THE CEREBELLUM HYPOTHESIS

Comments on and quotations from an introductory essay on cerebellar involvement in ME/CFS entitled
"The Cerebellum Synthesis : Chronic Fatigue Syndrome and the Cerebellum" written in 1997 by PR Celsus

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This lengthy introductory essay is by "PR Celsus" (**prcelsus@umich.edu**) of the University of Michigan. The name may possibly be a pseudonym as it does not appear on the University lists nor on PubMed. (Paracelsus (1493 - 1541) was a Swiss physician, alchemist and scientist who introduced laudanum for pain-killing purposes and whose insistence on the value of experimentation made him an important figure in early science).

The essay is an intriguing exploration both of the role of the cerebellum in the symptomatology of ME/CFS and, because of bias, the failure of modern medicine to heed the available evidence. The essay claims to be but the opening shot in a series of further essays and can be found at **http://www.personal.umich/edu/~prcelsus.cfs.html**

It serves as a salutary illumination that ME/CFS is not "chronic fatigue" nor anything other than a discrete neurological disorder that has regrettably become subsumed within the undifferentiated label of "chronic fatigue syndrome", and also that the symptoms which were so well-documented in the various epidemics are still occurring in ME, even though such symptoms are ignored by certain psychiatrists, their followers and those they advise (as well as by the policy parrots), all of whom have a significant vested interest in continuing to ignore those symptoms.

The prime purpose of the essay is to hasten the appreciation of both the cerebellum itself and of an atypical viral attack upon it by an agent that results in the simultaneous collapse of mind and muscle.

The main subject under dissection in the introductory essay is vertigo / dysequilibrium / dizziness as prime descriptors of ME/CFS but the author also mentions the role of the cerebellum in respiratory and cardiovascular control: "While the 'cerebellar hypothesis' may be new, there is nothing new about the plenitude of evidence supporting it. It is all a matter of bias".

The author points out that the clinical reports of (ME)CFS uniformly suggest (indeed emphasise) that the more overt cerebellar evidence is most evident early on: "This is not surprising, for the recognized 'plasticity' of the cerebellum would likely deprive the tertiary physician of the more obvious cerebellar clues. Here again, study of the epidemics is a crucial corrective to tertiary-level data-deprivation. To watch an etiology-poor modern medicine ignore (ME)CFS outbreaks is a source of some dismay and a matter of very great puzzlement".

The author starts by noting that some may find (ME)CFS a poor or even an odd choice as the

basis of a hypothesis that is unlikely to receive overly warm embraces, and rhetorically asks why the hypothesis emphasises the importance of a disease that much if not most of medicine does not even accept as a disease.

"That is the point. CFS is central to the history of 'modern medicine', for what (ME)CFS debunkers bring to bear as one of their 'big guns' is the perjorative 'Oh, CFS is nothing but "hysteria" and many seek to dispose of CFS as 'but depression'. Those who have concluded that (ME)CFS is 'but depression' do not believe that depression is organic. This is what might be called modern medicine's "dirty little secret" --- when the organic skew is too subtle, even 'biological psychiatry' has trouble believing, but it is lately trying hard to see the subtle and is now somewhat succeeding. Psychiatry is now on a train speeding back to the pre-Freudian organic bias (but) the rest of medicine is still following Freud's "insights" --- when 50% of the patients who come to organic medicine presenting organicity so subtle that organic medicine can neither find nor see it, something is needed (so when organic medicine fails) to find anything overt or at least standard, (patients are shunted off to psychiatrists). Odd, because we all now know that what we once believed was psychogenic -depression - is in fact subtly organic".

"The cerebellar hypothesis is freed of this outdated but apparently remarkably appealing bias".

"As at least some psychiatrists have complained, one reason psychiatry cannot figure out the cause of anything is remoteness from onset (but) as every epidemiologist (knows), much more informative are the natural insights of the epidemic outbreak, when the full range of variation of a disease is presented --- the broad variation in kind and the equally broad variation in severity, (but) this recorded epidemiology has never apparently been read by medicine".

"Kept firmly in mind should be the ultimate goal of medical research: the exposure of fundamental cause".

