of President’s report.

Precision Medicine in Neurology: Contributions by the Autozygome
Fowzan Al Kuraya described how populations enriched for autozygosity can contribute through unmasking the recessiveness of informative deleterious alleles.

Reading in the Brain: Mapping the Massive Impact of Literacy
Stanislas Dehaene elaborated on the investigation of several cognitive functional systems in the human brain but concentrated on the effect of the inferior right temporal lobe visual word form area and its relation to reading and to dyslexia.

Into the Grey Zone: Detecting Covert Conscious Awareness in Behaviourally Non-Responsive Individuals
Adrian Owen described research using fMRI, EEG, and functional near infra-red spectroscopy to detect covert conscious awareness in patients in vegetative or “comatose” states and then communicate with some of these through visual imagery thoughts.

Light, Circadian Rhythms and Sleep: Mechanisms to New Therapeutics on the Underlying Mechanisms
Russell Foster. See text of President’s report.

Treatting Huntington’s Disease
Sarah Tabrizi described promising disease modifying therapy approaches that target proximal pathogenetic mechanisms ranging from DNA-targeting Zn-finger proteins, transcription activator-like effector nucleases and CRISPR/Cas9, to post-transcriptional huntingtin lowering methods by RNA interference, antiseis oligonucleotides and small molecule splicing modulators together with a range of developments in biomarkers and drug delivery techniques.

Imaging Pain
Irene Tracey explained the recent advances in the understanding of chronic pain in the individual by investigating the perceptual and non-perceptual changes in pain perceptual pathways induced by sensitization, amplification or attenuation through functional and structural plasticity. Importantly, chronic pain is now such a burden it is recognized as a disease in its own right in ICD-11.

What is Genomics Teaching Us About Neurodegeneration
John Hardy explained that the gene loci involved in late onset neurodegenerative disease are associated with damage response processes and the observed pathology marks the type of failed damage response.

Multiple Sclerosis
Mar Tintore outlined the advances in understanding MS, its earlier diagnosis, more effective treatments and the influence of lifestyle and co-morbidities all leading to reduced disability.

Brain Machine Interfaces: From Basic Sciences to Neurorehabilitation
Miguel Nicolelis described groundbreaking research leading to primate brains directly interacting with mechanical, computational and virtual devices without interference of body musculature or sensory organs. Such observations are pointing to the concept that the properties of neurally-controlled robotic limbs or tools can be assimilated by brain representations as if they were extensions of the subject’s body.

The Promise of the Brain Initiative for Those With Neuro/Mental/Substance Abuse Disorders
Walter Koroschetz. The changing emphasis of informed interventions based on previously invisible dynamic features of brain circuitry as opposed to the older static disease and treatment paradigms based on anatomy and pathology was highlighted in this visionary account of the impact of evolving technologies through the US Brain Research through Advancing Neurotechnologies and similarly aligned initiatives from around the world.

PRESS RELEASES DURING AND FOLLOWING THE XXIV WORLD CONGRESS OF NEUROLOGY IN DUBAI

Oct. 28, 2019
Esteemed Panel of World’s Leading Stroke Experts from the World Stroke Organization Share Breakthrough Research on Relationship Between Stroke Risk and Vascular Dementia
During Press Conference Broadcast via Facebook Live from XXIV World Congress of Neurology, Dubai, UAE Potential audience 92.6 million

Oct. 28, 2019
New Research on Migraine in the Workplace Unveiled During Press Conference to be Broadcast via Facebook Live from the World Congress Neurology, Dubai, Oct, 8 a.m. GST Potential audience 80.58 million

Oct. 29, 2019
Effect of Climate Change on the Brain, Link to Alzheimer’s and Parkinson’s, to Be Key Focus of During Press Conference XXIV World Congress of Neurology. Potential audience 117.7 million

Oct. 24, 2019
World Federation of Neurology Reveals New Frontiers in Epilepsy Treatment for Children, Pregnant Women and New Links Between ADHD and Epilepsy at 24th Annual World Congress of Neurology, Dubai. Potential audience 75.5 million

Oct. 23, 2019
World Federation of Neurology Joins Forces with the World Health Organization, Announcing “Groundbreaking” Reclassification of Stroke as a Disorder of the Brain; Launches Nine-Country Survey, Leading to Roadmap for Improved Neurological Care. Potential audience 86.02 million

