The West Riding Lunatic Asylum and the making of the modern brain sciences in the nineteenth century

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The candidate confirms that the work submitted is his own and that appropriate credit has been given where reference has been made to the work of others.

The brain is wider than the sky,
For, put them side by side,
The one the other will include,
With ease, and you beside.

The brain is deeper than the sea,
For, hold them, blue to blue,
The one the other will absorb,
As sponges, buckets do.

The brain is just the weight of God,
For, lift them, pound for pound,
And they will differ, if they do,
As syllable from sound.

Emily Dickinson (1830-1886).

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Abstract

In the final third of the nineteenth century, British asylums were backwaters. Custodians of the insane but curative failures, they lagged far behind the successes of their Continental counterparts and colleagues in other branches of medicine. Yet between 1866 and 1876, a British asylum – the West Riding Lunatic Asylum, under the direction of James Crichton-Browne – became one of the most active and important centres of scientific research in the world. This thesis is about that asylum – long recognised but little studied until now – and its pivotal role in the development of the modern sciences of mind and brain in Victorian Britain. Drawing on a wealth of published and archival sources, the thesis reconstructs the working practices of the asylum, explaining the intellectual and institutional background to its activities and describing its legacy in the field of medical science. In doing so, four new points are made. Firstly, it is argued that, through Crichton-Browne, the discredited ideas of phrenology had a more tangible link with the modern brain sciences than has previously been recognised. Secondly, it is explained how and why the ostensibly unpromising site of a Victorian asylum was made into a flourishing school of research. Thirdly, it is shown how the novel doctrine of cerebral localisation – the theory of localised brain functions – came to be fundamentally associated with the asylum's programme of study. And fourthly, it is contended that the disciplinary split which occurred between neurology and psychiatry in the late nineteenth century was a legacy of the asylum's work.

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BAAS	British Association for the Advancement of Science
BMJ	British Medical Journal
DCP	Darwin Correspondence Project
JMS	Journal of Mental Science
MPA	Medico-Psychological Association
NLS	National Library of Scotland
ODNB	Oxford Dictionary of National Biography
WRLAMR	West Riding Lunatic Asylum Medical Reports
WYAS	West Yorkshire Archive Service

Introduction

I. Prologue: 'My Friend the Mad-Doctor'[1]

IN SEPTEMBER 1873, one of the writers for Charles Dickens' journal *All The Year Round* regaled readers with the story of a visit he had recently paid to his friend 'the Mad-Doctor'. Appropriately named Horniblow, the silver-tongued physician was medical director of a 'large county asylum in the North of England', where he had under his supervision a fearful 'fifteen hundred madmen... with turned brains, controlled by a mere handful of attendants.' One might have expected a man with such power to be 'of herculean build', with a 'mouth hard as steel, and eyes of terrible fixed power.' The doctor, on the contrary, was 'a handsome, slightly-built man, with very fair hair, long blonde whiskers, the pleasantest of smiles.' A man who, 'but for a certain look of calm good sense and acute sagacity, you would have taken, if you had met him in Regent-street, as a pet of society, a leader in the ball-room, and a lion of the Row.[2]

Horniblow answered all his writer friend's questions about the asylum over a bottle of Burgundy, detailing the appearance, causes, and cures of insanity, and explaining current knowledge of the functions of the brain. He made it clear how we 'owe much to Gall and the phrenologists for drawing attention to the study of the brain, and for trying, however imperfectly, to localise the faculties', though he declared that Gall had 'tried to localise too much'. In light of this, Horniblow recommended 'a most curious and interesting essay' on aphasia, or loss of speech in cerebral diseases, written by his colleague Dr W.A.F. Browne of the Crichton Royal Institution, which had lately improved on Gall's researches.[3] After their scientific discussions, the doctor and his companion walked from his quarters, down the long asylum corridors, to the ball-room, where many of the patients were gathered for one of their weekly entertainments. All kinds of mania were on display in the room, and the writer met several of the poor sufferers and observed the treatments that had been devised for them. From a sense of foreboding when he entered the building, he was now filled with

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[1] 'Mad-Doctoring' was an older term to describe the profession of studying and treating insanity, which fell out of use in the first half of the nineteenth century. By the 1870s its use in print was usually pejorative. Throughout most of the century, the popular term 'alienism' was used, whose practitioners were called 'alienists', since they dealt with 'alienation', or disorders of the mind. Alienists also frequently referred to their own work as 'medical psychology'. The modern description of 'psychiatry' did not arise in British practice until the final decades of the century. Throughout this thesis all terms are used, to match the language of the people or period under discussion.

[2] [Anon.] (1873b) pp. 469-470.

