We know most of Dudley William Carmalt Jones (1874–1957) through the efforts of Dr Brian Barraclough who happened upon a fragment in the Archives at Corpus Christi College, Oxford, from which he traced and reassembled Carmalt Jones’s entire 135,000 word autobiographical manuscript in the possession of Mrs P de Lavision, the author’s grand-daughter. The text is rich in detail because it is based on contemporary notebooks (but now evidently lost). With assistance from the family, this was eventually published as A physician in spite of himself (2009). (Unwisely, we declined a request from Dr Barraclough to review the book at the time of publication).

Carmalt Jones was a typical product of middle-class Victorian England: after public school, he first read Honour Moderations at Oxford University intending to become a school master. But sensing that a first class degree was beyond his reach, he changed to medicine taking his clinical studies at St Mary’s Hospital Medical School where, as at Oxford, he maintained an admiration for sportsman more able than himself since both institutions were more obviously impressed by rowing, Blues and International Caps than the muscle and nerve doctrines of Professor (Francis) Gotch (1853–1917) or J.S. (John Scott) Haldane’s (1860–1936) experimental work on respiration using an empty tobacco tin (Fig. 1). His advice to any London medical student was at all costs ‘to keep up his Rugby football’. Carmalt Jones was encouraged into investigative medicine at St Mary’s with (Sir) Almroth (Edward) Wright (1861–1947). Thereafter he was clinical assistant to (Sir George Frederic) Still (1868–1941) at Great Ormond Street and clinical clerk to (Sir William) Gowers (1845–1915) at the National Hospital, Queen Square, before appointment as House-Physician at that hospital. Admiring of the scientific authority of the staff and the simplicity of structured neurological examination which took a year to learn and a day to perform, Carmalt Jones lacked self-confidence—if this is first-rate work, I cannot do it.…I was never going to become a neurologist of Queen Square calibre’. There was a good social life with the consultant staff including walks at the weekends and rowing; and Carmalt Jones became close to (Sir Gordon) Holmes (1876–1965) with whom he lodged after resigning as House-Physician. As a man of private means who considered country practice in the Cotswolds, with 14 published papers on vaccine therapy by 1914, Carmalt Jones was increasingly well placed for appointment as a consultant physician in London. But the outbreak of war said ‘goodbye to all that’. He served throughout World War I, mainly in France and latterly in Egypt, reaching the rank of Colonel at demobilization (Fig. 2). As a Captain in the Royal Army Medical Corps at mobilization, Carmalt Jones went first to France as Medical Officer of the 2nd London Division, billeted at the Chateau du Compte d’Hinnisdal, before proceeding to Le Touret in order to manage casualties of the First Army. We learn through A physician in spite of himself that a chance meeting led to his transfer to Base Hospital, No 14 General Hospital, kitted out by the Red Cross as a hospital deluxe placed in the Hotel Splendide (officers) and Casino (ranks) at Wimereux, near Boulogne. Most of his work was routine bacteriology for enteric fever. On 1 January 1917 Carmalt Jones moved to work with his old friend Holmes serving the First and Second Armies in No 4 Stationary Hospital at Arques near St Omer (Figs 3 and 4) with Carmalt Jones in charge of that particular

“Shell-shock Centre”, a most unfortunate title, which had been established to deal with the many cases of functional nervous disease which were constantly occurring…some of the experience here was very satisfactory, and I have always regarded it as the most useful clinical work I ever did…I am not sure the authorities would have agreed with that opinion…I held strong views about the propriety of sending my cases back to the line, not on sentimental grounds, but on account of their probable value as troops, which once led to a personal visit of the Adjutant General to the Hospital…The hospital was a tented unit in the grounds of a chateau…there was plenty of space with a football ground and improvised golf course, a stream with a bathing pool and a spring board, and the thing functioned pretty well as a convalescent camp’.

