

Although a disarmingly simple procedure, proponents acknowledged that it was important that percussion treatment was initially carried out within a hospital ward. As a rehabilitation physician at Roehampton remarked in the 1950s, the rationale of percussion treatment had to be explained to the patient, since 'some are inclined to be a little intimidated by the prospect of their painful stumps being assaulted by what at first appears to them to be a somewhat violent procedure'.<sup>75</sup>

Russell reported that Hopkinson had benefited from percussion treatment when he had been admitted to Queen Mary's Hospital at Roehampton. While in the ward, Hopkinson experienced 'much less sensitivity in the stump than before, and has had no severe bouts of pain since leaving'. However, Russell warned that there was a serious danger of a relapse, since Hopkinson had subsequently 'discontinued trying to treat himself'. The fact that he had been 'supplied with an applicator but no mallet' was not encouraging. Russell recommended that Hopkinson should be urged to 'persevere with self-administered percussion treatment', even though he would have to buy the mallet with his own money.<sup>76</sup> Indeed, R.D. Langdale Kelham (who had concluded his study of 200 men with phantom limb pain at Roehampton three years earlier) had someone remarkably similar to Hopkinson in mind when he attempted to explain the high relapse rate in phantom pains after the amputees left the hospital. Although percussion treatment had been effective in the wards, Kelham observed, a follow-up study revealed that only 30 per cent had been able to control their pain at home. Kelham ascribed this high relapse rate to the fact that:

Such cases often have unstable personalities, are often paranoid in type, their experiences in the past have been discouraging and have only served to strengthen the conviction that they have something seriously wrong in their stumps and that nothing can be done to help them. They do not view new methods of treatment with any optimism and their whole attitude becomes negative and defeatist ... As soon as they are removed from the influence of in-patient conditions with its constant encouragement, they were foredoomed to relapse, because, like some of the initial failures, they were unsuitable material in the first place.<sup>77</sup>

Whether Hopkinson's problem could be blamed on his physiology or psyche, percussion treatment eventually failed. Five years after his consultation with Russell, a medical report concluded that mallet and peg treatment had 'little lasting effect' on his stump pain.<sup>78</sup> Although

he reported that the *electric* vibrator version of the mallet and wooden applicator did help relieve some pain, his physicians were increasingly frustrated by their inability to completely alleviate it. Comments on his poor psychological adaptation began appearing more frequently. In 1958, for example, a medical report stated that Hopkinson was still experiencing a 'jumpy stump ... Finds holding it helps ... psychopathic personality'. He quoted Hopkinson as saying 'I am frightened of the pain. I do not mind making scenes'.<sup>79</sup> Or, as another doctor noted a month later, Hopkinson 'probably does get pain', but it was '100% aggravated by his poor mental adaptation & aggravated by low pain tolerance'. In an exasperated tone, he concluded: 'One wonders whether if it is worth bothering with him but ... he is firmly convinced that vibrators do help him – even if it is a mental placebo.'<sup>80</sup> This was the kind of cynical 'complacency' that the great pain surgeon René Leriche might have been alluding to when, in 1939, he wrote about the 'rather bizarre geography of subjective symptoms' that men with painful stumps described. 'As is usually the case when we fail to understand anything', he thoughtfully concluded, 'we ascribe an important part to imagination and emotion.'<sup>81</sup>

### Ageing amputee

Hopkinson's predicament was representative of a wider trend in British society after the Second World War. All the physicians who treated him were aware that Hopkinson was part of a much bigger problem associated with 'elderly amputees'. In 1953, it was estimated that there were nearly 24,000 men (and one woman) in Britain who had lost one or more limbs as a result of war injuries that had occurred during the First World War or before.<sup>82</sup> Amputees from the First World War were now elderly and the newly established National Health Service was struggling to deal with them.

