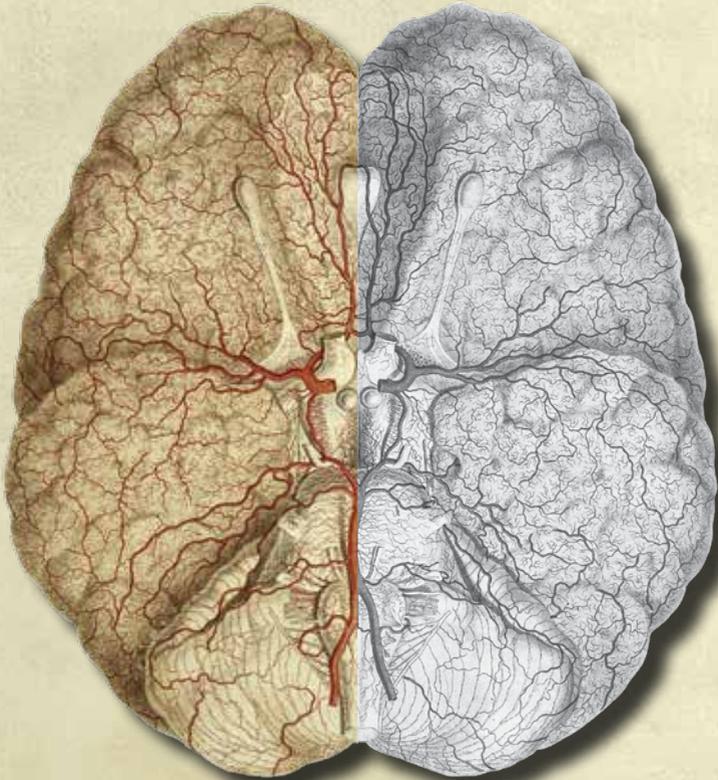


**International Society  
for the History of the Neurosciences**

**ISHN - 22<sup>nd</sup> Meeting**

**June 19-23, 2017**  
**Besançon, France**  
Maison de l'Économie



**Final program**

### Local committee

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### Logistic staff

Béatrice Joliot, Emmanuel Laurent, Nadine Vantard, Lucie Bernard

Dear Colleagues and Friends,

Along with the Local and Scientific Committees, we are delighted to welcome you to the 22<sup>nd</sup> Congress of the International Society for the History of the Neurosciences.

Besançon, capital of the Franche-Comté province, is a spectacular historic town, close to the Swiss border, which was also the birthplace of the most famous French writer, Victor Hugo. Moreover, the history of its region is particularly interesting for neurosciences, with Louis Pasteur in the nearby small city of Arbois, with one of the main French “torpillage“ centers of World War I in Salins-les-Bains, and Edouard Brissaud’s birthplace in Besançon itself. Specific time is planned for the congress participants to visit these most interesting places and the Gala Dinner will be held in La Citadelle dominating the city and built by Vauban the famed Louis XIV’s military engineer.

2017 will also be the 100-year Jubilé of Jules Déjerine’s death. With Déjerine in mind, the French neurologist from Switzerland, we are also proud to make the local organization of this meeting a French-Swiss joint venture, associating in particular delegates from the University of Franche-Comté and the Swiss Medical Network.

While the scientific sessions are hosted in Besançon, there will be a special after-meeting cultural tour in nearby Switzerland. This tour will allow delegates to explore La Chaux-de-Fonds, historical home to Swiss watches and birthplace of famous avant-garde architect Le Corbusier, of the writer Blaise Cendrars and of Louis Chevrolet, before he emigrated to the US where he revolutionized the car industry.

On behalf of the ISHN board and the meeting committees, we wish you a pleasant congress.

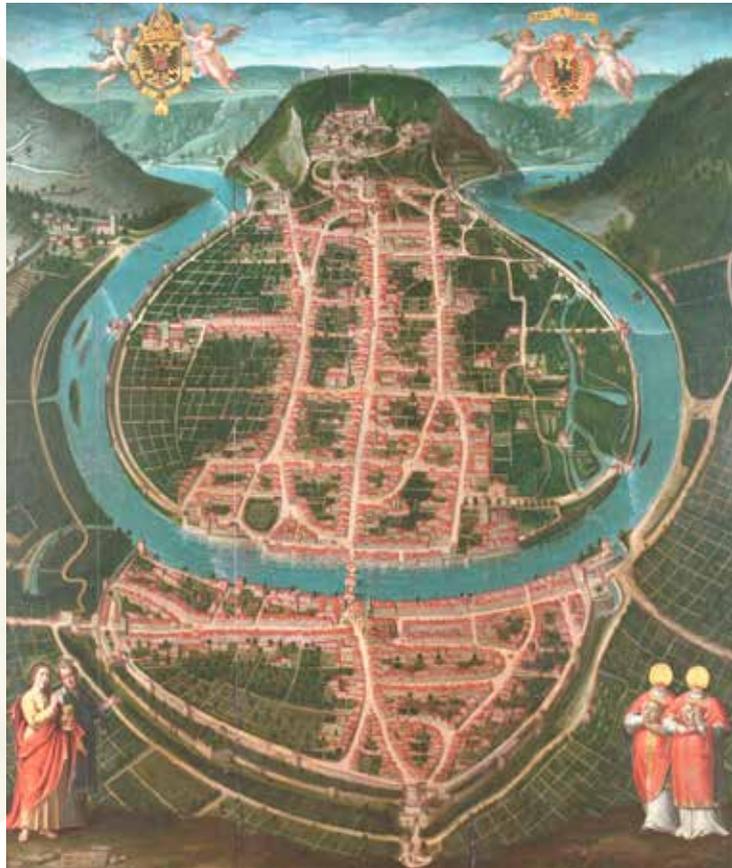


Prof. Julien Bogousslavsky



Prof. Laurent Tatu

**Monday June 19, 2017**



**Welcome and opening**

13h45 - 14h00 Dean of Besançon Medical School.  
**Thierry Moulin**

**Symposium WW1 Neuropsychiatry**

**Chairpersons: Laurent Tatu - Jean-Gaël Barbara**

14h00 - 14h25 The French neurologist Jules Froment in the Great War.  
**Emmanuel Broussolle**

14h25 - 14h50 Gustave Roussy and electric treatment of shell shock.  
**Laurent Tatu**

14h50 - 15h15 "Off With Their Heads": An American perspective of shell shock during World War 1.  
**William Hanigan**

15h15 - 15h40 Louis-Ferdinand Céline a neurologic war-wounded.  
**Odile Roynette**

**Coffee break 15h40 - 16h10**

**Christopher U.M. Smith presidential lecture**

16h10 - 16h40 "Light": Dark chamber experiments of Ibn al-Haytham and serial paintings of Claude Monet.  
**Gül Russel**

**Platform session**

**Chairpersons: Frank W. Stahnisch - Paul Eling**

16h40- 17h00 The facial pain of Johann Laurentius Bausch.  
**Uwe Neubauer**

17h00 - 17h20 "Not a word heap": John Hughlings Jackson's (1835-1911) notion of propositional speech.  
**Marjorie Lorch**

17h20 - 17h40 "A peculiar condition of the nerves": Reports of hysteria by Richard Bright.  
**Henry S. Schutta**

**Welcome drink and music 17h45 - 19h00**





Tuesday June 20, 2017

**Platform session****Chairpersons: J. Wayne Lazar - Kathryn Schoefert**

- 8h30 - 8h50  
**Sherry Ginn**  
Hollywood horror films and the mind-body question.
- 8h50 - 9h10  
**Egle Sakalauskaite-Juodeikiene**  
Plica polonica and neurology in the 19<sup>th</sup> century Vilnius.
- 9h10 - 9h30  
**Maxence Gaillard**  
Tools and paradigms in neuroscience.
- 9h30 - 9h50  
**Mattia Della Rocca**  
A Newton for a blade of grass. Ralph Stayner Lillie (1875-1952) the "iron wire model" and the early roots of neuromorphism.
- 9h50 - 10h10  
**Edward H. Reynolds**  
Brain and mind: Laycock's Theory of Relativity.

**10h10 - 10h40****Coffee break****Symposium Dejerine one century later****Chairpersons: Jacques Luauté - Emmanuel Broussolle**

- 10h40 - 11h05  
**Thierry Moulin**  
From Charcot to Dejerine: The Salpêtrière chair of neurologic diseases.
- 11h05 - 11h30  
**Julien Bogousslavsky**  
The Dejerine's Swiss trail: From Switzerland to Paris and back.
- 11h30 - 11h55  
**Emmanuel Broussolle**  
Contribution of André Thomas and Jules Dejerine to the study of the cerebellum.
- 11h55- 12h20  
**Jacques Luauté**  
Dejerine and neuroplasticity.

**12h20 - 14h00****Lunch  
Posters presentation****Platform session****Chairpersons: Peter J. Koehler - Malcolm Macmillan**

- 14h00 - 14h20  
**Jean-Marie Le Minor**  
About the 500th anniversary of the first human dissection in Strasbourg and the most ancient printed representations of a real dissected brain (1517).
- 14h20 - 14h40  
**Elisabeth Lens**  
"The Einstein Girl": fictional literature as a contribution to evaluation of diagnostic classification.
- 14h40 - 15h00  
**Kathryn Schoefert**  
Coming into its own? Comparative neuropathology and veterinary neurology ca1960.
- 15h00 - 15h20  
**Frank W. Stahnisch**  
On the reconstruction and networking processes of the Max Planck Institutes in the field of neurology, psychiatry, and psychology during the postwar period, 1948-1968.

**15h20 - 15h50****Coffee break****Platform session****Chairpersons: Sherry Ginn - Axel Karenberg**

- 15h50 - 16h10  
**Catherine E. Storey**  
The forgotten Royle: a discarded procedure, discarded from history?
- 16h10 - 16h30  
**Helmut Gröger**  
Vienna University Institute for the anatomy and physiology of the central nervous system: The world's first brain research institute.
- 16h30 - 16h50  
**Eelco F. Wijdicks**  
Marie-Chatelin syndrome: The eponym that never existed.