The chateau adjoined the owner’s brewery: ‘the mixed Mess included English, Scotch, Welsh, Canadian, Australian and American medical officers, and we also had padres of at least three denominations’ who told long-winded stories adding to the jocularity so that a merry time was had by all. Before leaving St Omer, Carmalt Jones went to the front ‘in an attempt to keep cases in army areas’. After several short-term stations, he spent the winter of 1917–18 back at Wimereux where ‘I wrote up my experiences at No 4, which were published after the war in Brain (a journal of Neurology), under the title of “War Neurasthenia, Acute and Chronic”’.
Dr Carmalt Jones writes of ‘a state of fatigue of the central nervous system, without organic change, manifested by asthenia, loss of physical and emotional control and disturbance of visceral functions’. The article has not been revised since 1917 at which time he had no access to references. Cases are personally examined in a tent ‘dedicated for the purpose’ within 2–3 days of onset, using a standard procedure that records demographic details, an assessment of ‘personal nerve’ and ‘previous strain’ (broadly, character and courage and any earlier stresses), the event that precipitated ‘the shock’, symptoms, and physical signs once the soldier has been stripped naked for examination. Abnormalities are classified as positive or negative: that is, for example, pain or anaesthesia when considering the sensory system; spasticity or paralysis with respect to motor function; and with a similar approach to splanchnic features. Patients are returned to the front within 1 month or sent to a base hospital if considered not fit for active service, after which Dr Carmalt Jones has no further contact or medical information on which to base his conclusions. His aim is to explain the physical not the psychical basis for ‘war-neurasthenia’. All cases are admitted with the diagnosis ‘NYD,N’ (not yet diagnosed, ?nervous). Those in whom the condition may have resulted from up to 2 years experience of war are classified as ‘Chronic War-Neurasthenia’; the acute cases, attributable to a specific and recent event, often ‘have superadded to it hysterical symptoms such as mutism and paralysis...[and are]...easily treated, although great sources of distress as long as they persist’. The ‘ill-advised but now established term’ shell-shock may occur with neurasthenia, ‘or may form its starting point...[but] I prefer to regard it as Acute War-Neurasthenia’. Of the 4700 cases attending the centre, 1300 examined in most detail by Dr Carmalt Jones form the basis for statistical analysis; of these, 612 are acute, 334 chronic and 354 have a definable organic disease such as bronchitis or rheumatism. But of organic disease of the nervous system, there is precious little. Simply stated, if the word ‘nerve’ expresses a personality with the facility to resist emotional strain, ‘neurasthenia’ or ‘weakness of nerve’ defines the condition found when that capacity is exhausted. For Dr Carmalt Jones, any derogatory implications of the diagnosis are to be resisted for ‘neurasthenia honestly acquired on service’. The aetiology is not mysterious. War-neurasthenia represents yielding to physical and emotional strain. Extreme youth is a predisposing factor. Those who have worked underground in civilian life may be less at risk. Paradoxically, soldiers who consider themselves to have ‘nerve’ are slightly over-represented amongst cases.
Since duration of exposure is not a discriminating factor, risk depends more on a man’s individual qualities than his circumstances, ‘heredity being more relevant than environment’. The type known to neurologists as ‘degenerate’—narrow palate, crowded teeth, simian hand and coarse skin—is at special risk: ‘I have come to regard a narrow palate as indicating a bad prognosis’.

Now Dr Carmalt Jones describes 12 cases each of chronic and of acute war-neurasthenia. Case 1, described as a fine soldier: ‘Sergeant H, aged 22; two years in France. Previous nerve good, played football for battalion, boxer; has done very well, done everything, lasted through Somme, wounded, promoted Sergeant, DCM. Suffering from general strain, no special explosion. For three months bad sleep, loss of concentration, worrying, losing flesh, irritable, avoids society, nothing to say, emotional, loss of self-confidence, formerly fond of risk’. Conversely, Case 12 is considered a military misfit: ‘Gunner M, aged 23; three months in France. Nerve poor. No good on guns, upset by own fire; no shock, reported sick with nerves and loss of sleep’. Of the 12 acute cases that differ only in rate of onset, Case 19: ‘Knocked out by trench mortar shell, unconscious more than an hour; later, mute for three days, stammering for two days’; and Case 24: ‘Knocked out, unconscious a short time, buried, could not walk; trembling and emotional’.