Awareness of this crisis led Donald Stewart McKenzie – who had examined Hopkinson in the 1940s – to conduct research on this constituency of disabled men. It was eventually published as 'The Elderly Amputee' in 1953. McKenzie began by noting that techniques for rehabilitating amputees had 'evolved primarily in relation to active ex-Service men' – in other words, they had been devised to restore young, fit men. What physicians and pension authorities were facing by the 1950s, though, was a more 'enfeebled' set of patients for whom previous approaches simply could not be applied. McKenzie placed some of the blame for the lack of progress with this new generation of elderly amputees on 'unwarranted optimism'. Patients had been taught to *expect* that they

would be able to walk with a prosthesis 'without effort' and were consequently demoralised when faced with the magnitude of the challenges facing them.<sup>83</sup> More importantly, however, McKenzie emphasised the importance of 'environment'. In his words:

We not infrequently see patients who have made good progress and who are discharged from the walking school able to control their prosthesis and to look after themselves fairly well. Yet when we see them on follow-up we find they have hardly worn the prosthesis, and the musculature has lost tone to the extent that they can no longer control it. Inquiry reveals that they live alone, perhaps in an upstairs flat, or it may be that they simply lacked the incentive to make the effort to persevere.<sup>84</sup>

McKenzie's description closely matched Hopkinson's circumstances. After all, Hopkinson had been able to control his pain effectively using the 'percussion' method while in hospital, but lapsed when he returned home. He was never able to wear an artificial limb. By the time McKenzie was writing, Hopkinson perfectly fitted McKenzie's profile of the 'elderly amputee' who complained of chronic stump and phantom pain, shell shock and was reaching an age when he was finding it difficult to clean himself and his flat.<sup>85</sup>

However, two final attempts were made to treat Hopkinson's stump pain. On 17 October 1956, Leon Gillis, the limb expert who had published his highly influential book *Amputations* two years earlier, took on Hopkinson's case. In *Amputations*, Gillis had warned that:

Pain is a symptom, and however important it is to the patient to be given relief from his pain, it is more important still that the cause of a painful stump should be accurately determined before any treatment is started.

Gillis strongly believed that treatment needed to encompass 'psychological as well as physiological factors' and while he conceded that the 'psychological element may play an insignificant part ... on the other hand it may be the sole cause of the pain', particularly in 'a world which is fraught with economic crises, social maladjustment, anxiety, and fear'. These external influences acted as 'powerful factor[s] in increasing the perception' of stump pain.<sup>86</sup>

Gillis immediately observed that there was an emotional element to Hopkinson's suffering. He reported that Hopkinson 'thinks the pain is

affected by change in weather and also “when he gets annoyed”. The only way forward was to get a full range of pain and limb specialists together to investigate what had been going wrong for 39 years. In October 1956, Gillis enlisted the help of the Painful Stump Panel.<sup>87</sup>

Hopkinson was admitted to Queen Mary’s Hospital where he was to remain for a month. In the Panel’s report, they observed that Hopkinson was a ‘big man’ with a very short stump. An x-ray of his stump showed ‘some bony spurs’, often believed to cause pain. Each of the specialists gave their diagnosis and each responded predictably according to their specialism. Psychiatrist Guy Randall, who had co-authored an article entitled ‘Psychiatric Reactions to Amputation’ (1945), believed that ‘there was a considerable psychiatric factor in this case’. He noted a ‘family background of instability’ and claimed that Hopkinson’s irregular employment record reflected ‘personal instability’. The only solutions, Randall claimed, were ‘sedative therapies, e.g., Equanil, Largactil or Phenergan alone or with barbiturates’ since there was ‘little or no chance of altering his personality or reaction type’.<sup>88</sup> Consultant neurologist Dr Aldren Turner recommended that Hopkinson return to percussion treatment, supplemented with analgesics ‘during severe attacks’, while consultant orthopaedic surgeon Mr Harding ‘wondered whether his prostatectomy in 1951 may have been related’. The summary ended by noting that Hopkinson had undergone percussion therapy and was taking the mild tranquilisers Equanil (meprobamate) and Sonalgin, which contained the sedative butobarbitone and was advertised as being ‘valuable for the relief of nervous tension’.<sup>89</sup> The medication seemed to work. The Panel reported that Hopkinson ‘now feels able to cope with life again and requests discharge’.<sup>90</sup>