**17h00 - 18h45****City tour****20h00 - 23h00****Gala Dinner**

## Posters presentation

Tuesday June 20, 2017  
12h20 - 14h00

### ***Heinz Krestel***

Does modern neuroimaging replace classical neuroanatomy to teach network concepts in Neuroscience:  
The example of the language network.

### ***François Ochsner***

An historical aspect of conduction blocks.

### ***Matthieu Béreau***

Henry Meige and his eponym syndrome.

## Gala Dinner La Citadelle de Besançon

Tuesday June 20, 2017  
20h - 23h



Wednesday June 21, 2017

**Platform session**

**Chairpersons: Eelco F. Wijdicks - John Carmody**

8h30 - 8h50 St. Vitus' Dance in Europe. A Historical Perspective.

**Axel Karenberg**

8h50 - 9h10 Brain stones in the history of medicine.

**Peter J. Koehler**

9h10 - 9h30 A simple sugar in a complex encephalopathy:  
Bircher and lactulose.

**Eelco F. Wijdicks**

**Frank Clifford Rose memorial lecture**

9h30 - 10h00 Neurological diseases in famous artists.

**Michael Hennerici**

10h00 - 10h30

**Coffee break**

**Symposium *Rare neuropsychiatric syndromes***

**Chairpersons: François Boller - Douglas J. Lanska**

10h30 - 10h55 Capgras et al.

**Jean-Pierre Lauté**

10h55 - 11h20 Klüver-Bucy syndrome.

**Douglas J. Lanska**

11h20 - 11h45 Ganser and Cotard syndromes.

**Sebastian Dieguez**

11h45 - 12h10 Dream enactment.

**Panagiotis Bargasos**

12h10 - 12h35 Charles Bonnet and other hallucinatory syndromes.

**François Boller**

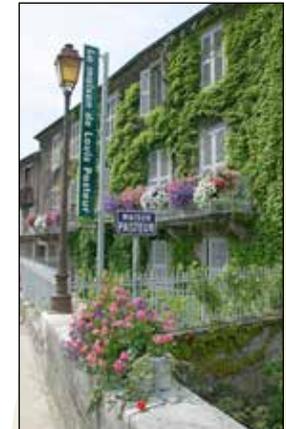
13h00 - 19h00

**Cultural tour**

**Cultural tour**

Wednesday June 21, 2017

13h00 - 19h00



**Louis Pasteur's home & Museum**

**City of Arbois (town vine cellars)**

**Arc-et-Senans Saltwork  
(UNESCO World Heritage site)**





Thursday June 22, 2017

**Platform session****Chairpersons: Lorenzo Lorusso - Nicholas J. Wade**

- 8h30 - 8h50  
**Boleslav L. Lichterman** Changing attitude to knock-outs in Soviet sports medicine.
- 8h50 - 9h10  
**Nicholas J. Wade** Visualizing the History of Neuroscience in Europe.
- 9h10 - 9h30  
**Lorenzo Lorusso** Saving the History of Neuroscience in Europe.

**Guest conference**

- 9h30 - 10h00  
**Semir Zeki** A history of the visual brain's colour centre (area V4).

**10h10 - 10h30****Coffee break****Symposium *Facial expressions of emotions*****Chairpersons: Stanley Finger - Olivier Walusinski**

- 10h30 - 10h55  
**Douglas J. Lanska** Charles Darwin's reinterpretation of Charles Bell's anatomy of emotional expression (1844).
- 10h55 - 11h20  
**Paul Eling** Franz Joseph Gall's (1758-1828): Gall's glorious Germany tour.
- 11h20 - 11h45  
**Stanley Finger** How Gall's doctrine was introduced to the British and his overlooked visit to London.
- 11h45 - 12h10  
**Olivier Walusinski** An historical review: Faces, skull, character and emotions, from 1295 to 1800.
- 12h10 - 12h45  
**Andrew Waclawik** Duchenne's contributions to the study of the mechanisms of human facial expressions.

**12h45 - 14h00****Lunch****Platform session****Chairpersons: Moshe Feinsod - Catherine E. Storey**

- 14h00 - 14h20  
**J. Wayne Lazar** Henry Herbert Donaldson (1857-1938) background and career.
- 14h20 - 14h40  
**John Carmody** Two great and influential papers in modern neuroscience: both seemingly unaware of their historical genesis and counterpoised philosophical character.
- 14h40 - 15h00  
**Ingrid Daey Ouwens** Malaria fever therapy: a centennial.
- 15h00 - 15h20  
**Malcolm Macmillan** Alfred Walter Campbell's return to Australia.

**15h20 - 15h50****Coffee break****Platform session****Chairpersons: Henry S. Schutta - Marjorie Lorch**

- 15h50 - 16h10  
**Peter F. Lens** Diogenes' rehabilitation.
- 16h10 - 16h30  
**Piet Voskuil** The possible role of disturbance of visual perception in the brain on the onset of the episodic psychoses of Vincent van Gogh.
- 16h30 - 16h50  
**Tyler D. Boulter** Chevalier John Taylor: Plagiarist or innovator in the history of ocular anatomy and vision?

**Farewell**

## Post-Congress program

Friday June 23, 2017  
8h00 - 19h00



Friday June 23, 2017

### Post-Congress

- 8:00** Bus departure from Besançon.
- 9:30** Welcome at Espace horloger - Maison de l'UNESCO La Chaux-de-Fonds (Switzerland).
- 10:00** Tourist-mini train - Visit to heritage sites.
- 11:00** Visit of La Maison Blanche (Le Corbusier house).
- 12:30** Lunch break.
- 14:00** Visit of Watch Factory TAG-HEUER.
- 15:00** Visit of Musée international de l'horlogerie, La Chaux-de-Fonds.
- 16:00** Free time in the city.
- 17:30** Return by bus to Besançon.



## The French neurologist Jules Froment in the Great War

### Emmanuel Broussolle

*Hôpital neurologique Pierre Wertheimer, Hospices Civils. Lyon (France).*

Jules Froment (1878-1946) is a distinguished French neurologist of the first half of the 20th century. He did his career at Lyon University Hospitals where he was appointed successively associate professor, professor of Internal Pathology and professor of Medicine. Froment contributed much to neurology, notably on language and speech disorders, normal and pathological gait and importantly on parkinsonian rigidity. He described in 1926 the Froment's facilitation maneuver, aimed at disclosing latent rigidity of the limbs, still performed today when examining parkinsonian patients. We here would like to emphasize Froment's special involvement during World War I, while taking care of war-injured soldiers in Paris with Joseph Babinski (1857-1932) at the Pitié Hospital and Lycée Buffon (converted in military hospital). He devoted his interest to peripheral nerve palsies and described the classical Froment's newspaper sign, or Froment's thumb sign, still utilized today to diagnose ulnar nerve palsies. With Babinski, Froment encountered numerous cases of soldiers, who, after a minor injury, developed clinical manifestations combining muscular atrophy, paralysis, skin vasomotor and trophic changes, contracture and hyper-reflexivity of tendon reflexes, and frequent fibrotendinous or muscular retractions. Babinski and Froment distinguished this syndrome from simulation and hysteria and called it 'physiopathic', considering that this was organic. Other and close phenomena were described by military doctors from Britain, USA and Germany among others. Lewis Yelland in London proposed the term 'shell shock' to reflect 'combat stress reaction'; Today, 'post-traumatic stress disorder', 'reflex sympathetic dystrophy' and 'complex regional pain syndrome' are employed depending on patients' clinical profile.

## Gustave Roussy and electric treatment of shell shock during WW1

### Laurent Tatu

*Service de neurologie et laboratoire d'anatomie. CHRU. Besançon (France).*

The French neurologists and psychiatrists who were mobilized during the Great War were confronted with numerous soldiers suffering from war neuroses. Following Joseph Babinski's pithiatism concept, many doctors considered these soldiers to be simulators and use of aggressive therapies to enable their prompt return to the battlefield was advocated. In 1915-1916, Clovis Vincent (1879-1947) developed a special electrotherapy called 'torpillage' to treat soldiers suffering from 'intractable' neuroses. However, the treatment was painful; soldiers began to refuse it and, following a publicized trial, the method was discontinued.

Given the influx of soldiers suffering from seemingly incurable neuroses, Gustave Roussy (1874-1948) made an attempt in 1917 to develop a new method of psycho-faradic treatment. Roussy was born in Vevey, Switzerland, and began his medical studies in Geneva. He became an interne des hôpitaux de Paris under Pierre Marie and Jules Déjerine. His thesis on thalamic pain syndrome led to the eponymous Dejerine-Roussy syndrome. During WW1, he was appointed head of the military neurological center in Besançon, he implemented his procedure in an isolated fort with his colleagues Jules Boisseau (1877-1961) and Michel d'Oelsnitz (1877-1946). The most difficult cases were sent to Roussy and he progressively recommended the use of more intense faradization and disciplinary measures. Like Vincent a few months earlier, he was faced with numerous therapeutic failures, escapes and patients refusing treatment.

In January 1918, Roussy sent six soldiers suffering from war neuroses to the Besançon military court. They refused electric treatment, considering it as a form of torture. Following this trial, Roussy was heavily criticized by the press and was finally disavowed by his superiors.

**“Off with their heads”:  
An American perspective of shell shock during World War 1**

**William Hanigan**

*University of Mississippi medical center (USA).*

Bizarre behaviors, weak clinical definitions, and convoluted psychiatric theories associated with a horrific war produce the enduring ability to inflate the historiography of shell shock. Using clinical and pension data this talk simply argues that shell shock, however defined and measured, was recognized by the end of the war as a relapsing but potentially curable disorder that had little effect on military operations as well as reasonable postwar clinical outcomes.