The exciting causes are therefore physical fatigue, physical violence and emotional strain. Although three deaths have occurred from intercurrent illness, and post-mortem examinations are made, and despite previous reports of punctate cerebral haemorrhages in cases of shell-shock, Dr Carmalt Jones considers that ‘judged by the old-fashioned standard of the reflexes the condition is one of functional disease… in which all nerve cells and fibres are intact’. The demeanour of the patient is apathetic, reticent, emotional, tremulous and easily startled. Most complain of headache, dizziness, pain and paraesthesia, disturbed sleep, and altered digestion, bowel habit and micturition; the reflexes are brisk and the pupils dilated. Coordination is impaired with apparent tremor, loss of proprioception and altered balance. Dr Carmalt Jones has erroneously diagnosed tabes dorsalis in one case who then promptly made a complete recovery. There are disorders of vision: blurring and scintillating coloured specks; diplopia often with convergence spasm; and lack of eye contact. Deafness, deaf-mutism and tinnitus are common, improving with re-education using ‘bells, stethoscope and so on’. Stammering is frequent and there is a type of speech disturbance strongly suggestive of war-neurasthenia: low-pitched, slow and monotonous, with spaced syllables and full of gloom: ‘I-don’t-feel-much-bet-ter-this-morn-ing’ is typical parlance. Sometimes this is more severe and results in mutism, aphonia with whispered speech, and, rarely, aphasia. These cases are easily cured ‘except at the end of a heavy day’s work when I was fatigued and irritable and became obliged to give up… because I found myself losing my temper’. If failure is once made, the difficulty of ultimate success is much increased. Contraction, spasm and tics are rare; weakness and paralysis much more frequently observed. Almost by definition, there are no physical signs. Hysteria is a complication not the primary disorder and obviously present when there is anaesthesia, stupor or fits: Case 28, ‘Rifleman N, admitted unconscious, gesticulating wildly and talking gibberish. Under strong faradization recovered consciousness gradually, was induced to stand, answered his name,
gave name and unit, and wrote his address, reversing several letters’. Treatment is symptomatic for the headache and pain; therapeutic lumbar puncture is often successful even when the theca has not been pierced. Recovery may be interrupted by recurrences of diminishing frequency and duration, with reluctance to admit improvement until the day comes when ‘a man stands up perfectly straight, clicks his heels and salutes smartly, and when asked how he is replies, “I feel champion, Sir”’.

The visceral symptoms are no different in kind from those affecting somatic functions: dizziness, praecordial pain and palpitation with tachycardia; dyspnoea and tachypnoea; cold cyanosed extremities; dribbling and salivation; thirst with anorexia and constipation or diarrhoea; nocturnal frequency of micturition or, in others, retention of urine; and premature greying of the hair and baldness. Symptoms that Dr Carmalt Jones considers to be psychical include lack of concentration; inability to read because the words mean nothing; incapacity to write because of thought-block; loss of emotional control with crying, outbursts and impulses to murder and suicide (although no such events have occurred); and hallucinations and bad dreams that contribute to the almost universal disorder of sleep. Some soldiers experience loss of memory. Lance-Corporal D, aged 20, is admitted on 14 March 1917 but can remember nothing since playing cricket in 1914. He has heard of Kitchener’s army, but does not know that the General is dead; and is surprised to be told he is in France. Over the next 5 days he gradually recalls enlistment but not being fit for service in Gallipoli because of his nerves, subsequent arrival in Calais with a friend being killed by an explosion, and other injuries from bombings. Private N, admitted on 13 March 1917 in a semi-stuporose state having been in this condition for 2 weeks, remembers saying goodbye to his wife and child, and being a collier employed in an Admiralty pit but with no knowledge of France; with no subsequent signs of recovery, he is moved to a base hospital.