Clearly, the 1956 prognosis was optimistic: within two years, Hopkinson was yet again experiencing severe pain in his stump and had serious mobility problems.<sup>91</sup> In March 1964, Dr Ian H.M. Curwen, Consultant on Physical Medicine, took over Hopkinson’s case. Curwen reported that 75-year-old Hopkinson ‘experiences pain for one or two days about every four weeks ... He says that his prostate has been “partly removed” ... the whole of his spine moved poorly and he probably has gross spondylosis’, or degenerative osteoarthritis.<sup>92</sup>

Once again, Hopkinson was admitted into the rehabilitation ward in Roehampton. This time, a different peripheralist treatment was tried. Between 22 April and 11 May 1964, Lignocaine (a common anaesthetic, otherwise known as Lidocaine and Xylocaine) was injected into his stump daily. The medical record observed that: ‘Immediately following injection he felt a pleasant warm sensation in the stump. Nocturnal

discomfort in the stump was reduced and he had one incident only of stump pain during his two weeks' admission. This was less severe than usual and lasted only a few hours.<sup>93</sup> In July 1964, Hopkinson was still improving. He 'gets a little stump pain [but] never severe. Minutes only now and never hours. Has less "rawness" in his short phantom'. The injections seemed to be effective.<sup>94</sup>

The reason for the success of Xylocaine injections was disputed. Hopkinson's former doctor – W. Richie Russell, the percussion specialist – explained that when dealing with patients with intractable pain, it was not necessary to know precisely *why* a certain treatment worked, so long as it did. He reminded his fellow doctors that it made 'no sense saying that one pain is functional and one organic' because 'all pains are both physiologically determined and functionally graded according to a wide variety of personal factors'. Even when the pain was largely the result of emotional factors, physical treatments might work. In the case of percussion treatment, if the 'discharging neuro-mata' were 'inactivated', the patient would report some alleviation of his pain even though emotional responses meant that the pain would never be totally eradicated. Similarly, Russell continued, Xylocaine injections given into the 'anatomical area concerned in some way with a chronic pain' might help to break the 'vicious cycle' by providing temporary relief. In this way, the local anaesthetic would have a 'curative as well as a diagnostic value'. This was why he was even willing to endorse 'old methods of treating pain with electricity' (that is, the galvanism treatment Hopkinson received in 1949) since, at the very least, it would provide 'a physiological distraction' that might actually reduce suffering. As Russell wittily contended at the very end of his paper: 'I would suggest that the successful therapist for intractable pain treats the problem like a game in which he endeavours to outmanoeuvre the tricks played by the C.N.S. [central nervous system] of his patient.' The therapist:

had many different moves he can play. Some depend on simple procedures which checkmate the mechanisms, but others are assisted by the deception of the poker player and the confidence of the quack. I may add that my colleagues ... think that I am too optimistic about the results of treatment, but I think it important to be over-confident in treating pain, so I make no apology.<sup>95</sup>

Russell believed in the power of mind over the body: the problem in Hopkinson's case was that he was too disillusioned and too disenchanted

to believe in any positive outcome, let alone the intentions of physicians working for any governmental ministry.

It took another three years before the Medical Board finally accepted what Hopkinson had been telling them all along. At the age of 84 and 56 years after he had been wounded in the war, they accepted that he really was 100 per cent disabled. He was judged to be 80 per cent disabled because of his amputated leg, 6–14 per cent disabled due to the injury to his left elbow and 10 per cent disabled because of ‘foreign bodies’ (that is, bomb fragments) in his left shoulder, knuckles and wrist, the presence of which his physicians had always denied. They also reported that he had a head injury, osteoarthritis in his right wrist and thumb, and ‘callosity’ in the palm of his hand due, no doubt, to more than half a century on crutches.<sup>96</sup> He was offered physiotherapy.<sup>97</sup> A report by the Ministry of Social Security on 28 January 1974 noted that Hopkinson was ‘depressed at times from pain’ and he was experiencing ‘*Severe phantom pains by day with stabs of stump pain*’. After a ‘friend’ from the British Limbless Ex-Service Men’s Association offered to take him to Brighton for a holiday if the Ministry would pay the cost of petrol,<sup>98</sup> Hopkinson pleaded with the Welfare Officer to allow him to go because ‘I am tired of sitting alone in my Bedroom ... except for 2 hours outing on Sundays & it is bad for my morale’.<sup>99</sup> Hopkinson died on 17 December 1974. He was 85 years of age and had lived for 57 years with war injuries. Under cause of death, the death certificate recorded: ‘SENILITY, MYOCARDIAL DEGENERATION AND FAILURE.’