In 1918 most major armies in France developed efficient evacuation schemes for shell shock casualties with over a dozen different successful therapies. Unlike malaria at Salonika, the extent of casualties never hindered major military operations. Hospital admissions for shell shock in the American Army were 1.4 percent of strength; over 90 percent returned to duty of some sort. American neuropsychiatrists, recruited by the National Committee for Mental Hygiene, were critical participants in new, comprehensive army doctrine and had significant impacts on interwar military medical care and expansion of civil psychiatric practice.

Statistics from the U.S. Veterans Bureau revealed that 92 percent of veterans with neuropsychiatric disorders who were undergoing treatment in 1929, suffered from psychosis rather than neuroses. Pensioners with shell shock received disability payments usually within the lowest financial range. (Pensioners with psychoses usually received total, permanent disabilities.) Clinical follow-up was limited, but indicated that over 80 percent were employed by the mid-1920s, although many remained symptomatic to some degree. Despite headaches, nightmares, and uneven public support or government assistance, American veterans with shell shock adjusted to postwar changes in their family and social conditions.

**Louis-Ferdinand Destouches, a neurological war-wounded**

**Odile Roynette**

*Département d'histoire. Université de Franche-Comté. Besançon (France).*

This communication will explore the singular case of Louis-Ferdinand Destouches, well known as the foremost French writer Céline, who published in 1932 *Journey at the end of the night*, his first novel in which the evocation of the First World War, its violence and its absurdity constitute a key-element.

Louis-Ferdinand Destouches was 18 years old when he enlisted as a private in September 1912 in the 12th armoured cavalry. When the war broke out in August 1914, he fought on the Western Front in Lorraine and Flanders, until he was wounded on the battlefield of Ypres (Belgium) by a bullet in his right forearm, the 25 October 1914. His right forearm' radial nerve was broken.

We will examine how Louis-Ferdinand Destouches had been treaded behind the lines from October 1914 until December 1915, when he was definitely discharged by a French doctor from the French Consulate in London.

This experience of a injured and convalescing soldier is of most importance into the emergence of the war writer Céline, which all works will deal with the war violence imposed on him.

## The facial pain of Johann Laurentius Bausch

**Uwe J. Neubauer**

*Klinik für Neurochirurgie. Bremen (Germany).*

In literature dealing with trigeminal neuralgia you will hardly miss a remark on the history of the disease. It is generally accepted that John Locke in 1677 with the case of the Countess of Northumberland described a typical case of TN, Nicolas André in 1756 invented the term «tic douloureux» and John Fothergill in 1773 presented the first case series of this «painful affliction of the face».

Today in many publications Johann Laurentius Bausch is mentioned as the first documented case of TN. Bausch (1605-1665) was the town physician of the Franconian city of Schweinfurt, Germany and the first president of the Academia Naturae Curiosa, the first society of natural sciences in Germany, founded in 1652. The diagnosis of his disease is solely based on his eulogy in which it is described and which was later partially published by the academy.

All articles report that - starting in 1661 Bausch suffered from a right sided facial pain in the maxilla, which affected him intermittently and even disabled him to eat solid food. He finally died after gradual emaciation under the signs of a stroke. - Most articles give references to other articles only and not to the original source and therefore are more or less citations of citations. This might be due also to the fact that the particular part of the original eulogy was written in the ancient German of those days.

Based on the available original sources the suffering of Bausch will be analyzed once again, the differential diagnoses discussed and finally tried to give an answer if he really suffered from TN.

## “Not a word heap”: John Hughlings Jackson’s (1835-1911) notion of propositional speech.

**Marjorie Lorch,**

*Department of Applied Linguistics and Communication Birkbeck. University of London (United Kingdom).*

Few of the early clinical writings on aphasia from the 1860s onwards concern themselves with any detailed analysis of the linguistic aspects of the disorder. The general practice was to state that the patient had a difficulty in spoken expression, sometimes including a few verbatim samples. Characterization of this disorder was typically framed either as a selective impairment of articulatory movements or impaired memory for words. John Hughlings Jackson (1835-1911) developed the distinction between emotional automatic utterances and meaningful speech under voluntary control. Jackson drew on consideration of vocal expression within an evolutionary and anthropological context by Herbert Spencer (1820-1903) and Theodor Waitz (1821-1864), and the neurophysiological considerations of Thomas Laycock’s reflex theory (1812-1876). However, Jackson’s original contribution to the understanding of aphasia was his observation that language consisted of sentential units rather than lexical elements. Jackson extended the notion of “proposition”, which had been considered philosophically by his contemporaries John Stuart Mill (1806-1873), Robert G. Latham (1812-1888) and William Thomson (1819-1890), to the pathological condition of aphasia. In doing so, he propounded a more detailed psychological and neurological conceptualization of the nature of expression in relation to thought by more fully specifying the nature of language. This paper will examine the development of Jackson’s ideas on propositional speech and consider his legacy in modern neuropsychology for this contribution.

## **“A peculiar condition of the nerves”: Reports of hysteria by Richard Bright.**

**Henry S. Schutta**

*University of Wisconsin. Madison (USA).*

Richard Bright's Volume II (1831), which dealt with diseases of the brain and spinal cord has not gained much attention, in large measure because it was overshadowed by Volume I (1827) which represents a magnificent contribution to the understanding of kidney diseases and which earned him deservedly great fame and the title of “Father of Nephrology. Bright's case reports of hysteria in Volume II provide a sample of the nature and quality of information that it contains and shows that the neglect of Bright's work on the nervous system is undeserved. Bright considered hysteria to be a neurosis caused by irritation. He recognized that it was a multi-symptomatic syndrome, established diagnostic criteria for hysteria, and provided detailed descriptions of the symptomatology of his patients. Although he did believe that hysteria originated in disordered functions of the uterus, he suggested a novel pathogenesis for hysteria based on the concepts of “irritability, “irritation” and “sympathy” of the brain with the uterus. Bright was an early proponent of the notion that hysteria was a neurosis and initiated a syndromatic approach to this disease later also evident in Briquet's (1859) Treatise on Hysteria. Bright's accounts of hysteria reflect the concepts of this disease current in the early decades of the 19th century.

## **Hollywood horror films and the mind-body question**

**Sherry Ginn**

*Rowan-Cabarrus Community College. Concord (USA).*

Hollywood horror cinema often explores mind-body dualism. A search of films within the horror genre will find plots which propose that brains and other parts of the human body are capable of exerting control over their hosts. For example, many horror films present transplant recipients as passive hosts for the transplant with the transplant taking control of the recipients' actions. A common plot in this sub-genre is for someone to have a hand transplanted, generally from a serial killer donor, after which the killer hand takes up its former “hobby.” We understand that such an outcome is not possible: our brains would control the hand and not vice versa. The issue with a brain transplant is not as clear. Yes, the brain would control the body, but problems could arise when there is a miscommunication between the two. Isabelle Dinoire, who received the first successful face transplant in 2005, died last year after a decade of physical and psychological problems. Besides issues with rejection, she and other such recipients have reportedly had problems with the psychological effect of losing “face.” One of the newest sub-genres, marrying horror with speculative fiction, involves the creation of cyborgs: creatures that are part machine and part human, marrying wetware/software (mind) and hardware (brain) in an attempt to create the “transhuman.”

In this presentation I will review the basic tenets of mind-body dualism and how it has been illustrated by Hollywood. I will examine the illustrations within the context of the scientific literature of the time. Although entertaining, these films are highly speculative. It is hoped that the audience recognizes their entertainment value and does not, as social psychological research suggests, remember the message and not the source.

## Plica Polonica and neurology in the nineteenth century Vilnius

**Egle Sakalauskaite-Juodeikiene**

*Clinic of Neurology and Neurosurgery. Vilnius university (Lithuania).*

The aim of the study: to investigate descriptions of plica polonica, to assess its association with the nervous system diseases in the XIXth century in Vilnius.

Material and methods: Two doctoral theses, defended in Imperial University of Vilnius are analyzed: „Dissertatio inauguralis medico-practica de plicae Polonicae in varias, praeter pilos, corporis humani partes vi et effectu“ (Vilnae, 1821) by Carolus Kaczkowski, and „Dissertatio inauguralis medico-practica de plica“ (Vilnae, 1830) by Ludovicus Knothe.

Results: Plica was thought to be the endemic disease in Poland, Tartary and the neighbouring countries, beginning with a long lasting nervous - rheumatic ailment, progressing to a formation of filthy hair plait. Plica was believed to be associated with number of pathologies: diseases of bones, cartilages, tendons, ligaments, muscles, membranes, blood vessels, and various viscera in doctoral theses by Kaczkowski and Knothe. Plica was assumed to be the direct cause of number of neurological and psychiatric diseases: headaches, seizures, sleep disorders, paralyses, hypochondria, mania, melancholy, moreover, plica was stated to be a promotional factor for developing apoplexy. However, in 1876 Vilnius Medical Society finally declared that plica polonica was not a disease, but a result of obscurity, prejudice and lack of hygiene, and the question whether plica was a disease, has been finally closed in Vilnius.

Conclusion: Plica polonica till the end of the XIXth century in Vilnius was believed to be multi-organ disease, involving not only skin and its appendages, but also associated with number of chronic diseases, including pathology of nervous system.

## Tools and paradigms in neuroscience

**Maxence Gaillard**

*Japan Society for the promotion of science. Rikkyo university (Japan).*

In a recent contribution to a special issue of *Frontiers in Systems Neuroscience* dedicated to “paradigm shifts in neuroscience,” the philosopher John Bickle claimed that tool development is the driving force behind revolutions in contemporary neuroscience, opposing the classical Kuhnian narrative focused on competing paradigms. While agreeing with the general line that philosophers and historians of science should devote more attention to the role of instruments in neuroscience, this presentation proposes several amendments to the model advanced by Bickle.