"Orthostatic hypotension has emerged as one of the few objective findings in (ME)CFS disease (but) neither the primary investigators nor the secondary speculators have thought to consider a cerebellar source. This is certainly unfortunate (in relation to) getting on with the job of solving a disease which is daily gutting many thousands of personal lives - lives which have to be lived while medicine dallies with the wrong biases. For the clear fact is that there is no better candidate for what is being found on the Johns Hopkins tilt tables than a dysfunctioning cerebellum --- the literature ---particularly that of Lutherer et al --- detail(s) the cerebellum's key role in the circuits controlling orthostatic response, hypertension / hypotension, baroreceptor reflex, cardiovascular response etc. Given the neglected evidence of cerebellar skew in (ME)CFS, these basic cerebellar facts take on clinical significance".

"Lack of fact is not the problem in modern medicine. The problem in medicine is quite clearly a conceptual one - the bias perspective".

Drawing on the work and findings of Cheney in the US and Snow in New Zealand, the author suggests that medicine needs to reverse its current bias about (ME)CFS.

"Cheney found 'vestibular or balance' problems as universal in (ME)CFS patients as gauged

by the Romberg and tandem stance tests, while Jonathan Rest noted that 'dizziness or vertigo' symptoms return when other (ME)CFS symptoms are flaring; in the Tallahassee (Florida) outbreak, Bond reported that 'unsteadiness or dizziness' was often complained of; Merry reported that 'dizziness and vertigo occur in up to 70% of patients with ME'; Komaroff (1993) reported that some 60% of patients complain of 'dizziness' and he subjected a group of patients to vestibular function testing in Harvard Medical School's Eye and Ear Infirmary, the conclusion being that there were central nervous system deficits; Furman (1991) noted that patients complain of dysequilibrium and that such symptoms could be objectively confirmed and substantiated with 'quantitative laboratory testing' ".

The author states that these results cry out 'cerebellar dysfunction' but that this failure on the part of (ME)CFS researchers to see what would seem an obvious possibility has a rational explanation: "firstly, not many in medicine have kept abreast of the newer cerebellar literature and secondly, specialists to whom (ME)CFS researchers must turn for balance testing typically have (their own) set of peculiar biases, one of which being that such specialists are over-quick to dispatch the unstraightforward patient over to their psychogenic bretheren in the talking side of psychiatry".

"In short, as Wallis to his dismay found at Dalston, with a disease like (ME)CFS, the reigning specialists are clearly much more likely to be a hindrance than a help. As Merry put it: 'we as doctors are ill-suited to coping with a condition which does not fit our neat pigeon-holes. We are in danger of tailoring conditions to fit our present views'. In late 19th century medicine, great physicians had quite a few interesting things to say about what we now call (ME)CFS (but) today's patients have no alternative but to deal with an apparently very different breed of physician. Eagger et al, working out of London's National Hospital for Neurology and Neurosurgery, noted in 1992 that 'Dysequilibrium is a common and disabling symptom often associated with psychiatric morbidity..complaints of dizziness and feeling of loss of balance are extremely common in psychiatric patients'. We see once again both the impressive durability of the psychogenic bias and the confounding contribution of the 'chicken and egg' reflex --- confronting the mixed-symptom balance patient, Eagger et al cannot see that something might be the in-common cause of both. The insights of the (ME)CFS epidemics, were they not ignored by medicine, would make it quite clear that a mixed-symptom virus does exist (and that it) attacks the cerebellum..the cerebellum is of course a key player in the vestibular system".

"For the search for cause, and thus for cure and prevention, medicine's linear symptoms-as-cause approach is an intellectual disaster. For the mixed-symptom patient, the disaster is personal. Bewildered by what has happened to them, pleading for help or, at least, an answer from a medicine they'd been told was 'modern', what do they find, even in the best and most specialized of Great Britain's 'organic' hospitals? The same thing they'll find in the best of America's 'organic' hospitals. Outdated, outmoded and indefensible psychogenicity. Eagger et al, expert neurologists, once again make this clear. For all the seemingly modern, even-handed enlightenment, in the end the "difficult" patient is sent off to the talkers".