## Conclusion

From the age of 28 until the age of 85, Frank Hopkinson had lived in almost constant pain. One of his doctors had reported that he:

gets a lot of twitching & jumping in the stump – like electric shocks – makes him shout & gets a temperature. Comes on at irregular times – about 4 times a year – often with a change in the weather – or if he goes to stay with a friend. Emotional – cries if he hears a hymn or if he can’t get a seat in a bus. Very irritable; cannot concentrate; unreliable. Sleep good. Single. Has tried to get a job, but always turned down.<sup>100</sup>

Although Hopkinson’s symptoms changed relatively little throughout his life, his sufferings cannot be summarised under any single headings. His pain was acute, chronic, physiological, psychological and

emotional; it gripped him within hospital wards and when he was 'sitting alone in my Bedroom'. He struggled to distinguish the experience of pain from the pain of experience. On the surface, he should have been able to elicit sympathy: he was a white male who had been born into a privileged family and had served as an officer in war. In fact, his class status was a further cause for agony. As one doctor reported: 'The officer is a man of sensitive temperament and a loss of his leg affects him more than one of coarser fibre. He ... hates people looking at him and sympathizing with him.'<sup>101</sup> Those physicians who witnessed his pain often attempted to sympathise and provide succour, but their inability to solve his crises eventually led each of them to turn away – sometimes in despair, at other times in annoyance. The invisibility of his wound – his stump seemed to be 'normal' and the limb that burned like fire did not exist – trumped all scientific theorising. Theories about physiological pain pathways, psychiatric pathologies, constitutional inheritances, psychosomatic symptoms and even 'old womanish' sensitivities failed to ease suffering that was anything but 'phantom'.

## Notes

1. I am immensely grateful to the Wellcome Trust for its generous financial support in setting up the Birkbeck Pain Project (BPP). The research would not have been possible without the intellectual support and inspiration of my two colleagues in the BPP, Dr Louise Hide and Dr Carmen Mangion.
2. Filippo de Vivo, 'Prospect or Refuge? Microhistory, History on the Large Scale. A Response', *Cultural and Social History*, 7(3) (2010): 387. For good introductions, see Peter Burke, *New Perspectives in History Writing* (University Park: Pennsylvania University Press, 1991); and C. Ginzburg, 'Microhistory: Two or Three Things I Know About it', *Critical Inquiry*, 201 (1993): 10–35.
3. Seth Koven, 'Remembering and Dismemberment: Crippled Children, Wounded Soldiers, and the Great War in Great Britain', *American Historical Review*, 99(4) (1994): 1169.
4. Interview of Giles and Ben Hopkinson, 6 November 2012.
5. 'Report of Medical Board', National Archives WO 339/12060 (P1030322) and 'Special Hospitals for Officers', 7 March 1924, National Archives, PIN 26/21799.
6. Medical reports, National Archives, PIN 26/21799 Part 2 (P1040118–P1040119).
7. Letter from Hopkinson, 4 December 1918, National Archives WO 339/12060.
8. E. Muirhead Little, *Artificial Limbs and Amputation Stumps. A Practical Handbook* (London: H.K. Lewis and Co., 1922), 23. The percentage was 73 per cent. For a longer discussion of war wounds, see Joanna Bourke, *Dismembering the Male: Men's Bodies, Britain, and the Great War* (London: Reaktion, 1996).
9. Muirhead Little, *Artificial Limbs*, 24.