First, a general conceptualization contrasting the “technology-push” (scientific change pushed by new instruments and techniques) and “paradigm-pull” (scientific change driven by competition of paradigms) aspects of the dynamics of science is proposed. Different positions along this axis are examined. Overall, it is shown that the opposing views about tool-based scientific change and paradigm-based scientific change are too simplistic with regard to existing literature on scientific experiments. Reasonable interpretations of scientific change in contemporary neuroscience have to find some intermediary ground between the two views.

This is shown through examples taken from functional human brain imaging as a tool of cognitive neuroscience. Some of the specifics of the cases for positron emission tomography and functional magnetic resonance imaging, and their role in the “neurocognitive revolution,” are discussed. Finally, the presentation focuses on the historical sequence of the debate on the mental imagery phenomenon between 1980 and 2000, and the intervention of neuroimaging in the debate. Several mechanisms accounting for the driving force of tools in paradigms shifts are then suggested.

## A Newton for a blade of grass. Ralph Stayner Lillie (1875-1952) the “iron wire model” and the early roots of neuromorphism

**Mattia Della Rocca**

*University of Pisa. (Italy).*

Abstract: Since 1914, the scientific work of Canadian-American physiologist and philosopher Ralph Stayner Lillie (1875-1952) focused on the conditions determining the rate of physiological conduction in irritable tissues, of which nerves were a special interesting case. Drawing inspiration from the work of Friedrich Wilhelm Ostwald (1853-1932) and his “chemical distance action” theory, as well as the membrane hypothesis formulated by Julius Bernstein (1839-1917), Lillie developed his “iron-wire model” of nervous conduction, providing a first efficient artificial analog to rising neuroscience. Lillie’s iron wire model exhibited both a threshold for excitation and a refractory period, mimicking surprisingly well the physical and physiological attributes of nerve fiber, and powerfully supporting the membrane theory of nervous propagation. Historically and epistemologically speaking, Lillie’s work on the nervous system deeply influenced the first generation of American neuroscientists, spreading and supporting membrane theory to explain nervous transmission. Furthermore, Lillie’s work led biophysicists who worked in the 1930s-1940s to consider physical analogs of the nervous system as useful instruments for neuroscientific inquires - eventually leading to the development of the mathematical theory of nerve transmission by Nicholas Rashevsky (1899-1972) and laying the foundation of the voltage clamp technique by Kenneth Stewart Cole (1900-1984). In this respect, Lillie’s model acted as the very cornerstone on which the simulative and technological approach to the brain started to be built. In my talk, a historiographical inquiry on Lillie’s scientific thought and work is provided, framed within the still widely unreported history of the intersections between neuroscience and neurotechnology.

## Brain and mind: Laycock’s theory of relativity.

**Edward H. Reynolds**

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London (United Kingdom).*

Thomas Laycock (1812-1876) was born in Yorkshire and studied medicine at University College London, Paris and Gottingen. He was initially a physician at the York County Hospital and Lecturer in Medicine at the York Medical School. As a provincial English physician his appointment in 1855 to the prestigious Chair of the Practice of Medicine in Edinburgh was an unprecedented achievement. He published on many aspects of medicine, including public health, but had a special interest in the nervous system. By 1840 he had written books on Hysteria and Nervous Diseases of Women. He is best known for his 1844 theory extending reflex activity in the spinal cord to the ganglia of the brain and for his awareness of unconscious brain activity. This led on to his scholarly two volume textbook on Mind and Brain (1860) in which he took an evolutionary view of the relationship of mind to brain and its application to philosophy, zoology, mental pathology and the practice of medicine. He was critical of speculative philosophy of the mind. He pleaded for the scientific study of mental function in relation to brain physiology, as necessary for the understanding and treatment of insanity, by establishing in Edinburgh in 1857 an informal but popular course on Medical Psychology and Mental Diseases. I will highlight in particular his overlooked Law of Relativity as the fundamental law of all phenomena, whether of matter, life or thought.

### The Dejerine's Swiss trail : From Switzerland to Paris and back

#### Julien Bogousslavsky

*Swiss Medical Network. Montreux (Switzerland).*

Augusta Klumpke remains famous not only as Jules Dejerine's wife, but as the first externe and interne woman in French medicine. Jules Dejerine is considered the father of modern neurology. He was born in Geneva, where he attended secondary school, before having to move to Paris, as there was no medical school in Geneva. He started his career with the support of Alfred Vulpian, Charcot's great colleague and friend, before being elected the second successor to Jean-Martin Charcot at La Salpêtrière and the chair of Clinique des Maladies du Système Nerveux. There, he had several direct pupils, such as his fellow Swiss-born Gustave Roussy. Augusta was born in San Francisco, where her father was a founder of the town, but she emigrated to Germany and Lausanne, Switzerland, with her mother and sisters. In Lausanne, she was unusually active as compared to other female students, founding a student association and studying at the Gymnasium until being forbidden to take the baccalauréat examination for being a girl. As she wanted to study medicine but there was no school in Lausanne or Geneva, and her mother discouraged her to apply to Zurich because of the presence of Russian anarchists, she went to Paris, where she succeeded as the first woman achieving the externat, along with Blanche Edwards, and then the internat. She met Jules during a common stay in Vulpian's service, they got married and subsequently worked together until Jules' death in 1917. On a private side, they always kept contact with Switzerland, acquiring a nice chalet in the Thalgut, close to Berne, which they wittfully named "the Neuron". There, they spent several weeks each year during the Summer. One of their usual guests was professor Dubois, the famous neuropsychiatrist from Berne, from whom Jules introduced in his practice the technique of isolation cure for neurasthenia. In 1909, Jules was appointed honoris causa at the University of Geneva. After their parents' death, their daughter neurologist Yvonne Sorrel-Dejerine kept close contact with Switzerland, where a still today active "Dejerine fund" was established with the Swiss Society of Neurology.

### Contribution of André Thomas and Jules Dejerine to the study of the cerebellum

#### Emmanuel Broussolle

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Jules Joseph Dejerine (1849-1917) and his pupil André Thomas (1867-1963) did seminal works on the cerebellum which we here recall on the semiological then pathological sights. 1)- The main contributors to the description of the cerebellar syndrome between 1890 and 1920 were Joseph Babinski (1857-1932), Thomas and Gordon Holmes (1876-1966). Babinski reported asynergia, hypermetria and adiadochokinesia. Thomas added dysmetria, dyschronometria and passivité with the pendular reflexes. Holmes established hypotonia with the rebound phenomenon (Stewart-Holmes maneuver), delayed initiation or arrest of movement and action tremor and rubral or thalamic tremor. 2)- Dejerine and Thomas described in 1900 olivo-ponto-cerebellar atrophy (OPCA). The first signs occurred at middle age with staggering gait. Disease course was of several years. Pathologically, severe atrophy of the cerebellum, inferior olives, middle cerebellar peduncles and pons was depicted. Differential diagnosis was Friedreich' ataxia, Pierre Marie's cerebellar heredoataxia and the familial Menkes form of OPCA. Other cases of OPCA were subsequently described with sometimes extrapyramidal symptoms. Sporadic OPCA was definitely recognized in 1948. Thereafter, two overlapping syndromes were described in the 1960s, the Shy-Drager syndrome (with prominent orthostatic hypotension) and Adams-Van Bogaert striatonigral degeneration (with parkinsonian signs and degeneration of the caudate-putamen). In the late 1980s, new histopathological data showed that these entities and OPCA shared common oligodendroglial inclusions with different anatomical distributions, which were therefore coalesced under the term multiple system atrophy (MSA). This concept of MSA is today recognized with two features, MSAP with prominent parkinsonian syndrome, and MSAc (i.e. sporadic OPCA) with mostly a cerebellar syndrome.

## Dejerine and Neuroplasticity

**Jacques Luauté**

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A focus on neuroplasticity is proposed on the basis of the case “Rivaud” published in 1902 by Dejerine & Dejerine in *la Revue Neurologique\**. In this paper, the authors describe the morphological characteristics of both pyramidal tracts in a post-mortem examination of a young man who suffered a left infantile hemiplegia. Before he died at the age of 24 from pulmonary tuberculosis, it is mentioned that his lower-limb had remarkably completely recovered while his upper-limb remained paralysed. The brain lesion concerned the right rolandic opercula with a disruption of the corona radiata. The main finding was a compensatory hypertrophy of the left bulbar pyramid contralateral to the lesion whereas the right bulbar pyramid had almost disappeared. The hypertrophy of the left bulbar pyramid was evidenced in comparison to normal sections. Moreover, at the decussation level, a small part of the pyramidal fibers did not cross the middle line and formed a compact tract. Although homolateral pyramidal fibers have already been described by Dejerine and Thomas, these fibers are not usually organised in a compact tract such as in this patient. It is proposed that the remarkable lower-limb recovery was mediated by the homolateral pyramidal tract. According to the authors, this anatomical compensation would be possible when the motor area is totally destroyed and when the lesion occurs during childhood. This seminal work and other historical observations addressing neuro-plasticity are discussed in the light of recent studies using modern tools such as diffuse tensor imaging and functional imaging.