"The problem of course, is that psychiatrists do not even, or at best only very, very rarely, perform full physical exams - or as psychiatrists complain to each other-- they do not even know how to if they would want to perform a competent physical examination. It may seem that Eagger et al are irresponsible at best and cruel at worst, shunting the pleading patient off to a place in medicine with such low organic competence that the patient won't even get a competent amateur, much less the deserved expert, examination of the possible physical

cause of the illness. But that's not the point. The point is that Eagger et al, trained rigorously and for years in the organic sources of disease, believe in the psychogenic. Eagger et al are not sending the patient over for an expert physical scrutiny, one to compete with their failed effort; they are sending the patient over to have the 'psychological problems resolved'. What is the problem with that? The problem is medicine's puzzling inability to find the cause of anything. So long as organic medicine, and biological psychiatry, continue to buy the idea that 'psychological' symptoms are not organically generated, neither will ever vigorously scrutinize the environment in search of an unsuspected environmental agent. Nor will they ever vigorously search the soma for the possible presence of a mixed-symptom generator".

"Talk will never find the cause of anything --- no psychiatric disease and, a fortiori, no somatic one. In the end, that is the price of the linear conceptual trap medicine has wandered into --- the price being unnecessary perpetuation of a medicine trying to practice without knowledge of cause, and a medicine bankrupting whole economies in the course of such a self-blinded effort. If all of a patient's symptoms are organic, then medicine, with evident relief shipping one half of these vital clues over to a speciality unequipped by either training or disposition to make any good use of them, is trying to solve puzzles after giving away a large portion of the pieces".

"Why is (the author of) the cerebellar hypothesis so confident in levelling these somewhat sharp criticisms? (The answer is because the author) has read the century's epidemic literature on (ME)CFS.

"In Salit's 1992 SPECT look at the (ME)CFS brain (60 patients), he found in the majority of (ME)CFS subjects abnormal readings in virtually all lobes of the cortex and the basal ganglia as well. Unfortunately, Salit did not include the cerebellum apart from using it only as a basepoint to establish normalizing ratios.

"Goldstein (1992) reported that PET scans showed low metabolic rates in the 'anterior cerebellum' of (ME)CFS patients. In the same report, he noted that alpha EEG disturbance is 'frequently found' in (ME)CFS patients and he also noted that 'Vertigo is another common symptom'. Given the cerebellum's association with both alpha EEG disturbance and vertigo, Goldstein might have speculated that, taken together, the findings implicate the cerebellum (but he missed) that opportunity".

"Goldstein noted another of the peculiarities of (ME)CFS, one which is "an extremely common, almost pathognomonic symptoms of (ME) chronic fatigue syndrome". This is "intolerance of alcohol". The cerebellum is of course a cardinal target of alcohol, and of alcohol damage. That (ME)CFS patients become intolerant to the administration of this chemical is more an expectance than a surprise. But (ME)CFS researchers cannot deduce the source of the intolerance".

"The Harvard brain-scanning group has published on their website the results of SPECT imaging of two (ME)CFS patients, In each, the several findings included cerebellar skew. In Case 1, the finding pertinent to the cerebellum was "extensive perfusion defects involving the left cerebellum". In Case 2, the finding pertinent to the cerebellum was "mild perfusion defect involving the left cerebellum". Nothing seems to have come of these findings".

The author then provides "some preliminary sense of how wrong medicine is on the phenomenon known as 'mass hysteria' and how crucial is a correct understanding of these

very important 'outbreaks'. McEvedy's attempt to recast the Royal Free epidemic as an obvious case of mass hysteria has been adverted to in other of these preliminary papers.. Many of the aspects which McEvedy cites as evidence that the Royal Free (outbreak) could not be a true (organically infectious) epidemic -- e.g. low or no fever; sudden attack; atypical symptoms - are found in letters to the Lancet describing the character of the parallel vertigo epidemic".