Post Congress releases during the week that commenced Nov. 11, 2019
The Prognosis for MS is Changing Due to Advancements in Treatment and Awareness, Yet Access to Care is Top of Mind for Global Neurologists

Pregnancy No Longer Believed to Increase Risk of Stroke as a Disorder of the Brain; Link to Alzheimer’s and Parkinson’s Disease

Women and New Links Between ADHD and Epilepsy at 24th Annual World Congress of Neurology, Dubai. Potential audience 75.5 million

New Biomarkers Identified in Parkinson’s Disease Could Change Entire Trajectory of Parkinson’s Diagnosis and Treatment

Social media during the XXIV World Congress of Neurology in Dubai
Website: Over 311K page views from 75K people of whom 78% were new users. The top 5 countries were India, the USA, the UAE, Japan and Indonesia who went to pages on Registration Abstracts and Scientific program.

Targeted Google campaigns generated more than 17K clicks and almost 2.3M views, while social media campaigns generated over 10K clicks and 900K views.

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the current role of the World Federation of Neurology (WFN).

A total of 4,000 participants attended from a record number of 129 participating countries, 800 of whom were from the Middle East and North Africa. As expected, the majority of the 800, numbering some 580, were from the United Arab Emirates (UAE), Saudi Arabia, and Egypt. Despite the volatility in the region, countries such as Iran, Iraq, Lebanon, Syria, Kuwait, and Jordan had between 15 and 70 delegates each, a testament to their determination to attend and the generally helpful assistance in visa procurement from the Dubai Department of Tourism.

Overall, India had the largest number of attendees at about 400 followed by the UAE, Indonesia, the U.S., Saudi Arabia, the Philippines, China, South Korea, Egypt, and Japan with 100 making up the top 10 countries by numerical attendance. Of the total attendees who specified their professional role, 80% were clinicians or clinician researchers. Ten percent were students or basic science researchers. Of the 64% who specified an age bracket, the age range was spread fairly evenly between those younger than 15 years old, the 35-44 year olds, the 45-54 year olds and the 55-64 year olds. Those aged younger than 45 years comprised 44% while those older than 45 years made up 35.5%. Altogether, these broad demographic details fit the WFN target population, although a higher percentage of younger attendees would have been more satisfying.

Nevertheless, a record number of bursaries and travel grants, 200 in all, were offered to and accepted by young neurologists from low and low-middle income countries.

Like meetings of any size, the program content and quality of the presenters is paramount to success. From the first plenary session, it was evident this was going to be the case with this World Congress. Prof. Patrik Brundeven’s lecture on “The Battle to Beat Parkinson’s Disease” was outstanding for its clarity and message and will mark a new perspective on the future understanding and hope for disease course modification. Prof. Russell Foster’s lecture “Light, Circadian Rhythms, and Sleep: Mechanisms to New Therapeutics” was another masterful exposition of how a complex topic can be discussed with crystal-clear clarity. He described the identification of a third photoreceptor system based on photoreceptor retinal ganglion cells (pRGCs) using blue light sensitive melanopsin and how these pRGCs control the gene expression of the molecular pathway’s primary circadian pacemakers within the supraretic nucleus and then the sleep wake cycle.

Together with the other plenary lectures delivered each morning of the congress, these provided a veritable banquet of highly informative and interesting topics characteristically beyond the usual fare clinicians are exposed to.

(See Figure 1.) They will undoubtedly stimulate young and older attendees to explore neuroscience and “edge” neurology with increased or renewed zeal.

It is this blend of cutting-edge material presented alongside new research and clinical practice experience from the regular main topics and the teaching sessions.

POTENTIAL AUDIENCE: 117.7 million

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Serger V. Lobzin, V. Golobin, and N. Toinzeling

The XXI annual Davidenkov Readings Neurological Congress took place on the Sept. 26-27 in St. Petersburg, Russian Federation. The meeting is named in honor of the prominent Russian neurologist Prof. Sergei Davidenkov (1880-1961), who made substantial contributions to the development of neurogenetics and neuromuscular diseases. He described a new clinical form of myopathy, scapuloperoneal amyotrophy, and founded one of largest scientific neurological schools in Russia.

The congress was organized by S.N. Davidenkov, chair of neurology of I.I.Mechnikov North-Western State Medical University. The chair of neurology was founded in 1893 as the first Imperial Clinical Institution of the Grand Duchess Elena Pavlovna, which has continued since it remains as one of the leaders of neurology education in the Russian Federation.