In diagnosing these cases, Dr Carmalt Jones needs to consider organic disease of the nervous system [present in 5% of cases: consequences of trauma, disseminated sclerosis, tabes dorsalis, peripheral nerve injury or generalized neuropathy, meningitis, dementia praecox (schizophrenia) and dementia paralytica]. Some develop intercurrent illness, mainly trench fever. Although rare, others are malingering but most exaggerate and ‘work [their symptoms] for a good deal more than they are worth’. Many merely dislike military service but this is not war-neurasthenia for there has been no exposure and the fault lies as much with the battalion medical officer who has colluded with the complaint and allowed the man to be removed from the line, a sequence likely to be repeated until the soldier is declared unfit for further service and needing to be dealt with by the officer commanding that unit.

Figure 3 Photograph showing ‘Tented hospital’ stamped ‘4th Stationary Hospital. Date: 31.7.15’. Provided by courtesy of National Archives: from A physician in spite of himself (2009).
The general approach to treatment is to emphasize that there is no illness or wound; rather that the soldier is strained and exhausted and that with rest and graduated exercises recovery will occur. A few days in bed is recommended for the more severe cases with bromide of potassium to improve sleep, but this must not be too prolonged lest the impression of invalidism is maintained since many patients have clearly ‘thrown down their cards’. There follows a daily sick-parade at the medical officer’s tent with graded light fatigues, physical drill, route marches and working parties. In order to make it clear that return to the line is the rule, the centres are cited close to the battlefront and therefore the preferred option of avoiding exposure to the noise of shells and bombs is hard to achieve even if undesirable in terms of re-enforcing the precipitating causes. Placing units too close to home, at the coast of France with the cliffs of England visible, wrongly encourages the belief that evacuation and return to domestic life are possible. Discipline with firm encouragement is preferred whereas harshness and severity are counter-productive. Despite lacking concentration, men want and should be encouraged to ply their skilled trades—carpentry, sign-writing and gardening. Participation is better than watching; concerts and cinema entertainments are not useful, inducing headaches and with men often leaving before the end of the performances. Of hypnotism, Dr Carmalt Jones has no experience although he has heard that this may have a role in hysterical cases. As for suggestion, his view is that their depressed state makes soldiers with war-neurasthenia more likely to misinterpret remarks and fuel their low mood. They do not respond to shrouding recovery in some magic force; rather they get better through their own abilities and encouragement. For Dr Carmalt Jones ‘you think you cannot walk, follow my instructions; observe you are walking’ is preferable to ‘you think you cannot walk, but now I put it into your head that you can’. His principle is to show that functions are intact by awareness of or response to physical or electrical stimuli, and encouraging graded responses, rather than through the use of drugs and hypnotism. This applies especially to loss of speech and limb paralysis. Although different approaches are taken to each symptom, ‘the essential...for the whole condition is initial rest, graduated exercise and occupation’.

On prognosis, he writes somewhat obliquely: ‘the competition between various centres and rival methods of treatment for the return of patients to their units is a most vicious procedure in the treatment of functional disease, where there is no visible lesion, and the symptoms are so largely subjective’. As for Dr Carmalt Jones’s cases, the proportions of acute war-neurasthenia returning to regular or light duty are 50% and 34%, respectively, compared with 20% and 42% of those that are deemed chronic. That said, recurrence is not unusual: ‘you cannot treat a man so well that you can guarantee him against relapse, but you can very easily send him up in an unfit condition...nobody’s judgment is perfect...but with the existing demand for men in the combatant units, it has been the duty of medical officers to risk error rather in
the direction of sending up possibly unfit men than in that of losing possibly fit men to their units'.