[3] *Ibid.*, p. 472.

optimism as to the work of the asylum. 'We have a great deal to learn about these mysterious diseases,' Horniblow said to him, '[b]ut we are going on, I really do think, in the right direction.'[4]

II. Wakefield: The Very Model of a Modern Major Research School

Horniblow was, disappointingly, fictitious, but the man he was based on and the asylum he worked in were very real, and the story gave ample clues as to who this was.[5] He was Dr (later Sir) James Crichton-Browne, medical director of the West Riding Lunatic Asylum in Wakefield, West Yorkshire.[6] The son of another famous asylum director – the aforementioned W.A.F. Browne, of whom Horniblow was so effusive in his praise – Crichton-Browne was thirty-two years old when the story appeared. Though not quite yet the 'pet of society' (that followed in later life), he did move in the right circles, and in the field of medical science had already attained distinction for his work at Wakefield. It was not without good reason that the writer referred to Horniblow as 'the oracle'.[7] Horniblow thought asylums were moving in the right direction towards a better understanding of the brain. His real-life counterpart, James Crichton-Browne, and the asylum he ran, played a significant role in determining just what direction this understanding took in the nineteenth century.

Between 1866 and 1876, whilst he was medical director at the asylum, James Crichton-Browne led a school of research which was at the forefront of scientific study of the brain and mental diseases, the reputation of which became well-established. Research conducted in Wakefield and published in its own in-house journal, the short-lived *West Riding Lunatic Asylum Medical Reports* (1871-8176), was widely discussed in the medical press. The famed physician Thomas Clifford Allbutt, a contributor to its activities, remarked

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[4] *Ibid.*, p. 476.

[5] The description of Horniblow's striking appearance matches that of Crichton-Browne, as does that of the asylum (Wakefield held around 1,400 patients at this time). Mention is also given elsewhere in the article to the West Riding Asylum, the Newcastle County Asylum (at which Crichton-Browne had previously worked), W.A.F. Browne (his father), the Montrose Asylum (where his father had worked), F.J. Gall (as noted above, of whom he was a vocal admirer), and also to the case of a murderous attack on an attendant by a patient, which had occurred in Wakefield the previous year.

[6] The article appeared three years after the death of Dickens so, as Lawrence Ashworth has observed, it is unlikely to have been written by Dickens himself. See: Stanley Royd Hospital, 'All Year Round, The Suspicions of Mr Ashworth' (no date) [Online] http://www.wakefieldasylum.co.uk/peopleandevents/all-year-round-the-suspicions-of-mr-ashworth [Accessed 10 Jul. 2012]. When Crichton-Browne was just 21 he had met Dickens, and later noted that the famous author 'drove his nimble brain too far and too fast [leading to] paralysis affecting the left side – had it been the right side we should not have had *Edwin Drood*'. Quoted in Crichton-Browne (1932) p. 107.

[7] [Anon.] (1873b) p. 476. It is unclear whether the writer did actually visit the asylum, though in support of this view, his description of the inside of the building appears accurate, and two weeks later another anonymous article appeared about the region in the journal, entitled 'West Riding Sketches,' *All The Year Round*, 10 (1873) pp. 509-514.

in 1872 that there was 'a very great intellectual movement which is going on in the asylum,' whilst another commentator noted 'how indefatigably the gentlemen connected with this institution are labouring to extend and give precision to our knowledge of insanity.'[8] The *BMJ*, commenting on its activities in 1875, wrote:

> The West Riding Lunatic Asylum is now well known as one of the most admirably organised institutions of the kind in Europe. Under the directorship of Dr. Crichton Browne, who has the advantage of working under a most liberal and enlightened Board of Governors, the best results have been attained in every direction. Great scientific activity pervades the institution, as the admirable yearly volumes of reports testify, and as our pages this week and often bear witness.[9]

Both in the particular field of medical psychology, and in the broader enterprise of scientific investigation, Wakefield was widely acknowledged as an important location.

Its significance was also recognised beyond the medical and scientific community, with the asylum entering popular consciousness down a number of avenues. The spectacles of annual conversazioni, held yearly between 1871 and 1876 to celebrate the asylum's work, were well-attended events reported on by local and national newspapers, whilst Crichton-Browne drew attention to the asylum by contributing articles to popular periodicals such as *Gentleman's Magazine*.[10] He even managed to persuade W.S. Gilbert (famed collaborator with Arthur Sullivan) to stage a performance of his play *Pygmalion and Galatea* in the asylum's theatre, for the entertainment of staff and patients.[11] At a time when lunacy was a common subject for discussion in newspapers and the non-specialist press, lay audiences were aware of the asylum's reputation, especially so when Wakefield became associated with new findings in the brain sciences and the anti-vivisection campaigns of the 1870s and 80s. In September 1873, when *All the Year Round* paid Horniblow a visit, West Yorkshire was virtually the centre of the scientific world, with the annual meeting of the BAAS being held in Bradford, and the most exciting new work under discussion there – Dr Ferrier's new studies in cerebral localisation – coming from the asylum in neighbouring Wakefield.[12]