Thousands of neurologists from different cities and countries from across the world gain more experience in neurology at the university annually. Close scientific and educational relationships connect our institution with the department of neurology at the University of Bergen (Norway) as a result of great efforts and perseverance of many, especially Prof. Nils Erik Gilhus, Prof. Ole-Bjorn Tysness, Prof. Tiina Rekand, and Prof. Lars Thomassen, among others.

These relationships allowed the establishment of a most creative exchange with university teachers and students as well as PhD postgraduate students.

Cooperative studies of myasthenia, spinal cord injuries, and other disorders of the nervous system were initiated as well as annual seminars about “Neurology in Northern Europe,” which bring opinion leaders from Norway and the Russian Federation.

Prof. Vladimir Semenovich Lobzin

This year’s Davidenkov Readings Congress was devoted to a celebration of the 95th anniversary of honored scientist of Russia, Prof. Vladimir Semenovich Lobzin, who held our chair from 1982 until 1992.

Prof. Lobzin was the disciple of the legendary Prof. Alexander G. Panov, who in 1915 primarily described tick-borne encephalitis in Vladivostok. Prof Lobzin left a huge scientific legacy: 506 scientific publications, 28 books, mostly on challenging questions of clinical neurology, and 22 investigations. In 1957, he described a clinical test in myasthenia gravis (phenomenon of muscular fatigue generalization, oculopalpebral symptom). Prof. Lobzin published the first Russian monograph on myasthenia in 1960, and he managed to organize the All Union Center for myasthenia investigation in 1971, which provided medical care for many patients with severe disease from different parts of the then Soviet Union.

His eponymic reference contains seven symptoms and syndromes described by Prof. Lobzin. Among them were the “three twins syndrome” in migraine (arterial hypotonia, hemicrania, and cholecystopathy, 1977), later completed by his son Prof. S. Lobzin with the “fourth twin” (craniovertebral dysplasia type 2).

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stigmatized and poorly treated.

It was not always so. Neurologists in the 19th century, such as Charcot, Gowers, and Oppenheim, recognized that hysteria as it was known then, was a fascinating, common, and potentially treatable part of their general neurology practice. (See Figure 1.) They devoted long sections to it in their textbooks, took a multidisciplinary view of its causes and treatment, and offered practical advice to all neurologists in how to manage it. With the rise of psychoanalytic theory and the clinico-pathological method, neurologists in the 20th century largely lost interest in the condition, although they never stopped seeing the patients.

Over the last 10 to 15 years, increasingly high quality research on clinical phenotyping and diagnosis, aetiology, mechanism, and treatment has resulted in more awareness, interest, and evidence. Developments in functional imaging have enabled us to study the “dynamic lesion” of FND that Charcot predicted in 1889.

The new Functional Neurological Disorder Society (FNDS) launched in 2019 and affiliated with the WFNS represents another important step in neurology and medicine’s relationship with these disorders.

An international meeting held in Edinburgh in 2017, generously sponsored by the Movement Disorders Society, the National Institutes for Health, American Epilepsy Society, and others, attracted 550 delegates and highlighted how FND specific services, often originating in neurological centers, have been growing over time. The focus of our organization is providing a forum for health professionals to exchange ideas, and advance research and education for the benefit of patients with FND.

Applications are open to join the new FNDS as a founding member for a limited period until June 2020. We have organized another international meeting in Boston June 14-16, 2020, after which ordinary membership applications will be received. You are invited to join a multidisciplinary audience from neurology, psychiatry, psychology, allied health, nursing, and others.

Jon Stone and Alan Carson are from the Centre for Clinical Brain Sciences, University of Edinburgh, in the United Kingdom. Mark Hallet is from the Human Motor Control Section of the National Institutes of Health in Bethesda, Maryland. The three also serve as leadership of FNDS: Hallet is president, Carson is treasurer, and Stone is secretary. For more information, contact Jon.Stone@ed.ac.uk.

References

The Nonaka Lecture at the 2019 Oxford Muscle Symposium

BY MARTIN KRENN AND WOLFGANG GROSZ

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he Oxford muscle symposium is an annual meeting of muscle specialists under the leadership of David I Hutton Jones and Monika Hofer. This year’s meeting took place July 12-13 in Worcester College, Oxford, United Kingdom.