With so much experience, Dr Carmalt Jones has formed an opinion on the physiological basis of functional nervous disease. He starts from the premise that in animals fear induces a rise in blood sugar in order to assist muscular effort involved in flight or fight. He understands that this involves an adrenal response under control of the sympathetic nervous system. Having no apparatus with which to investigate the matter, he is helped by a visit from Major (George Washington) Crile (1864–1943) of the USMORC (United States Medical Officer Reserve Corps). Although not wishing to impose his views on Major Crile, and dismissing them as mere conjectures unsupported by experiment, Dr Carmalt Jones proposes that the nervous system is the organ of adaption to the environment dependent on sensation and action, each modulated by emotion, reason and memory. In the context of shell-fire, the reflex response of the soldier is to escape but instinct and emotion may not allow the muscular movements necessary to discharge such action to take place. Major Crile’s contribution is to point out that the connection between sensation and action in the brain requires secretions from one of the ductless glands, especially the adrenal. The hypothesis is supported by occasional examples of hyperglycaemia and glycosuria in soldiers with war-neurasthenia and the excessive secretions of saliva and tears that Dr Carmalt Jones has observed. Here the physiological process involved in integrating the reflex response to withdraw from the instinct not to do so, fails to inhibit activity of the ductless glands and it is this activity that eventually results in the exhaustion, fatigue, loss of control and visceral disturbances of war-neurasthenia—the products of the ductless glands not having been metabolized by the actions they were intended to facilitate. Indeed, the symptoms of war-neurasthenia are strikingly similar to the pharmacological effects of adrenaline described by (Ernest) Starling (1866–1927).

What has Dr Carmalt Jones learned in his tent in France remote from contact with other medical opinions other than visits from Lieutenant-Colonel Holmes and Major Crile; and are his views in line with those being developed by Temporary Captain E.D. Adrian (1889–1977) of the Royal Army Medical Corps, neurologist to the Connaught Hospital, Aldershot and Dr L.R. (Lewis) Yealland (1884–1954) Resident Medical Officer at the National Hospital, Queen Square? His attitude is noticeably sympathetic and he defies anyone to spend time with these cases and not be convinced of their reality, severity and amenability to treatment. ‘What the nature of the change in the ductless glands, if any, may be I have no idea’ but recovery is prolonged and, despite his instruction to get men back to the front line, Dr Carmalt Jones considers that many so affected will not be fit for soldiering within the time limit of the war, especially those who relapse on return. ‘I would put in a plea for a sympathetic and intelligent grasp of the problem on the part of the authorities’. Much hinges on the ability of the battalion medical officers some of whom have knowledge of nervous disease and seem to send down far fewer cases of shell-shock and neurasthenia—recognizing that those who ‘dislike military service’ are not ill—and using their judgement to reduce exposure of those who are getting shaky thus saving them from developing the full set of symptoms. The referral centres need to be staffed by doctors who understand this condition and are able to deal with the scale of the problem. Allowed to drift, these patients with tremors and stammers move from a condition that is curable at first, but if not well treated soon becomes intractable and a serious disability on return to civilian life. ‘My plea is for men whose disabilities are as real and ... as credible as any wound, and for work which can only be undertaken by men properly educated, work which is tedious and exhausting, but which is of serious national importance, and which gives results’.

On demobilization, and although he writes as ‘Physician to Westminster Hospital’ Carmalt Jones took the view that he had no prospects of a London practice and, on the advice of Sir William Osler (1849–1919) he applied successfully for the Mary Glendining Professorship of Systematic Medicine in the University of Otago, New Zealand, which he held from 1919–39, remaining in Dunedin until 1947 when he returned to England to live with his daughter in Edgware. This was a man who Brian Barraclough recalls as ‘a shadowy presence in the history of my medical school’ and whose photo on the students Common Room wall showed ‘a balding, bespectacled and benign but not very striking face’. A physician in spite of himself and the paper in Brain reveal a man both shy and lacking in confidence, certainly without ‘nerve’, who found his life-long professional work stimulated by the experience of helping others to overcome the physical and emotional traumas of war. May we ask with which alumnus of the National Hospital would the average Tommy rather have found himself before being returned to the front line: Lewis Yealland, E.D. Adrian or Dudley Carmalt Jones?

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