The author presents a factual and detailed deconstruction of McEvedy's mass hysteria thesis by comparing what McEvedy asserted (17 years retrospectively, from carefully selected case notes and without seeing a single patient) about the Royal Free outbreak of ME in 1955 with what he asserted about two other outbreaks of supposed mass hysteria - one at a school in Blackburn in 1965 and, in a simultaneous publication, what he asserted about another among schoolgirls in Portsmouth. The author of the essay states "Not only were these supposedly psychogenic cases obviously organic in nature - they are obviously also cerebellar in nature. What puzzled and mislead Freud is what puzzled and misled McEvedy and today still puzzles then misleads modern medicine - the peculiar presentation offered by a patient who is the victim of a virus with a proclivity for skew of the cerebellum. In 1894, Freud could only suggest that the unsuspected cerebellar skew must be psychogenic. McEvedy dutifully repeats the same error some 70 years later, and medicine dutifully repeats it now some 100 years later. What Freud saw and misinterpreted, and what his fellow psychogeneticists have been seeing and misinterpreting is, quite simply, patients with subtly organic cerebellar skew mediated by an atypically-attacking virus".

"If one is wondering how McEvedy could go so wrong, and how that wrongness could so influence medicine, an indication might be found via a simple date: Thursday, October 7, 1965. (That) is the date upon which the Blackburn school "mass hysteria" broke out (and it is also the very same) day upon which the Portsmouth school "mass hysteria" broke out. McEvedy duly reports the start date in each of his respective analyses of the outbreaks, but fails to advise the reader of either report that, somehow, precisely the same date of onset occurred in "mass hysteria" in schools some 200 miles apart".

"As Wray noted in the BMJ in the midst of the uproar over McEvedy's suggestion that the many nurses and doctors who fell ill at the Royal Free were just another pack of hysterics, medicine just cannot handle the (ME)CFS virus attack as a virus attack. "But" Wray adds, "when you follow an epidemic in the general community as I have, you can definitely rule out hysteria. Without knowing what happened at the school (ie. at Blackburn and at Portsmouth), parents have reported children suddenly vomiting in the middle of the night. The vomiting is so sudden and unexpected that I am convinced the virus affects the central nervous system, hence the variations of vertigo, collapse and meningeal symptoms" ".

"In McEvedy, we have on display a number of things most important to the cerebellar hypothesis (and) he makes clear the source of the mistakes which today's medicine continues to buy".

"Wray's suggestion that the (ME)CFS virus is a 'vertigo virus', along with other data cited from October 1965 (the virus's mediation of not only dizziness and vertigo, but shoulder and neck pain, centrally-mediated nausea, micturition problems etc) helps support the proposal that (ME)CFS is a viral / cerebellar condition, given that each and all of these dysfunctions can be traced to a skewed cerebellum".

While the author expresses repeated puzzlement over medicine's sustained purchase, which continues unbroken even today, of such aetiology-blocking nonsense as "mass hysteria", one answer does occur. "Detailed examination of Freud's cases (shows) that they collapse to any real scrutiny as quickly as do McEvedy's psychogenic epidemics --- back then, as McEvedy and fellow talkers of today, Freud was busily misdiagnosing a series of occultly-infected patients. Modern medicine is misdiagnosing as psychogenic the very same viral patients".

"As noted earlier, the cerebellum must always be a prime candidate in any disease in which mind and muscle collapse as a pair (or when mind and balance collapse as a pair). Now that the neglected cognitive role of the cerebellum is coming to the fore, it at last qualifies for what it is -- a true Janus-like organ. The subject of the simultaneous mind / muscle collapse in (ME)CFS is, as Cheney infers, important for both treatment and solution of the disease. The oddly-coupled simultaneous collapse of mind and muscle is an important addition to the already substantial evidence that, at bottom, (ME)CFS is a cerebellar disease. What McEvedy sees as the "positive" signs of hysteria (listed by him as convulsive episodes; glove and stocking anaesthesias; flaccid paralyses with preserved reflexes; paroxysms of hyperventilation and difficulty in micturition) will be shown, from the cerebellar literature old and new, to be consequences of a disturbed cerebellar system. Similarly, so-called 'classic stigmata' of hysteria (such as "globus" and "mutism" and "arc de cercle" or opisthotonus) not relied upon by McEvedy but crucial to hysteria theory will be shown to be equally the product of a damaged or skewed cerebellum".

"All of McEvedey's "positive" findings can be traced to the cerebellum. The only way to dispose of (his) misdiagnoses is to show the somewhat puzzling picture which arises when an atypical virus like the (ME)CFS agent skews a misunderstood organ such as the cerebellum".

Although written in 1997, the author's essay warrants careful consideration by all who claim to practice or rely upon evidence-based medicine.