It is a unique meeting, based on lectures and case presentations in muscle disease (myology). It has a rich history, dating back 44 years. Over the years, the meeting has witnessed the change of techniques from histology and morphology toward molecular medicine and genetics. The cases presented are well researched and a highly qualified audience discusses the cases.

One special aspect is the Meryon lecture, which is organized to commemorate Edward Meryon, by the Meryon Society. Meryon was a contemporary of Duchenne, and the naming of the disease is still controversial for the Meryon society.

This year’s lecture was held by Prof. Ikuya Nonaka from Japan. It is a rare occasion to be privileged to listen to a researcher who has given the name to a rare disease. Prof. Nonaka, from the National Center of Neurology and Psychiatry in Tokyo, Japan, gave his special lecture, titled “Special Aspects of Neuromuscular Diseases in Japan.”

In his lecture, Prof. Nonaka described neuromuscular diseases in Japan. He highlighted the many outstanding delegates who attended the WCN were highly attended and highly successful for what promises to be another remarkable international neurologic event.

In concluding, it was wonderful seeing so many neurologists from around the globe (and of all stages of training and career) in Dubai, and we want everyone to start “saving the date” for the next WCN that will be held in Rome in early October 2021. Planning is already underway for what promises to be another highly attended and highly successful international meeting of the minds for all neurologists from across the globe.
Early Ideas on the Localization of Vital Functions
From Cerebellum to Medulla Oblongata

By Peter J. Jodeleki

Nowadays, physicians know that spontaneous or (rarely) traumatic cerebellar hemorrhage may be lethal by causing hydrocephalus or brainstem compression. In the past, these observations were interpreted in a way that the cerebellum was considered an organ of vital importance. It lasted several centuries before researchers were able to distinguish cerebellar injury from pathology of the medulla oblongata.

Influence of Willis
In a chapter in Thomas Willis’ (1621-1675) name is associated with the arterial circle at the base of the brain: famous Cerebri Anatome (1664) titled “De spirituum cerebri (1668-1717) working in Montpellier), Johannes Bohn (1648-1732) working in Leipzig) and Jacques-François Leclercq (1698-1738) stabbed a needle in the cerebellar ventricle. Willis was the first to localize vital and involuntary functions (patho)physiology of the period, he considered indirect proofs of Willis’s speculations.

Experimental Cerebellar Lesions Considered Lethal
Several 17th century experimenters reported the fatal effect of removal of the cerebellum, including the Paris physician (and architect) Claude Perrault (1613-1688), Raymond Vierusens (1641-1717, working in Montpellier), Johannes Bohn (1640-1718, who worked in Leipzig) and German physician Johann Gottfried von Berenberg (1659-1736).

Charles Drelincourt (1633-1697), a French physician who moved to Leyden, where he preceded Herman Boerhaave (1664-1730) stabbed a needle in the fourth ventricle, which immediately led to “epileptic cramps.” Nowadays, we would recognize the vital role of the medulla oblongata.

Abraham Kaau Boerhaave’s Impetus Faciens dictum Hippocrati.

Experimental Cerebellar Lesions Not Lethal
During the subsequent century, several other experimenters observed that animals not always died upon removal of the cerebellum. It seemed that it depended rather on the caution with which the surgery was done. Some experimenters even pointed to the importance of the medulla oblongata.

François Pourfour du Petit (1664-1741) a pioneer in ophthalmology who also described dysfunction of the contralateral hemisphere in injured soldiers, looking for the possible sensory function of the cerebellum, which he could not confirm, observed survival for several days. The Italian anatomist and physician Antonio Valsalva (1666-1723), professor of Giovanni Battista Morgagni (1682-1771), who described several of his teacher’s cases in his famous De Sedibus et Causis Morborum (1761), removed the cerebellum of pigeons, observing that they did not immediately die. Morgagni observed that isolated injury of the cerebellum was not immediately lethal and confirmed this by pathologic-anatomical examination.

Abraham Kaau Boerhaave (1715-1758), one of Herman Boerhaave’s nephews, who moved to St. Petersburg where he became medical superintendent at the navy-hospital, disliked speculation, and after several experiments damaging the brain, the cerebellum “(stylo vel cultro uno momento fuisse actum de cordis de cerebellum, de cerebellum) was driven into the cerebellar ventricle between the occiput and first vertebra, the dog demonstrated three or four general shocks, but soon expired. He believed to have confirmed Willis’s ideas herewith, not aware that he probably injured the medulla oblongata. However, even in this period, some observers presented results that contrasted with those mentioned before.