## About the 500th anniversary of the first human dissection in Strasbourg and the most ancient printed representations of a real dissected brain (1517)

**Jean-Marie Le Minor**

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The first official human dissection in Strasbourg (Alsace region) was performed in 1517. At that time, Strasbourg was a free imperial city in the Holy Roman Empire. Strasbourg was a German-speaking and Roman Catholic city. No academy nor university existed and the closest universities were in Freiburg im Breisgau, Basel, and Heidelberg. This public dissection, realized in the presence of surgeons and barbers, was directed by Wendelin Hock von Brackenaw, a German doctor in medicine that graduated in Bologna and who worked occasionally in Strasbourg. The body, granted by the Magistrate of the city, was that of a young man condemned to hang. During the dissection, drawings were realized by Hans Wechtlin (c.1480-1530), a pupil of Holbein the Elder, who worked mainly in Basel. A fly sheet with a woodcut reproducing the observations, entitled “Ein contrafact Anatomy der inneren gliedern des menschen”, was published the same year by Johann Schott, printer in Strasbourg. It seems to be the most ancient anatomical illustration realized from nature. It showed a frontal view of the cadaver after a large thoraco-abdominal opening. Around, are placed seven small figures, one of the tongue and six of successive stages of dissection after the skull's opening. It seems to be also the most ancient printed illustrations representing a real dissection of the brain. This fly sheet had considerable success and its illustration was reproduced in many books and in particular in the famous Hans von Gersdorff's book on surgery, “Feldtbuch der Wundartzney”, published in Strasbourg in the same year 1517 by J. Schott.

### **“The Einstein Girl”: fictional literature as a contribution to evaluation of diagnostic classification**

**Elisabeth Lens**

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In medical practice, diagnostic classification is considered obligatory to improve communication between health workers and to inform about aetiology, pathophysiology and prognosis and to optimize treatment. In addition, fictional literature offers insight into social-cultural significance of diseases and the effect of disease on individual patients.

This paper explores how fictional literature can contribute to the understanding of the effect of diagnostic classification on personal life, by analyzing the historical novel *The Einstein Girl*. In this novel the clinical practices of Martin Kirsch, psychiatrist at the Charité Psychiatric Clinic during the rise of the Nazi Party in Germany is described. One of his patients is a young woman with amnesia, widely known as ‘the Einstein Girl’.

In this novel, Kirsch struggles with disease classification on a professional level with regard to the psychiatric patients under his care, on a more personal level with the Einstein Girl and on an intrapersonal level concerning his own syphilitic disease. He increasingly realizes that diagnostic classification enabled implementation of the Nazi Racial Laws. These laws targeted e.g. those with mental disabilities and diseases, including syphilis. Many of these patients were subjected to experiments, forced sterilization and euthanasia.

In conclusion, disease classification in itself is not a guarantee for optimal medical practice, since its consequences are dependent on the social-cultural context. However, it is a starting point for individualized patient care.

### **Coming into its own?**

### **Comparative neuropathology and veterinary neurology ca 1960**

**Kathryn Schoefert**

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Around 1959 William Hadlow, Carlton Gadjusek and others proposed a resemblance between scrapie in sheep and kuru, a neurological condition observed in the remote Papua New Guinea communities of the Fore. In this paper I draw attention to a larger, post-war groundswell in comparative neurology, neuroanatomy, and neuropathology that sought to link human and animal nervous systems, their diseases and disorders.

Hadlow's 1959 *Lancet* article thus coincided with Ernst Frauchiger and Robert Fankhauser's 1957 *Vergleichende Neuropathologie des Menschen und der Tiere* and James Robert Maitland Innes and Leon Saunder's 1962 *Comparative Neuropathology*. These research projects were characteristic of interlocking cultures of anatomy, pathology, neurology, and veterinary science; international post-war efforts to consolidate disease classifications; studies in zoonoses and veterinary public health; and worries about a paucity of experimental studies for key human brain disorders. Authors acknowledged constraints: few species had been scrutinised in neuroanatomical detail; treatment options for neurological conditions in animals were limited; and intra vitam examinations complicated and costly. Yet Innes and Saunders argued that comparative neuropathology had come into its own. It had the potential to elucidate not only infectious diseases affecting the nervous system, but also to reconcile neurological disorders in humans and animals thereby defining and systematising disease. In this paper I elucidate these concerns and constituencies in comparative neuropathology and veterinary neurology in the context of the emerging neuro-sciences programme.

## On the reconstruction and networking processes of the Max Planck Institutes in the field of neurology, psychiatry, and psychology during the postwar period, 1948-1968

**Frank W. Stahnisch**

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During the founding years of the Federal Republic of Germany (FRG) in the 1950s and 1960s, there had been several obstacles for a “normalization process” in contemporary biomedical research and in the interdisciplinary field of neuroscience. Beginning with the prolonged planning period for the reopening of the former Kaiser Wilhelm Society for the Advancement of Science, which under the chairmanship of physicist Max Planck (1858-1947) took three years when the Second World War had ended, the para-university research society named in his honor became eventually established in 1948. In this respect, it proved to be a major asset that (other than following to World War One) Germany and Austria had not been internationally isolated again. Already during the late 1940s, United States government authorities had started to mobilize funds and institutional know-how to fuel this reanimation process, building on preexisting research and education networks along with the institutes of the reestablished Max Planck Society (MPG), which helped to absorb and integrate many of the returning émigré scientists and young scholars abroad. Many individuals from this early group later developed successful academic careers. After the Second World War, however, neuroscience (Germ. Hirnforschung) as a new interdisciplinary scientific enterprise was scarcely represented in West-Germany for almost 20 years. There are three major reasons for such a low performance in this field: first, the forced emigration of Jewish neuroscientists after 1933. Second, German university structures had strongly countered interdisciplinary research due to an over-focus on medical research disciplines. And third, the international isolation or self-isolation of German scientists became a major obstacle to the implementation of new fields of research developed elsewhere. Most importantly, a new generation of young neuroscientists had to receive part of their training in the United States to help reestablishing the research fields of neurology, psychiatry and psychology at postwar Max Planck Institutes as well. While looking at the time from the early creation of the relevant MPI, 1948, to the groundbreaking reforms in the FRG's research and university sectors during the student protests of 1968, this presentation looks at the founding, developments, and impediments of MPI in the early neuroscience field following the end of the Second World War. It draws on archival materials from the MPG in Berlin, as well as from specialized institutes in Munich, Frankfurt, and Cologne, while including oral history information from former members of the MPG. The project is part of the Presidential Commission on the History of the Max Planck Society; and its kind support for this historical research is hereby thankfully acknowledged.

## The forgotten Royle: A discarded procedure, discarded from history?

**Catherine E. Storey**

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On the 20th October 1924, at the Astoria Hotel, New York, two medical graduates of the University of Sydney delivered the John B. Murphy Oration at the meeting of the American Academy of Surgeons. Dr William Mayo was so impressed with the research team of John Irvine Hunter and Norman Royle on his visit to Sydney, he invited the pair to present their work on the effect of sympathectomy on lower limb spasticity. The American surgeons were greatly impressed. However, within a few weeks, Professor John Hunter was dead from typhoid at the age of 26, and Royle contracted encephalitis that would later be held responsible for his developing Parkinson's disease. The outpouring of grief for the young Professor Hunter was extraordinary. History suggests that the research team of Hunter and Royle came to an abrupt end with the death of Hunter. However, in reality, Royle continued the work, contributed a significant amount to the literature on sympathectomy and in particular he promoted the role for this procedure in the treatment of spastic paraparesis. In the end others proved that the procedure was of no value for this indication, but the lessons learnt from the surgery of the autonomic nervous system perfected by Royle, were of great value to other surgeons for other indications.

## Vienna University Institute for the Anatomy and Physiology of the Central Nervous System: The world's first brain research institute

### Helmut Gröger

*Medical university of Vienna (Austria).*

The Institute was established by H. Obersteiner (1847–1922) in 1882 to explore the structure and performance of the central nervous system and its morbid alterations for applications in clinical neurology and psychiatry. Obersteiner compiled macroscopic preparations and histological sections, building an unequalled special library. His guide into the anatomy of central nervous organs (1888) was published in multiple editions in German, English, Russian, French and Italian.

Obersteiner encouraged international co-operations of Science Academies to create further brain research institutes and the Brain Commission in London (1904), headed by the German H.W. Waldeyer (1836-1921), with Obersteiner as Vice President.

The Vienna Institute had a small permanent staff but numerous temporary co-workers, including guest researchers from across the world and most of Vienna's psychiatrists and neurologists.

O. Marburg (1874–1948), Obersteiner's closest collaborator after 1906 and successor in 1919, expanded the research to include neurophysiology. In 1904, he drafted a microscopic topographic atlas of the human central nervous system, which had reached three editions by 1927. Marburg made fundamental research in almost all areas of neurology and cultivated connections to university clinics, especially in neurosurgery.

Another Institute descendant was E.A. Spiegel (1895-1985), who moved to the US in 1932 and went on to establish stereotactic neurosurgery.

Following Austria's annexation by Nazi Germany, the Institute lost its international reputation. Marburg and all his collaborators, E. Pollak (1877–1939) and L. Krainer (1907–19??) were expelled. A. Spitzer (1868–1943), professor emeritus since 1933, was deported.

## Marie-Chatelin syndrome: The eponym that never existed

### Eelco F. Wijdicks

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George Guillain was a student of Pierre Marie and one of his most prolific. 100 years ago, George Guillain, Jean Alexandre Barré, and André Strohl described acute and progressive limb weakness in 2 soldiers they examined in an Army hospital in Amiens during the Somme battle. The key findings were 1) the discovery of an unusual CSF finding of isolated albumin elevation without lymphocyte reaction (hyperalbuminose du liquide céphalo-rachidien sans réaction cellulaire) and 2) full recovery. Guillain and Barré quickly named it "notre syndrome" effectively expunging Strohl. By a curious twist of fate, one month after the original description, an identical report on three soldiers with weakness, areflexia, and the characteristic CSF findings was published by Pierre Marie and Charles Chatelin. In a later footnote they said, "MM. Guillain, Barré et Strohl published very similar cases in the 'Bulletin of Medical Society of Hospitals of Paris', 1916. The authors have also arrived at conclusions that are analogous to ours. However, we were aware of their work only after our communication to the Society of Neurology." It is not inconceivable the Guillain- Barré syndrome might have been called Marie-Chatelin syndrome. Guillain was very prolific and reporting multiple new observations with some an eponym status ( e.g. Guillain-Thaon syndrome). Guillain never mentioned the incident in his celebratory manuscript of Pierre- Marie ( "mon vénéré maître").