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[8] [Anon.] (1872a) p. 475; [Anon.] (1873c) p. 425.
[9] [Anon.] (1875b), pp. 488-489.
[10] See Crichton-Browne (1871b). The *Times* (23 Nov. 1875) p. 7, referred to the conversazione as 'an important annual convention of medical scientists'.
[11] Crichton-Browne (1926) pp. 149-151, wrote that he invited Gilbert to perform on 17 April 1875, after the play had been staged at the nearby Stanley Hall the night before. His powers of persuasion are all the more impressive as Gilbert was noted for rarely leaving London. Todd and Ashworth (1985) pp. 147-149, note that the performance was apparently the only time Gilbert ever performed in one of his own plays.
[12] The BAAS meeting was held in Bradford, 17-24 September, 1873. *The Times* (22 Sep. 1873) p.7, said Ferrier's recital excited more interest than any other at the meeting.

Figure 0.1: Caricature of Sir James Crichton-Browne in later life
Coloured lithograph by Sir Leslie Ward [Spy], from a supplement to *The World* (n.d.)
[Wellcome Library, London. ICV No. 1541]

In 1928, Joseph Shaw Bolton, then the director of the asylum, looked back on its development in his presidential address to the Royal Medico-Psychological Association of Great Britain. In the one hundred and ten years since it had first opened its doors to patients, he declared, Wakefield, 'more than many asylums, has been a mother of asylums, and attained a distinction accorded to few.' Indeed, such were its contributions to the theory and treatment of mental diseases that, for Bolton, its

> record of work during the nineteenth century for the advancement of knowledge in our specialty is, I believe, unique, and we shall find it difficult during the present century to rival it, and especially so now that the scientific study of disease has become widespread.[13]

In an age marked by the enormous growth and professionalisation of scientific activities, Wakefield had 'taken its full share in the work of scientific progress.' Under the aegis of Crichton-Browne, Bolton assured his audience, 'the Wakefield Asylum acquired not only a national but a European fame both for the treatment of the insane and for the prosecution of

[13] Bolton (1928) pp. 587, 629.

scientific research.'[14] Speaking in front of his home crowd, 'the leading county in England', it is not surprising that Bolton sought to extol the accomplishments made in the West Riding of Yorkshire. Yet he was not (and still is not) alone in noting that something quite extraordinary occurred in Wakefield during this particular period of its history. When Crichton-Browne died in 1938, the Harvard neurologist and medical historian H.R. Viets described Wakefield as 'one of the most active and productive research centers [*sic*] of the nineteenth century', whilst the *Times* obituarist remarked that

> [u]nder him that institution, which contained some 1,500 patients, was not only conspicuous for the excellence of its management, but also became, through his energy and enthusiasm, a great training centre for men specializing in mental disease, by whom the influence of its methods spread all over the country.[15]

Unique, important, and influential: the asylum was highly regarded, and its significance widely attested.

More recently, historical commentators have continued to make frequent reference to Wakefield as an interesting location in the development of modern science, though praise is somewhat tempered by the generally negative regard with which Victorian asylums are, as a whole, now held. Wakefield continues to stand out as an institution of unique interest in the development of nineteenth-century psychiatry and neurology, and several papers, articles and book chapters have turned their attention to the period of Crichton-Browne's rule as an intriguing but ultimately anomalous event in the otherwise dreary and depressing story of British asylum psychiatry.[16] Similar themes are repeated in each of these accounts, but the interest is only passing, rarely stretching to a more thoroughgoing assessment of the asylum's activities. To date, the only researchers to have carried out any substantial, original archival work on the asylum are John Todd and Lawrence Ashworth, two former employees at Wakefield in the second half of the twentieth century to whose efforts all subsequent studies of the asylum are indebted. Their account of Crichton-Browne's time is, however, only one part of a larger volume, and 'borders on the hagiographical,' such is its uncritical and historiographically naive presentation of events.[17]

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[14] *Ibid.*, pp. 625, 607.
[15] Viets (1938) pp 477; [Anon.], 'Obituary – Sir James Crichton-Browne: The Orator of Medicine,' *Times* (1 Feb. 1938) p. 16.
[16] For papers which have begun to look at the West Riding Lunatic Asylum's scientific contributions under James Crichton-Browne, see: Gatehouse (1981); Neve and Turner (1995); Pearce (2003); Russell (1988); Spillane (1974); Todd and Ashworth (1985; 1991); Viets (1938). Briefer mentions of the asylum's activities are also given in Bynum (1985); Clark (1982); Crammer (1996); Scull (2011) and others. For instance, the asylum is frequently mentioned in general surveys of the neurosciences, such as: Finger (2000) pp. 162-165; and R.M. Young (1970) p. 238; and also in broader histories of psychiatry, like: Oppenheim (1991) pp. 62-71; Scull (1993) pp. 253-254.
[17] Quote from Neve and Turner (1995) p. 399. Todd and Ashworth (1985) provide the only full account of the asylum throughout the nineteenth century, though most often it is their shortened 1991 article,