French physician and anatomist Joseph-Guichard Du Verney (1648-1730) who did important work on the organ of hearing in his Traité de l’organe de l’ouïe of 1716, anticipating the work of Hermann von Helmholtz (1821-1894) for instance, was able to keep animals alive for some time after removal of the cerebral hemispheres and the cerebellum, and Pierre Chirac (1650-1732), who became personal physician of Louis XV, was able to produce survival for a while following removal of the cerebellum combined with artificial respiration (inflation of air). “Mr. Chirac, by several experiments, has made upon dogs, has clearly proved an animal may live some time wanting the brain and even sometimes de cerebellum.”

From Drelincourt’s Experientia anatomica (1684).
French physician Anne-Charles Lorry (1726-1783), one of the founders of the Société Royale de Médecine, and the German physician Justus Arhennius (1763-1806) warned against the technical deficits in many of the previous experiments on the cerebellum, resulting in massive bleeding in the subcortical space and tried to avoid this.

Lorry, in a memoir on “Les mouvements du cerveau” [the movements of the brain] presented at the French Académie des Sciences (1766) and experienced that young cats and pigeons were better suited to avoid these complications.

With our present knowledge, the mechanism of the following experiment can be easily comprehended:

Je pressois un jour latéralement & assez fort le cervelet d’un chien gros & adulte, le hasard me fit voir tout d’un coup ce chien tomber & vomir très-fort & très-naturellement: dans mon étonnement, je lui lâchai ce viscère, il fut rivellé au même instant & fit des efforts pour crier. Je repris le cervelet de la même manière, il se tendit: je recommandai cette expérience plusieurs fois, jusqu’à ce que tout d’un coup une compression encore plus forte lui eût excité des convulsions. [One day I compressed the cerebellum of a large and adult dog from the lateral side and sufficiently strong, by chance I saw the dog falling and snoring very hard and very suddenly: in my astonishment, I released that organ, he awoke at the same instant and made efforts to scream. I repeated the cerebellum of a large and adult dog from the lateral side and sufficiently strong, by chance I saw the dog falling and snoring very hard and very suddenly: in my astonishment, I released that organ, he awoke at the same instant and made efforts to scream.]

Disorders of the cerebellum, he thought, do not lead to “certain and speedy death. For certain experiments, even of our own making, show that it has borne wounds and scirrhi, without taking away life; . . . not very rarely, wounds of the cerebellum cure” (Haller, 1786, p.217). He criticized previous physicians stating that “the source of the great error in physic has been owing to physicians — making few or no experiments, and substituting analogy instead of them” (Haller, 1775, p.658).

**Ethical Issues**

Reading about these experiments and vivisection, one wonders about ethical issues at the time. Haller wrote in the introduction that he examined 190 animals since 1751, “a species of cruelty for which I felt such a reluctance, as could only be overcome by the desire of contributing to the benefit of mankind.” (Haller, 1775, p.617). Throughout the 19th century, the man-animal relationship, particularly with respect to cats and dogs, gradually became more emotional.

One of the possible explanations that have been presented is that pet keeping became more common in early industrialized and urbanized countries. More information on the history of vivisection and ethical issues can be found in the work of medical historian Andreas Holger Marble and his pivotal article “The Ethical Discourse on Animal Experimentation, 1650-1900” (Maehle, 1993).

**Literature**

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The Future of Neurology in India
A report of the 27th Annual Conference of Indian Academy of Neurology

BY GAGANDEEP SINGH, SATISH KHADILKAR, AND SITA JAYALAKSHMI

The 27th Annual Conference of the Indian Academy of Neurology took place Oct. 3-6 in Hyderabad, India. The event, the most exalted professional event for the over 2,000 strong neurologists’ community in India, lasted for four days.

India is a country with 1.4 billion people. This huge number is served by 2,500 neurologists, amounting to one neurologist for one million people. On the top of it all, the country is going through an unprecedented epidemiological transition commensurate with the recent strides made in the socio-economic sphere.

While neuro-infections and other neurological disorders associated with poverty and underdevelopment are only somewhat declining, there is a sweeping epidemic of non-communicable neurological disorders to confront. Subspecialty neurological practice is now in place in a few selected centers, but basic neurological care needs to be implemented in vast parts of the country. Clearly, neurologists in India have a formidable job at hand.