10. A.W.J. Craft, 'Amputations, Limb Fitting, and Artificial Limbs. Lecture Delivered at the Royal College of Surgeons of England on 11th April, 1949', *Annals of the Royal College of Surgeons of England*, 5(3) (1949): 194. See also P. Jenner Verrall, 'President's Address. Some Amputation Problems', *Proceedings of the Royal Society of Medicine*, 24(2) (1930): 183.
11. 'Proceedings of a Medical Board... Lieut. F. Hopkinson' (14 October 1918), National Archives, PIN 26/21799.
12. See R.D. Langdale Kelham, *Artificial Limbs in the Rehabilitation of the Disabled* (London: Her Majesty's Stationery Office, 1957), 82; Atha Thomas and Chester C. Haddan, *Amputation Prosthesis. Anatomic and Physiologic Considerations, with Principles of Alignment and Fitting Designed for the Surgeon and Limb Manufacturer* (Philadelphia: J.B. Lippincott Company, 1945), 115; 'The Weight of Limbs: Natural and Artificial Limbs Compared', *British Medical Journal* (24 August 1918), 202. See also Jensen J. Steen and T. Mandrup-Poulsen, 'Success Rate of Prosthetic Fitting after Major Amputations of the Lower Limb', *Prosthetics and Orthotics International*, 7 (1983): 119–21; and D.G. Shaw, T.M. Cook, J.A. Buckwalter and R.R. Cooper, 'Hip Disarticulation: A Prosthetic Follow-Up', *Prosthetics and Orthotics International*, 37 (1983): 50–7.
13. 'Forthcoming Marriages', *The Times*, 15 January 1919, 11; and 'Forthcoming Marriage', *The Times*, 20 November 1928, 19.
14. Interview with Giles and Ben Hopkinson, 6 November 2012.
15. Letter from Hopkinson to the Minister of Pensions, 1 January 1919, National Archives, PIN 26/21799, emphasis in original.
16. 'Special Hospitals for Officers', 7 March 1924, National Archives, PIN 26/21799 and Report in National Archives PIN 26/21799 part 2 (P1040144). See also the report dated 12 August 1917, National Archives PIN 26/21799 part 2 (P1040144).
17. 'Medical Care Sheet', National Archives PIN 26/21799 part 2 (P1040121-P1040122).
18. *Ibid.* He was dismissed from Palace Green on 19 February 1918.
19. Ambrose Paré, quoted in Thomas Johnson, *The Works of that Famous Chirurgion, Ambrose Parey [sic], Translated Out of Latine [sic] and Compared with the French* (London: n.p., 1649). See also Ambrose Paré, *Oeuvres Complètes* (ed. J.F. Malgaigne), vol. 2 (Paris: 1840), 221–31.
20. S. Weir Mitchell, *Injuries of Nerves and their Consequences* (Philadelphia: J.B. Lippincott and Co., 1872), 348.
21. Lieutenant Colonel Guy C. Randall, Jack R. Ewalt and Lieutenant Colonel Harry Blair, 'Psychiatric Reactions to Amputation', *Journal of the American Medical Association*, 128(9) (1945): 645–52.
22. See W.R. Henderson and G.E. Smyth, 'Phantom Limbs', *Journal of Neurology, Neurosurgery, and Psychiatry*, 11 (1948): 89–92; and Bertram Feinstein, James C. Luce and John N.K. Langton, 'The Influence of Phantom Limbs', in Paul E. Klopsteg and Philip D. Wilson (eds), *Human Limbs and their Substitutes. Presenting Results of Engineering and Medical Studies of the Human Extremities and Application of Data to the Design and Fitting of Artificial Limbs and to the Care and Training of Amputees* (New York: McGraw-Hill, 1954), 80–1. See also John C. Wellons, John P. Gorecki and Allan H. Friedman, 'Stump, Phantom, and Avulsion Pain', in Kim Burchiel (ed.), *Surgical Management of Pain*