## St. Vitus' Dance in Europe. A historical perspective

**Axel Karenberg**

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My paper will present an outline regarding the historical development of St. Vitus' Dance in Europe and beyond. Shortly after the year 1000 the first of the so-called "dancing plagues" or "dancing manias" made their appearance, principally in German-speaking Europe. Numerous sources report dozens, even hundreds of people leaping and singing through the streets and marketplaces accompanied by falling down, cramps and every kind of convulsion including collective excesses. After Christianization, catholic saints such as St. Vitus and St. John took over the protective function of the former heathen gods. With Paracelsus, a more medical view came into play, eventually leading to the observations of Thomas Sydenham and George Huntington. The eventful story of St. Vitus Dance was perhaps best summarized by the famous Canadian physician William Osler who wrote more than a century ago: "In the whole range of medical terminology there is no such olla podrida (hotch-potch) as Chorea, which for centuries has served as a sort of nosological pot into which authors have cast indiscriminately affections characterized by irregular, purposeless movements."

## Brain stones in the history of medicine

**Peter J. Koehler**

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Hieronymus Bosch's painting «Cutting the stone», created over 500 years ago, is usually interpreted as depicting medical quackery and human stupidity. To these interpretations, Charles Gros (1999) added the suggestion of real medical practice of trepanation sometimes carried out in cases of melancholy and madness. It is known that severe traumatic cases have been trepanned, though reluctantly (Van Swieten). Today we sometimes see calcified intracranial tumors and other processes. What kind of brain stones have been found in the past? René Descartes believed the pineal gland was the seat of the soul (sensorium commune). In a rational way he became convinced that sensory information from the body should convene in one place, an unpaired organ «la petite glande», the small gland. Not everyone was convinced of this localization. One of the physicians, who opined differently was the Dutch Cornelis Stalpart van der Wiel (1620-1702), physician in The Hague. In his 1682 book *Hundred rare comments, in medicine as well as surgery and dissection*, he wrote a chapter on «Stone found in the pineapple gland and seed vessels», describing a person, who at autopsy was found to have a stone in the pineapple. Being aware of Descartes' opinion, he concluded «that aforementioned gland cannot be the seat of the soul, nor that the most important faculties or acting powers ... have their origin here». In this paper, I will discuss Stalpart's paper and his references to brain stones in contemporary literature, including Schenckius, Cattierius and Kerckringius.

### A simple sugar in a complex encephalopathy: Bircher and lactulose

**Eelco F. Wijdicks**

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The neuropsychiatric manifestations of chronic (and acute) liver failure were well known since antiquity and mostly accepted as a diagnostic sign of terminal liver disease. Hepatic encephalopathy and slowing of EEG had been linked to increased blood ammonia levels. Johannes Bircher (currently professor emeritus of medicine and clinical pharmacology) published his first experiment in *The Lancet* in 1966. Two patients with chronic portal systemic encephalopathy were treated with several regimens, which were changed weekly. In both patients, lactulose reversed the encephalopathy dramatically with disappearance of flapping tumor but with appearance of coma if lactulose was substituted for sorbitol. The encephalopathy was graded according to Parsons-Smith criteria and encephalopathy on EEG by Guggenheim criteria. The lactulose supplied by Philips-Duphan in the Netherlands was known as Duphalac - orange-flavored syrup typically used for constipation. Ammonia levels dropped with improving encephalopathy and vice-versa. Despite the dramatic response, this treatment was not accepted, resulting in one of the leading hepatologists telling Dr. Bircher "Do you think Hannas a simple sugar like lactulose could be any good in such a complicated disease ?" (Bircher, personal communication) Acceptance came after a randomized trial in 1969 and full endorsement of leading authorities in liver disease. It has remained the first treatment of hepatic encephalopathy since.

### Capgras et al.

**Jean-Pierre Luauté**

*Psychiatrist. Romans-sur-Isère (France).*

Capgras syndrome heads a group of disorders: the Delusional Misidentification Syndromes (DMSs), which concern the processes of recognition and identification of certain close Objects, notably Persons.

In Capgras syndrome - the most common and best known of the DMSs - the misidentification leads to the delusional conviction that a close relative has been replaced by an identical - or almost identical - "double", whose "original" has disappeared. The double is an impostor without name or identity.

Capgras syndrome is the classic type of neuropsychiatric syndrome and, in a historical perspective, the aim of the talk will be to show how the isolation of the syndrome, and our current conception of it, represents a characteristic story of the 20th century.

We have progressed from an initial, purely psychodynamic conception, towards neuropsychological hypotheses based on cerebral dysfunctions. This development has been made possible by the discovery that the DMSs were encountered not only in primary psychiatric disorders, but also in various organic disorders, particularly in neurodegenerative diseases.

Capgras syndrome and the other DMSs may constitute models for the way in which certain psychiatric syndromes should be explored.

**Description of the “Klüver-Bucy syndrome”  
by Brown and Schäfer (1888).**

**Douglas J. Lanska**

*VA Medical Center, Great Lakes VA Healthcare System. Tomah (USA).*

In 1937 German-born American psychologist Heinrich Klüver and American neurosurgeon/neuropathologist Paul Bucy reported a dramatic behavioral syndrome in Rhesus monkeys that had undergone bilateral temporal lobectomies since 1936. The full Klüver-Bucy syndrome (KBS) included hyperorality, placidity, “hypermetamorphosis” (constant manual exploration and inappropriate attention to new stimuli), dietary changes, altered sexual behavior, and visual agnosia (“psychic blindness”).

Klüver and Bucy were initially unaware of an earlier report of KBS by American neuropsychiatrist Sanger Brown and his research mentor, English physiologist Edward Albert Schäfer, at University College, London, first presented in 1887 and published in 1888. In 1940, Bucy and Klüver acknowledged the priority of Brown and Schäfer, and Klüver did again in 1951, particularly concerning the “psychic blindness,” oral tendencies, “hypermetamorphosis,” and changes in emotional behavior.

Brown and Schäfer had noted marked behavioral changes in one Rhesus monkey that had undergone complete bilateral temporal lobe ablations, and in another in which only the superior temporal gyri were removed bilaterally. They excluded significant sensory alterations as an explanation for KBS, but concluded that it was impossible to determine from animal studies whether there was a loss of the ability to interpret sensations and hence to recognize things (ie, an agnosia). Instead, Brown and Schäfer suggested that bilateral temporal ablations produced defects of intelligence and memory that “reduced the animals ... to a mental condition resembling that of an idiot.”

KBS was clearly discovered by Brown and Schäfer around 1887, and subsequently by Klüver and Bucy in 1936. While both groups recognized the bizarre behavioral changes of bilateral temporal lobe ablation, Brown and Schäfer dismissed these as a curiosity because they did not elucidate the cerebral centers for sensation. In contrast, Klüver and Bucy, and particularly Klüver, recognized the syndrome as an opportunity to elucidate the role of the temporal lobe in behavior.

**Why are Ganser and Cotard syndromes so bizarre?**

**Sebastian Dieguez**

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Patients with Ganser syndrome will provide stupid answers to stupid questions. Patients with Cotard syndrome will claim that they are dead or do not exist. Both syndromes were described near the turn of the 19th century and have left an enduring trail of confusion, scepticism and controversy to this day. Here, after providing an overview of Sigbert Ganser’s and Jules Cotard’s initial (and more detailed) observations, as well as the legacy of the syndromes that bear their names, I attempt to unravel the reasons for their aura of mystery. What is it that makes these syndromes so striking, bizarre and nosologically unstable? Instead of a clinical view, I propose a mixed cognitive and pragmatist approach highlighting inferences and expectations proper to normal human interaction, which break down in specific ways in Ganser and Cotard syndrome. In addition to their rarity and general neglect, I suggest that their “uncommonness” also has to do with the scope and limits of humans’ ability to detect and process deviant behaviour and mental abnormalities in general.

## Hallucinations without cerebral disease: The Charles Bonnet Syndrome (CBS) and autoscopic phenomena (AP)

**François Boller**

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Descriptions of wrong perceptions have figured in the literature since the beginning of recorded history. Esquirol was probably the first to differentiate hallucinations from illusions in 1817. Both are wrong perceptions, but in illusions, an external stimulus is always present whereas hallucinations occur in the absence of corresponding sensory stimuli. Hallucinations may occur in a variety of medical conditions (psychiatric and neurodegenerative diseases, epilepsy, metabolic disorders, drug ingestion), but also in individuals without cerebral illness. The Charles Bonnet syndrome (CBS) and autoscopic phenomena (AP) represent two examples of the latter.

The visual hallucination of CBS are mainly found in patients with impaired visual acuity. The name derives from the Swiss naturalist Charles Bonnet's descriptions of his grandfather in 1769. Hallucinations can be either persistent or recurring, and they are often pleasant. In most cases, subjects are aware that there is no real stimulus present. They are often relieved by improvement of visual functions.

The term autoscopy was first used by Charles Feré in 1891. It refers to complex experiences involving the illusory reduplication of one's own body. The famous Swedish naturalist Carl Linneus and many others experienced AP. According to Ladavas et al., they derive from impaired synthesis of multiple inputs where contrasting proprioceptive and other signals may play a role in modulating the illusory visual reduplication of the patient's own body. AP have been extensively utilized in the literature from Ovid (the myth of Narcissus) to Kafka and Dostoevsky, and in movies from the Marx brothers to Woody Allen.