The annual conference of Indian neurologists was kicked off by Venkiah Naidu, the vice president of India, in the presence of Prof. Vinod Paul, chair of the Board of Governors, Medical Council of India and Member, National Institute for Transforming India, Prof. William Carroll, WFN president, and Prof. Wolfgang Grisold, WFN secretary general. Both the vice president and Prof. Paul emphasized the need and strategy for increasing the neurology workforce in India.

“No doubt, the number of training positions has increased from 30 in 1990 by nearly 15-fold – we now have over 450 training positions – but still we need more” said Prof. Paul. And besides, though the number of training posts have increased and there are many more neurologists than there were some 30 years ago, most of the neurologists are concentrated in a few metropolitan and larger cities of India. “We should really be having these neurologists, all equipped with computed tomography machines in the villages of India so that every individual with stroke who ought to be thrombolysed is given his/her due,” said Naidu. In his speech, Prof. Carroll outlined the philosophy of the World Federation of Neurology.

In fact, he provided a roadmap for the future of neurology. Both he and Dr. Grisold agreed that the way forward was to make CT scanners and basic neurological care accessible to each village in India.

Aside from the inaugural function, the Conference of Indian Neurologists had all of the ingredients for a successful meeting in assisting them to meet the challenges they faced. Themes and topics of over 40 symposia, quasi-workshops, continuing education programs, and hot topics varied from contemporary to futuristic, all cutting edge. Just to cite a few examples, there were symposia on artificial intelligence and continuous dopaminergic stimulation. Really, this meeting of Indian neurologists had something for everyone. There were neuroradiology rounds, grand rounds, panel discussions, a clinico-pathological conference, and even running, Yoga, and singing events for the members of the academy.

The Annual Conference of the Indian Academy of Neurology is always a glorious event, worthy of attendance by neurologists from all corners of the world. We warmly welcome neurologists from anywhere in the world to attend our future annual meetings. Just keep your eyes on www.ianindia.org for more information and updates.

Kimmerle and Chiari) in 2001. The “phenomenon of pale spot” on the face after intravenous injection of nicotinic acid solution in patients with facial nerve palsy was also described by Prof. Lobzin, proving the compressive and ischemic origin of the pathology. Moreover, he described rhombencephalitic syndrome in mumps and myasthenic syndrome in patients following ionizing radiation due to nuclear reactor accidents.

The series of research investigations of Prof. Lobzin concerning hypokinesia and hypodynamy in young healthy adults trained in Cosmonaut Corps for prolonged space traveling is crucial. The disciples of Prof. Lobzin became leading professors of neurology in the Soviet Union and continued developing his scientific ideas. A significant part of Prof. Lobzin’s scientific creativity was devoted to research of neuroses, asthenic conditions, and autogenic training.

The investigations of Prof. Lobzin concerning infectious lesions of the nervous system were extremely interesting. He proposed a classification of meningitis, defined approaches to aetologic and pathogenic treatment of these diseases and also for “arachnoiditis.”

Bekhterev Protege

The evolution of neurology in St. Petersburg owed much to dedicated scientists, such as Prof. Lobzin, who in turn can be considered continuation of the Russian neurological scientific school founded by Vladimir Bekhterev (1857-1927), because the teachers of Prof. Lobzin were disciples of V. Bekhterev. Unfortunately, the “iron curtain” and consequent limitations in scientific information exchange did not allow foreign colleagues to be familiar with the unique scientific achievements that Russian scientists made despite meager funding and nearly complete absence of feedback from leading foreign partners.

Fortunately, nowadays neurologists from St. Petersburg and also from other parts of the world have the opportunity for creative exchange of scientific information in most aspects of neurology aimed at further improvement of medical education quality and to provide adequate care to neurological patients. Nowadays, many staff members of the department of neurology named after S.N. Davidenkov are members of the European Academy of Neurology and the World Federation of Neurology, allowing direct exchange of views and experience in the diagnosis and treatment of a large number of severe pathologies of the nervous system.

The latest Davidenkov Readings Congress in 2019 was attended by 1,153 delegates, during which 117 scientific reports concerning important aspects of clinical neurology (such as stroke, degenerative pathology of the nervous system, neuromuscular diseases, neurooncology, neurocardiology, neurorheumatology, neurogerontology, child neurology, urgent neurology, headaches and migraine, neurorehabilitation, cognitive disorders, Alzheimer disease, Parkinson disease, peripheral nervous system pathology, cerebral and spinal cord injuries and their consequences) were presented. It should be emphasized that participation for neurologists is traditionally free of charge.