- (New York: Thieme, 2002), 427; 'Phantom Limbs', *Journal of the American Medical Association*, 125(9) (1944): 633–4.
23. 'Phantom Limb Syndrome', *Journal of the American Medical Association*, 128(12) (1945): 904.
  24. J. Lawrence Pool, 'Posterior Cordotomy for Relief of Phantom Limb Pain', *Annals of Surgery* (1946): 386; Murray A. Falconer, 'Surgical Treatment of Intractable Phantom-Limb Pain', *British Medical Journal* (1953): 299–304; Wellons *et al.*, 'Stump, Phantom, and Avulsion Pain', 424; Kelham, *Artificial Limbs*, 137.
  25. Unnamed Medical Officer, Ministry of Pensions, Medical Case Sheet, 6 November 1951, National Archives, PIN 26/21799.
  26. Bertram Feinstein, James C. Luce and John N. K. Langton, 'The Influence of Phantom Limbs', in Klopsteg and Wilson (eds), *Human Limbs and their Substitutes*, 85.
  27. Thomas and Haddan, *Amputation Prosthesis*, 59–60.
  28. Richard A. Sherman, 'History of Treatment Attempts', in Richard A. Sherman (ed.), *Phantom Pain* (New York: Plenum Press, 1997), 143.
  29. Unsigned medical report for the Ministry of Pensions, 5 October 1937, National Archives, PIN 26/21799.
  30. *Ibid.*
  31. Letter from Hopkinson to the Secretary of the Ministry of Pensions, dated 1 January 1938, National Archives, PIN 26/21799. For the physician's response, see his letter dated 10 January 1938, National Archives, PIN 26/21799 part 2 (P1030659).
  32. "'Patent Medicines" in New York', *British Medical Journal* (1915): 601–2.
  33. 'The Nostrum Nuisance', *British Medical Journal* (1910): 1073–4.
  34. 'Patent Medicines', *British Medical Journal* (1903): 1654; and 'The Nostrum Nuisance', *British Medical Journal* (1910): 1073–4. Cyanosis is dangerously low levels of oxygen in tissues near the skin surface.
  35. Murchell in 'Ministry of Pensions Medical Case Sheet', 17 July 1938, National Archives, PIN 26/21799.
  36. Unnamed Medical Officer, report to the Ministry of Pensions, 3 October 1939, National Archives, PIN 26/21799. None of these physicians disputed the phantom pains, simply their cause: see also Unnamed Medical Officer, report to Ministry of Pensions, 13 October 1939, National Archives, PIN 26/21799.
  37. Reported in a letter from F. Murchie of the Director General of Medical Services, 20 December 1935, National Archives, PIN 26/21799. See also memo dated 12 August 1932, National Archives PIN 26/21799 part 2 (P1030703); memo 1 August 1932, National Archives PIN 26/21799 part 2 (P1040099); 16 January 1936, National Archives PIN 26/21799 part 2 (P1030705).
  38. See report of 3 February 1936, National Archives PIN 26/21799 part 2 (P1040090).
  39. Medical Board report, 2 January 1936, National Archives, PIN 26/21799 part 2 (P1030636).
  40. Unnamed Medical Officer, Ministry of Pensions, 19 July 1939, National Archives, PIN 26/21799 part 2 (P1030606).
  41. Unnamed Medical Officer, Ministry of Pensions, Medical Case Sheet, 6 November 1951, National Archives, PIN 26/21799.