## Changing attitude to knock-outs in Soviet sports medicine

**Boleslav L. Lichterman**

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Boxing started to develop in Soviet Russia in 1920s for preparing younger generation to labor and defense. There were no concerns about dangers of knock-outs and knock-downs in Soviet literature on sports medicine until late 1950s. Knock-out and cerebral concussion were not viewed as synonyms. This attitude was changing gradually. The term "sports neurology" («спортивная неврология») appeared in Russian literature in 1958. Dr. Elena Dinnits from Novosibirsk stated in her Ph.D. dissertation in 1963 that a boxer after knock-out should be urgently hospitalized. In 1969 Dr. Tamara Toniyan defended her Ph.D. dissertation on remote sequelae of closed head injuries in sportsmen. Boxing was named the most traumatic sport (26% of all sport injuries). There were two main interpretations of pathophysiology of knock-out: 1) due to direct stroke to the head (cerebral concussion) and 2) due to reflexory mechanisms (P.I. Gotovtsev, 1984). Posttraumatic encephalopathy (dementia pugilistica) developed in remote period of head injury in boxers who mounted the ring for more than 5 years. A recent review on mild repetitive head injury (Julian Bailes, et al., 2013) suggests a term "subconcussion" as new concept which divides concussion into several degrees of severity. Paradoxically it resembles a classification of concussion (mild, moderately severe and severe) in Soviet medical literature in the middle of the XX century.

## Visualizing the history of neuroscience in europe

**Nicholas J. Wade**

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An underlying theme in the FENS projects is to make the history of neuroscience more amenable to students and teachers through visualization. This is evident in the emphasis on internet-based projects that use visual material in addition to text. An example of this is Portraits of European Neuroscientists - neuroportraits.eu - which was compiled by Marco Piccolino and myself together with web designer Adrian Simmons. There are 183 entries at present and many more could be added. Each entry consists of one or more perceptual portraits of a neuroscientist with text describing their work and further web links to sources relating to them. At present, entries are restricted to those who were born before 1900. The stimulus for creating the portraits and website was a realization that libraries are rarely visited by present-day graduate students who assume that all they require is available on the internet. If they can be lured to a library via the likes of neuroportraits.eu then the site has been a success! Neuroscience is broadly defined and examples of French neuroscientists who are on the website (like Jean-Martin Charcot) will be shown as well as others (like Étienne-Jules Marey) who I hope will find a home there soon. Marey was from Beaune and he was a pioneer of studying biological motion by reducing dynamic actions to their static components. He developed two photographic methods to record animal motion: one involved recording activity on a single photographic plate and the other recorded separate images of the action; they were called chronophotographs. Thus Marey epitomized the aims of the FENS history projects by visualizing biological processes in a manner that makes them comprehensible to everyone.

## Saving the history of neuroscience in Europe

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The history committee (HC) of the Federation of European Neuroscience Societies (FENS) has promoted different activities in the history of neuroscience in order to preserve memories and artefacts of past neuroscientific research and to stimulate the interest of neuroscientists in the history of their field. The three different FENS-HC activities pursued since 2010 have been the following: 1) the annual European History of Neuroscience Online projects; 2) The creation of a network of European museums or institutions (European Brain Museum project -EBM) with the development of an online database displayed as a map of Europe in order to list, promote and protect archives of brain sciences. 3) European History of Neuroscience Seminars to promote local knowledge regarding history of neuroscience. The latter initiative started in 2015 with the purpose of spreading history of neuroscience among professors, researchers, students and the general public, through the awareness of the collections and historical context of neuroscience (archives, museums, libraries) owned by the various European biomedical and academic institutions. To assess the interest of the audience that attended the seminars in the history of neuroscience, we distributed a questionnaire of five multiple choice questions. The main conclusion of the replies of participants is positive because the majority appreciated the initiative encouraging the preservation and promotion of the history of neuroscience. In particular, the participants (124/130 = 95.4%) rated the seminars as excellent or good. Most of the participants (115/120 = 88.5%) believed that the concepts learned would be useful in their culture and professional activity.

## Charles Darwin's reinterpretation of Charles Bell's anatomy of emotional expression (1844)

### Douglas J. Lanska

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In 1806, Scottish anatomist, neurologist, and philosophical theologian Sir Charles Bell inaugurated the scientific study of emotional expression with his *Essays on the Anatomy of Expression in Painting*. In subsequent editions (1824, 1844), Bell emphasized the role of the nervous system in generating emotional expression. Bell recognized the universality of emotions in different peoples and viewed them as something instilled in intelligent beings by "the Creator" to enable us to reflect on and draw us toward Him.

In 1826, as a medical student in Edinburgh, English naturalist Charles Darwin had Bell as an instructor of anatomy and was exposed to Bell's work on emotional expression, but he did not read Bell's work until 1840 (following the birth of his first child, whose expressions he carefully observed and came to believe must have had "a gradual and natural origin"). In Darwin's *The Expression of the Emotions in Man and Animals* (1872), he publicly praised Bell, but his preceding correspondence with British naturalist (and co-discoverer of natural selection) Alfred Russell Wallace in 1867, and his autobiographical notes (1876) indicate that he intended to impugn Bell's creationist perspective concerning the muscles of emotional expression. However, without an appreciation of how emotional expression conferred a selective advantage, Darwin abandoned the mechanism of "natural selection" that he had employed (in combination with inheritance of acquired characteristics) in *On the Origin of Species* (1859). Instead, to explain the evolution of emotional expression from animals to man, he reverted solely to the inheritance of acquired characteristics that had been advocated by his grandfather, English physician Erasmus Darwin, in *Zoonomia; or the Laws of Organic Life* (1794), and subsequently by French naturalist Jean-Baptiste Lamarck (from 1800-1822). Although Darwin had intended this work to support his theory of evolution, he undermined it by invoking the now-discredited Lamarkism.

## Gall's Glorious Germany Tour

### Paul Eling

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The restrictions imposed on Franz Joseph Gall's lecturing in Austria stimulated him to present his ideas to colleagues and the general public in Germany. We describe the reception he received. To use his own words: "I experienced, every where, the most flattering reception. Sovereigns, ministers, philosophers, administrators, artists, seconded my design on all occasions, augmenting my collection, and furnishing me every where with new observations." Gall's own impression can be illustrated with reports from local newspapers and personal letters. He received awards, specially manufactured medals, precious gifts, and earned a fortune with the tickets many bought to follow his courses. From the beginning, there were some critics, but in general the reception clearly contrasted with the idea that his theory was dangerous for the society at large, as the Austrian Emperor and his advisors would have it.

## How Gall's doctrine was introduced to the British and his overlooked visit to London

### Stanley Finger

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The common idea that the British knew little about Gall's «organology» prior to Spurzheim's first visit to London early in 1814 is without foundation. In 1800, British newspaper and magazines, some with large circulations, began covering his revolutionary theory of multiple innate faculties of mind with distinct cortical territories. This was five years before Gall left Vienna and 10 years before he published his first volumes of the *Anatomie et Physiologie*. Much of the early press coverage came from translated German articles. Often anonymous, the pieces varied from a few sentences to fairly lengthy descriptions, with some authors editorializing, and some being more accurate than others.

Gall was annoyed when Spurzheim split from him and began presenting his version of the system in English in Britain. He felt that he was not being given the priority and credit he deserved, and that Spurzheim's modifications were misguided. What is often overlooked is that Gall sailed to Britain in 1823 to bolster his reputation and set people straight. Armed with skulls and other supporting materials, he gave a number of lectures in London that were covered in several periodicals. He did not draw large audiences, however, and returned home disappointed 5 months later.

Using newspaper and magazine clippings, this presentation will first focus on the British coverage of Gall's emerging organology, and then on his 1823 visit, rather than on Spurzheim's competitive phrenology, which the British ultimately adopted.

## An historical review: Faces, skull, character and emotions, from 1295 to 1800, before Giambattista della Porta (1535-1615) to Johann Kaspar Lavater (1741-1801)

### Olivier Walusinski

*Family Physician. Brou (France).*

Physiognomy (from the Gk. *physis* meaning “nature” and *gnomon* meaning “judge”) is the assessment of a person's character or personality from his or her outer appearance, especially the face. The practice was well accepted by the ancient Greek philosophers and was revived and popularised by the Swiss Johann Kaspar Lavater (1741-1800), *Physiognomische Fragmente, zur Beförderung der Menschenkenntniss und Menschenliebe* (1776). The aim of this presentation is very briefly to give listeners a sense of the antiquity of ‘physiognomy’ in its written and drawn form from the Middle ages (the art of *Metoposcopy*) to the Italian scholar and polymath Giambattista Della Porta (1535–1615) from Naples, to the French painter Charles Le Brun (1619-1690) in Versailles. These two authors, and many others presented during the talk, have influenced not only Lavater but also the 18th century anatomist Franz Joseph Gall (1758-1828) and the 19th century criminologist Cesare Lombroso. This ‘invented archive’ provides a general geographical and social survey map of the material presence of textual physiognomy in early modern Europe. With regard to the more material side of the physiognomic, the early modern developments in anatomy, physiology, medical semiotics and psychology contributed to changing the medical conception of ‘the physiognomic’ out of all recognition, by approaching and trying to explain ‘the occult effects of the league’ of mind and body from within a self-referential system of the human body, detached from the mechanics of celestial influence. All these contributions can be seen as the beginnings of the long history of emotions studies, up to including “mirror neurons” and social neurosciences.

## Duchenne's contributions to the study of the mechanisms of human facial expressions

### Andrew J. Waclawik, M.D.

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Guillaume Duchenne was one of the founders of clinical neurology. To study the mechanisms of human expressions he used his knowledge and expertise in neuroanatomy and kinesiology, electrical stimulation of muscle and nerve, and the still novel at his time technique of photography, which enabled documentation of his clinical and electrophysiological observations. By stimulating and co-stimulating different facial muscles, he attempted to recreate facial expressions corresponding to various emotions. He published a synoptic table of primordial expressions and muscles that produce them. His studies of the anatomy and kinesiology of human expressions influenced many generations of physicians and scientists, including Charles Darwin. Duchenne's work has also had an impact on modern plastic and reconstructive facial surgery.