The delegates felt the real support from the World Federation of Neurology. The lectures for Russian neurologists from world-leading neurologists was met with a keen interest. The faculty included WFN Past-President Prof. Raad Shakir (U.K.), who devoted his lecture to the relationship between neurology and psychiatry, WFN Secretary General Prof. Wolfgang Grisold (Austria), who demonstrated difficulties in the differential diagnosis of neoplastic aetiology of cranial and other peripheral nerves, and Prof. Nils Erik Gilhus (Norway), who presented a review of neurological disorders and complications during pregnancy. These scientific lectures were closely followed by the audience with great interest and
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course material that is at the heart of a successful World Congress.

Altogether 264 invited speakers presented eight main topics, each of three to four 1.5 hour sessions with three speakers, 25 other topics of one to two 1.5 hour sessions, six regional sessions, 25 teaching courses each of three hours, three early morning teaching courses of one hour each, 1,438 posters (370 each day) and the extraordinary Tournament of the Minds. This year, 15 teams entered with each team comprising four members and subjected to carefully prepared questions to remove any language advantage or disadvantage.

The Tournament of the Minds proved a real competition and an immensely enjoyable educational event from its outset until the final as the last event on the Thursday. This too proved to be a hard-fought competition between the teams from Sri Lanka, Malaysia, India, and Hong Kong, all from the Asian and Oceanian Association of Neurology, until Hong Kong, coming from behind, emerged victorious. Congratulations to Drs. Wing Chi Fong, Ping Wing Ng, Annie Mew, and Andrew Chan and congratulations also to the Tournament of the Minds team of Richard Stark, Nick Davis, Fauzi Belhasen, and Serenella Servidei. (See photos on page 10.)

At the commencement of this column, I mentioned the “intangibles” which I believe are the hallmark of a truly successful congress. Together, these comprise a feeling that permeates all aspects of the congress for almost everyone through the 4.5 days. One sees people relaxed, enjoying the program, interacting with colleagues in an easy confident manner, seemingly relishing all aspects of the meeting. It stems from a good “connected” feeling that is no doubt the result of the quality of the scientific and teaching program, the lecturers and chairs, the congress app, the high quality of the AV and the AV service personnel, the ease of getting from one lecture room to the next, the exhibition, and the quality of the lunches and tea and coffee break refreshments.

Many other events occurred during the congress. The prestigious WFN medals were presented to Dr. Mustapha El Aloui Faris for service to international neurology and to Dr. Mark Hallett for contributions to neuroscience (see photos below), while the Ted Munsat prize for educational activities had a worthy recipient in Dr. Sarosh Katrak. There were numerous WFN committee meetings, including that of the Global Neurology Alliance, a relaxed meet and greet of young neurologists, and the selection of Montreal as the site for the 2023 WCN. The Montreal bid, led by Guy Rouleaux, defeated those of Mexico City (led by Miguel Osornio Guerra) and Rio de Janeiro (led by Fernando Cendes) for the right to host the XXVI WCN.

The WFN is most grateful to all those who contributed to this remarkable effort to showcase important elements of the WCN. (See Figure 2, which details this exceptional effort to showcase important elements of the WCN.)

For the first time, the WFN made a concerted effort to disseminate important messages emanating from the WCN through our inaugural Press Office, managed by Ashley Logan of Yakety Yak, and through the WFN social media outlets orchestrated by Kenes (Simona Milenkova and Milush Bahanov), the WFN e-communications committee (Walter Struhal and Tissa Wijeratne) and Yakety Yak (Ashley Logan). The WFN is most grateful to all those who contributed to this remarkable effort to showcase important elements of the WCN. (See Figure 2, which details this exceptional output, on page 2.)

At the closing ceremony, Prof. Suhail Al Akrun, president of the XXIV WCN, handed over the XXV WCN in Rome to Prof. Antonio Federico of the Italian Society of Neurology.

The XXIV World Congress of Neurology was an outstanding success, and the World Federation applauds all associated with the event for making it so.

DAVIDENKOV

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generated considerable debates among neurologists from Russia and other countries.