42. Unnamed Medical Officer, Ministry of Pensions, Medical Case Sheet, 6 November 1951, National Archives, PIN 26/21799.
43. Unsigned medical report, 1 December 1952, National Archives, PIN 26/21799. For physicians who made this argument, see Falconer, 'Surgical Treatment', 301.
44. Report dated 28 August 1954, National Archives PIN 26/21799 part 2 (P1040086).
45. Report by Hopkinson, 7 February 1940, National Archives, PIN 26/21799 part 2 (P1030597) and Report by Chief Regional Officer, dates 8 February 1940, National Archives, PIN 26/21799 part 2 (P1030595).
46. Thomas and Haddan, *Amputation Prosthesis*, 59.
47. J.R. Ewalt, G.C. Randall and H.D. Morris, 'The Phantom Limb', *Psychosomatic Medicine*, 9 (1947): 118–23.
48. Kelham, *Artificial Limbs*, 131 and 139.
49. W.F. Tislington Tatlow and J.L. Oulton, 'Phantom Limbs (with Observations on Brachial Plexus Block)', *Canadian Medical Association Journal*, 73 (1955): 173.
50. J.E. Pisetsky, 'Disappearance of Painful Phantom Limbs after Electric Shock Treatment', *American Journal of Psychiatry*, 102 (1946): 599–60. For other advocates of ECT for phantom pains, see 'Electric Shock in Painful Phantom Limb', *Journal of the American Medical Association*, 131(11) (1946): 942; and Lothar B. Kalinowsky and Paul H. Hoch, *Shock Treatments, Psychosurgery, and Other Somatic Treatments in Psychiatry*, 2nd revised edn (New York: Grune and Stratton, 1952), 204.
51. Leon Gillis, *Amputations* (London: William Heinemann Medical Books, 1954), 266.
52. Leon Gillis, 'Pain in Phantom Limbs', *British Medical Journal* (1948): 1108.
53. 'Doyen of Neurosurgeons', *British Medical Journal* (1960): 1788; and Peter H. Schurr, *So That Was Life: A Biography of Sir Geoffrey Jackson* (London: Royal Society of Medicine Press, 1997), 114 and 131.
54. The original spelling was 'chorotomy', but 'cordotomy' (the American spelling) has become more common. As a Greek word, 'ch' is a more accurate transliteration.
55. Lambert Rogers, 'Refresher Course for General Practitioners: The Surgical Relief of Pain', *British Medical Journal* (1952): 383.
56. Murray A. Falconer, 'Surgical Treatment of Intractable Phantom-Limb Pain', *British Medical Journal* (1953): 301. For another positive assessment of its effectiveness, see 'Chordotomy for Painful Phantom Limb', *Journal of the American Medical Association*, 132(2) (1946): 112; and J. Lawrence Pool, 'Posterior Cordotomy for Relief of Phantom Limb Pain', *Annals of Surgery* (1946): 390.
57. Schurr, *So That Was Life*, 255.
58. Geoffrey Jefferson speaking at 'Second Plenary Session: The Relief of Pain', *British Medical Journal* (1952): 147.
59. J. Donaldson Craig, 'Pain in Phantom Limbs', *British Medical Journal* (1948): 904; J.D. Parkers, 'Diseases of the Central Nervous System', *British Medical Journal* (1975): 92; Rogers, 'Refresher Course', 383; P. Jenner Verrall, 'War Surgery of the Extremities: Amputations', *British Medical Journal* (1942): 677; 'Intractable Pain', *British Medical Journal* (1968), 513–14; 'Surgical Relief of