## Henry Herbert Donaldson (1857-1938), background and career

### J. Wayne Lazar

*Neuropsychologist. New York (USA).*

Henry Herbert Donaldson (1857-1938, American neuroanatomist and neurologist) was among those to benefit during the latter part of the nineteenth century in the United States from the introduction of laboratory methods to medicine. He graduated from Johns Hopkins University in 1885 just nine years after Newell Martin (1848-1896) was hired to organize the biology program there. He and other young graduates mostly from Johns Hopkins University, Harvard University, University of Pennsylvania, University of Michigan, and the College of Physicians and Surgeons in New York helped solidify the laboratory approach to medicine and to create a lasting experimental anatomy, physiology, and embryology in America.

He received his B.S. in 1879 at Yale and stayed an extra year doing research with Chittenden. He studied with Martin at Johns Hopkins University and obtained a Ph.D. there in 1885 with G. Stanley Hall (1844-1924). He spent a year in Europe with Bernard von Gudden (1824-1886) and Auguste Fore (1848-1931). He was hired as Head of Neurology at Clark University, the University of Chicago, and the Wistar Institute for Anatomy and Biology of the University of Pennsylvania. He was active in several societies acting as presidents of the American Neurological Association and the Association of American Anatomists and he was elected to the National Academy of Sciences in 1914. Through his role and work at the Wistar Institute, he was vital in leading the animal research effort in quantitative, developmental studies of the body, brain, spinal cord, and organs and in introducing the albino rat as a standard laboratory animal. I will discuss how these accomplishments came about.

**Two great and influential papers in modern neuroscience:  
Both seemingly unaware of their historical genesis  
and counterpoised philosophical character**

**John Carmody**

*Faculty of Medicine, University of Sydney (Australia).*

After a brief reflection on the importance of a philosophical element in all science, this paper will consider two landmark publications in neuroscience, by Cole and Curtis (in the USA) and Hodgkin and Huxley (in Britain), each of which appeared in 1939. In their quest to understand inter alia the biophysics of nervous conduction, both of those laboratories exploited the experimental advantages of JZ Young's recent re-discovery of the "giant axon" of the squid, but both had significant deficiencies in their historical awareness. More important, perhaps, though unwittingly, they respectively revealed the long contestation between the "positivist" approach (a reflection of the "Vienna Circle") and the Popperian philosophy of "falsification". This paper will argue that the British publication was the more important, not least because it had the greater scientific influence, largely on account of its stronger philosophic foundation, despite the fact that its authors seemed unaware of that essence, just as their American rivals also seemed unaware of the philosophical basis for their thinking. Nonetheless, the outcome could fairly be categorised as a "Kuhnian Revolution" in bioscience.

**Malaria Fever Therapy: a centennial**

**Ingrid Daey Ouwens**

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Exactly hundred years ago, in 1917, Julius Wagner-Jauregg performed his first inoculation of malaria-infected blood of a patient with General Paralysis of the Insane (GPI). Ten years later this therapy for late stage syphilis was the treatment of choice worldwide and Wagner-Jauregg was awarded with the Nobel Prize of Medicine or Physiology for his discovery of the therapeutic value of MFT in the treatment of GPI. The final curtain for MFT fell only in the 1950's, when antibiotic treatment became available for syphilis. However, the idea of treating one disease by causing another is still intriguing.

Therefore, this study investigates the importance of MFT for medicine in general and for GPI in particular.

In the first half of the 20th century, many reports suggested a favourable outcome of MFT in GPI. However, study designs at that time do not meet current standards and conclusive evaluation of the therapeutic value of MFT for GPI is still not possible. This is all the more pressing since recently reintroduction of MFT has been considered. Nonetheless, the importance of MFT for malariology is undisputed. Moreover, MFT contributed to the development of other «somatic therapies» and psychoimmunological research in neuropsychiatry.

## Alfred Walter Campbell's return to Australia

### Malcolm Macmillan

*University of Melbourne (Australia).*

Alfred Walter Campbell conducted important empirical work at Rainhill Lunatic Asylum before returning to Australia in 1905 and it is often assumed that he then concentrated on neurological practice to the detriment of any further research. This is not true. After describing how he gradually built his reputation as a neurologist, I will outline his research into:

- a) localisation in the cerebellum (1911). It was work that conclusively refuted Louis Bolk's thesis that variation in the size of the cerebellar cortex reflected variation in the amount of cortex controlling various groups of muscles;
- b) localisation of function in the brain of the gorilla (1916). This, the first such study, was very highly regarded by John Farquhar Fulton;
- c) the neuroses and psychoses in war (1916). Based on his WWI observations, it was judged as still relevant after WWII began; and
- d) the cause of the mysterious Australian 'X' disease, now Murray Valley Encephalitis (1917-1922), described by Nobel Laureate Frank Macfarlane Burnet as an insect-borne encephalitis and their work as the first isolation of one of the viruses responsible.

In addition to outlining the work on MVE, I attempt to separate Campbell's contribution from that of his collaborators.

## Diogenes' rehabilitation

### Peter Frank Lens

*Elderly care physician. Bosch en Duin (The Netherlands).*

Diogenes syndrome is a behavioural disorder characterized by extreme self-neglect, living in squalor, isolation, refusal of help, hoarding and lack of shame about one's condition. Gerontopsychiatric patients regularly display these features. In 1975 Clark coined the disorder 'Diogenes syndrome'.

Diogenes of Sinope (412–323 BC) was a Greek philosopher and pursued 'ἀτυφία', (without smoke), 'mental clarity', and 'εὐδαιμονία', (good spirit), 'flourishing in wellbeing', by an ascetic, autarkic and shameless existence, 'in accordance with fundamental rules of nature'.

To examine whether clinical characteristics associated with the Diogenes syndrome and reflect Diogenes philosophy, medical literature on the Diogenes syndrome and classical texts on Diogenes' philosophy were researched.

Clark's designation was mainly phenomenological; he referred to the resemblance of the self-neglecting patients and the philosophers appearance. Diogenes' poverty was intentional, while the patients' squalor arises from rejection of the outside world. Patients often dislike company, while Diogenes strived for discourse. Since patients regularly are unable to discard items from their homes, hoarding, originally considered an additional phenomenon, in subsequent publications became the central phenomenon. However, Diogenes was homeless and was absolutely not hoarding.

Diogenes would probably be pleased that his name is still known after 2,000 years. However, since he pursued a «minimalistic lifestyle», he might dislike the idea of his name coupled to a medical disorder characterized by hoarding.



## The possible role of disturbance of visual perception in the brain on the onset of the episodic psychoses of Vincent van Gogh

**Piet Voskuil**

*Neurologist. Ulvenhout (The Netherlands).*

Vincent van Gogh had episodic psychotic and depressive periods, mainly in the last years of his life.

Timing of the start of these periods can be connected to problems in his struggle with efforts to change his style of painting.

He was challenged, by for example his colleague's Gauguin and Bernard and the art critic Aurier, to experience with symbolist and abstract ideas about artistic expression. These ideas came from contemporary scientific concepts about the psychological effect of colours and lines as put forward for example by Charles Henry (1859-1926) and Charles Ferré (1852-1907).

In his letters we find evidence that, in Van Gogh's case, these efforts triggered a period of mental disturbance.

In this presentation I shall analyze this relationship by linking five paintings of van Gogh to biographical data that indicates on those moments the probability of the onset of one of an episode of mental disturbance. Most of this data can be found in his letters.

This analysis is initiated by the art historical concepts of Fred Leeman in his essay "Style and madness" (2006) and encouraged by the vision and the exploration of the visual perceptive system in (different schools of) art by Semir Zeki.



## Chevalier John Taylor: Plagiarist or innovator in the history of ocular anatomy and vision?

**Tyler D. Boulter**

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John Taylor (1703-1772) is a controversial figure in the history of vision. He is largely portrayed as an itinerant "quack" oculist, performing disastrous surgeries all over Europe, in particular for those on the eyes of the composers, J.S. Bach (1685-1750) and Handel (1685-1759) (James, 1933; Snyder 1963; Jackson, 1967; Zegers, 2005; Grzybowski 2013). Despite the emphasis on the sensational side of Taylor, contemporary references and sources present a more complex picture (Beverly, 1890; Wood, 1930). There are also tantalizing attributions to him as a "pioneer" (Coats, 1915; Berg, 1967; Trevor-Roper, 1989; Wade 2008). This serious side of Taylor has not been adequately explored. For example, John Taylor was a third generation surgeon, trained under the leading anatomist, William Cheselden (1688-1752). He published forty-five treatises on the structure and diseases of the eye in several languages (Beverly, 1890). These include: the first partial decussation of the fibers in the optic nerve with a unique diagram (Taylor, 1727), empirical demonstrations of binocular vision (1738), as well as a description of corneal "keratoconus," for which he used the term "ochlodes" (1766) and a novel surgical cure of squint (1756).

In this paper, we will investigate the origin and nature of some of his contributions. For example, was his diagram of the partial decussation of the optic fibers in the optic chiasm, based on his own discovery, or plagiarized from an earlier (though unpublished) copy by Sir Isaac Newton (1643-1727)? How close is his description of accommodation, or binocular vision to those of John Desaguliers (1683-1752), whom Taylor would have known? Desaguliers is cited as an advisor to Taylor (Wood, 1930; Wade 2008). He was an experimental assistant to Newton, popularizing Newton's optical views, and natural philosophy through published lectures (1716), as well as a Fellow of the Royal Society.

Using original sources, Taylor's published and unpublished works, and his correspondence with his contemporaries, we will explore such questions to evaluate Taylor's "pioneering" contributions within the proper context of his own time, and clarify his place in the broader history of ocular anatomy and vision.



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