Challenging Discussions

During the congress symposia and roundtable discussions, the leading scientists from Russia and other countries shared views on challenging and difficult issues related to a large number of disease diagnostics and treatment; this is extremely important for the northernmost megametropolis of Europe – St. Petersburg, the population of which according to unofficial data is more than 7 million inhabitants. The importance of interaction with governmental and municipal services in cases of strokes is clear, and the local neurological community of St. Petersburg is concerned about the frequency, severity, and rehabilitation difficulties of stroke patients despite the setting up of 14 regional neurovascular centers that contain all of the necessary equipment and multidisciplinary teams. In addition, the elderly population of St. Petersburg is over 1 million people, making the situation of provision of care to the elderly more difficult, and creating an urgent need for international cooperation in cognitive disorders such as Alzheimer disease and other forms of dementia.

Thus, modern neurology in St. Petersburg continues to evolve, and it requires further support from the World Federation of Neurology, which will lead to improvement of neurological care all over the world. The Russian Federation is a unique country due to its multi-ethnic and multicultural background from the West and East. Our experience will certainly be useful for all neurologists across the world. We hope that continuation of the annual “Davidenkov Readings” will draw the attention of neurologists from all the countries, particularly as the meeting takes place in one of the mostly beautiful cities in the world with a well-developed and modern infrastructure. We invite all those who are interested to participate.

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T he Tournament of the Minds was held at the 2019 World Congress of Neurology (WCN) in Dubai and was an outstanding success. Fifteen teams participated in the initial round, which was a record. It was particularly pleasing to see teams from several countries that had not previously participated in the event. The teams participating were from Australia and New Zealand, Brazil, Hong Kong, India, Iran, Kenya, Malaysia, Nigeria, Pakistan, Philippines, Republic of Moldova, Sri Lanka, Sudan, United Arab Emirates, and the United Kingdom.

The initial elimination round was an exciting affair with 20 multiple choice questions being asked of the teams. The room was full, and audience participation was possible through a voting app. For every question, the audience’s opinion about the answer could be displayed. Many of the questions were challenging, and at the end of this session, the two leading teams were Iran and India. Other teams to qualify for the semi-final round were Australia and New Zealand, Brazil, Hong Kong, Kenya, Malaysia, and Sri Lanka.

The questions which had largely been provided by Faouzi Belahsen and his team from Morocco were entertaining but also highly educational. Several had a local and regional quality to them. Two concurrent semi-final sessions were run. These required a somewhat different strategy as questions were presented often with information unfolding gradually. The first team to answer correctly scored the points. Points were deducted for teams providing a wrong answer, and of course, premature attempts to answer before all of the information was available ran a significant risk of providing the wrong answer. A number of the teams adapted their strategy well to this different task, and two teams from each semi-final proceeded to the grand final. These teams were India, Hong Kong, Malaysia, and Sri Lanka.

The final was the most exciting and the closest contest that has ever occurred in the Tournament of Minds. With 10 points being awarded for a correct answer and 10 points deducted for a wrong answer, the final scores after 20 questions were:

<table>
<thead>
<tr>
<th>Team</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hong Kong</td>
<td>50</td>
</tr>
<tr>
<td>Malaysia</td>
<td>40</td>
</tr>
<tr>
<td>India</td>
<td>40</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>40</td>
</tr>
</tbody>
</table>

A tiebreak question resulted in Sri Lanka being declared the runner-up.

The members of the successful Hong Kong team were Drs. Wing Chi Fong, Ping Wing NG, Yuen Ni Annie Mew, and Lung Tat Andrew Chan. They were awarded the cup and medals, and we congratulate them.

The Tournament of the Minds requires considerable effort and input from many sources. The preparation of the questions requires a lot of work, both in sourcing the questions in the first place and also in revising the wording so that the disadvantage some teams have of not having English as their first language is minimized. I would like to thank the members of the Tournament of Minds Committee who contributed to this process and to chairing the sessions: Nick Davies, Faouzi Belahsen, Serenella Servidei, and Takashi Kanda. The presentation of the tournament is demanding with regard to audio-visual assistance and the support provided by the audio-visual team and Kenes was outstanding.

Finally, there is no doubt that the success of the tournament on this occasion was largely responsible to the generosity of the congress committee in allowing tournament participants refunds on registration costs. The tournament has certainly become a popular component of the World Congress, and we look forward to a successful tournament in Rome in 2021.