- Intractable Pain', *British Medical Journal* (1961): 663–4; John C. Brocklehurst, 'Old Folks in Wet Beds', *British Medical Journal* (1962): 115. For other negative assessments, see J.A.W. Bingham, 'Pain in Phantom Limbs', *British Medical Journal* (1948): 52; Gillis, *Amputations*, 266; Kelham, *Artificial Limbs*, 143; Thomas and Haddan, *Amputation Prosthesis*, 60; Wellons *et al.*, 'Stump, Phantom, and Avulsion Pain'; James C. White, 'The Problems of the Painful Scar', *Annals of Surgery*, 148(3) (1958): 422–31.
60. Geoffrey Jefferson, 'Report of Specialist', 24 November 1943, National Archives, PIN 26/21799. Jefferson's address was 3 Lorne Street, Manchester.
  61. Geoffrey Jefferson, 'Treatment of Trigeminal Neuralgia', *British Medical Journal* (1932): 223.
  62. There had been concerns about Hopkinson's drug habit in 1932 and 1936. See National Archives PIN 26/21799 part 2 (P1030703), (P1040099) and (P1030705). The fear that chronic sufferers would 'become narcotic addicts' was frequently repeated: see Thomas and Haddan, *Amputation Prosthesis*, 59.
  63. Ministry of Pensions, 'Pensioner's Medical Record', 1 March 1949, National Archives, PIN 26/21799.
  64. See report dated 13 October 1939, National Archives, PIN 26/21799 part 2 (P1030600)
  65. 'Nitro-Glycerine in Trench Feet', *British Medical Journal* (1917): 513; and Matthew B. Ray, 'Physical Methods of Treating Rheumatism', *British Medical Journal* (1936): 1310.
  66. Verrall, 'War Surgery of the Extremities', 677.
  67. Ray, 'Physical Methods', 1310.
  68. Medical Officer report to the Ministry of Pensions, 10 August 1949, National Archives, PIN 26/21799.
  69. 'Intractable Pain', 84. See also W. Ritchie Russell, 'Painful Amputation Stumps and Phantom Limbs: Treatment by Repeated Percussion to the Stump Neuromata', *British Medical Journal* (1949): 1024. He was a neurologist who also wrote on facial palsy, poliomyelitis, head wounds, amnesia and multiple sclerosis. In 1975, he wrote *Explaining the Brain* (Oxford University Press).
  70. Kelham, *Artificial Limbs*, 141.
  71. *Ibid.*
  72. Russell, 'Painful Amputation Stumps', 1024–6.
  73. 'Pain in Phantom Limbs', *British Medical Journal* (1949): 1132.
  74. Wellons *et al.*, 'Stump, Phantom, and Avulsion Pain', 425.
  75. Kelham, *Artificial Limbs*, 141.
  76. From W. Ritchie Russell, to Dr R.D.L. Davies, 7 December 1951, National Archives, PIN 26/21799.
  77. Kelham, *Artificial Limbs*, 143.
  78. Note by R.D.L. Davies, dated 12 October 1956, National Archives, PIN 26/21799.
  79. Dr Harbour, in Ministry of Pensions and National Insurance report, dated 12 October 1958, National Archives, PIN 26/21799 part 2 (P1030498).
  80. Illegible signature, dated 12 November 1958, National Archives, PIN 26/21799 part 2 (P1030499).
  81. René Leriche, *The Surgery of Pain* (trans. Archibald Young) (London: Ballière, Tindall and Cox, 1939), 202.

82. Leon Gillis, *Artificial Limbs* (London: Pitman Medical Publishing, 1957), 437.
83. This was also the concern of Randall, Ewalt and Blair, 'Psychiatric Reactions to Amputation', 645.
84. D.S. McKenzie, 'The Elderly Amputee', *British Medical Journal* (1953): 153–5.
85. Signature illegible, 15 August 1956, National Archives, PIN 26/21799.
86. Gillis, *Amputations*, 339.
87. Note by Leon Gillis, dated 17 October 1956, National Archives, PIN 26/21799.
88. Tristram Samuel (Medical Superintendent, Queen Mary's Hospital), 'Summary of Case', 16 November 1956, National Archives, PIN 26/21799.
89. 'Sonalgin' (advertisement), *Transactions of the Association of Industrial Medical Officers*, 7(3) (1957): vi.
90. Samuel, 'Summary of Case', 16 November 1956, National Archives, PIN 26/21799.
91. Ministry of Pensions and National Insurance, examination, signature illegible, 12 November 1958, National Archives, PIN 26/21799.
92. Letter from Dr I.H.M. Curwen to Dr Bryans, 20 March 1964, National Archives, PIN 26/21799.
93. Dr Ian Curwen's report, dated 27 May 1964, National Archives, PIN 26/21799.
94. Report from Queen Mary's Hospital, 22 July 1964, National Archives, PIN 26/21799.
95. W. Ritchie Russell presenting his research in 'Discussion on the Treatment of Intractable Pain', *Proceedings of the Royal Society of Medicine*, 52 (1959): 984–7.
96. Dr G. Caithness in assessment report, 29 January 1973, National Archives, PIN 26/21799.
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