Thus, despite the many claims of success and influence, no full-length, systematic historical study has been made of the asylum and its place in the development of nineteenth-century science. Yet it is certainly worthy of such a comprehensive investigation, and there is much to be learned now from a discerning and informed history of Crichton-Browne's Wakefield. This thesis will provide a detailed examination of the West Riding Lunatic Asylum under James Crichton-Browne between 1866 and 1876, not to undermine previous accounts of the asylum, but to build on them by exploring its activities in closer detail. Wakefield was indeed a significant place, and it is the aim here to explain why. The thesis argues that the asylum was of signal importance in the development of nineteenth-century medical science, laying the foundations for modern neuroscientific study of the brain; and furthermore, this particular place and time are fundamental in understanding the trajectory of the sciences of mind and brain in the final decades of the century.

This account of the asylum is then, in some senses, an institutional history, presenting the inner workings of an establishment over a ten-year period. However, it goes further than that, explaining how the asylum was a part of the broader development of the sciences of mind and brain in the nineteenth century, and how it in turn contributed to those sciences. Combining the long and well-studied history of asylums and insanity with the equally long and well-studied history of mind and brain studies, the subject of the thesis is a meeting point for two of the most historiographically rich areas of medicine and science. The union of psychiatric and neurological practices and ideas that characterised Wakefield has mostly escaped attention, however, both because of the way those two enterprises developed in the nineteenth century, and because of the way historical approaches to them have developed since.[18] In the next two sections of this introduction, the history and historiography of, firstly, nineteenth-century asylums, and secondly, nineteenth-century mind and brain sciences, will be surveyed, setting the background to the activities at Wakefield. Then lastly, in Section V, an outline of the rest of the thesis will be presented and its central arguments and structure will be discussed. It is a theme of this thesis that these two histories – essentially ones of medicine and science respectively – should be integrated to better understand the activities and ideas of nineteenth-century research practice. For expository purposes, however, they will initially be considered separately, the more easily to make visible how the historical separation of 'medical' and 'scientific' activities is an artificial one, to which Wakefield itself contributed, and which a study of the asylum can resolve.

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which only deals with the Crichton-Browne years, which is discussed. R.J. Ellis (2001) has studied the asylum's archives in some detail, though he was not concerned with scientific research.

[18] Notable exceptions include: Bynum (1981; 1985; 1994); Clark (1981; 1982; 1983; 1988); Cooter (1981); Jacyna (1980; 1981; 1982).

III. Rise & Fall: The Story of the Victorian Asylum

Asylums were the modern era's answer to madness: vast monuments to Victorian sensibilities that cast great shadows across the geographical and political landscapes of their time. In early modern England, persons deemed insane had usually been taken care of by families or communities, or else resided in one of a piecemeal network of mostly small, private madhouses, with only three charity hospitals specifically for the insane in existence, the most famous of these being Bethlem Hospital in London.[19] In the nineteenth century, however, new state-sanctioned public asylums appeared, described by the twentieth-century MP Enoch Powell as

> isolated, majestic, imperious, brooded over by the gigantic water-tower and chimney combined, rising unmistakable and daunting out of the countryside [...] built with such immense solidity, to express the notions of their day.[20]

By 1900 around seventy-four thousand patients resided in seventy-seven of these establishments across England and Wales (there had been only 1,046 patients in nine public asylums in 1827) legislated for by a series of governmental acts and funded by ratepayers' taxes.[21] Psychiatry too, the medical specialty concerned with studying and treating insanity, grew with the asylums, which provided its institutional base. It continues as a discipline today, a prominent part of medical practice, but the asylums it developed in are mostly gone, their doors closed, and many patients returned to their communities following a period of 'de-institutionalisation' in the third quarter of the twentieth century.[22] Psychiatric hospitals still remain for both long- and short-term patients, but as the dominant means of tending to the mentally ill, the life of the grand public asylums lasted little more than one hundred and fifty years.[23]

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[19] The other two charity hospitals were St. Lukes Hospital, London (est. 1750) and the York Asylum (est. 1777). Care for insane patients before the nineteenth century is itself a huge area of study. Good starting points for considering the subject are: Andrews and Scull (2003); Bartlett and Wright (2000); Parry-Jones (1971); Porter (1987). For more on Bethlem see Andrews et al (1997).

[20] Quote from Enoch Powell, 'Address to the National Association of Mental Health Annual Conference, 9 Mar. 1961. [Online] http://www.nhshistory.net/watertower.html. [Accessed 3 Feb. 2012]. This is often referred to as Powell's 'Water Tower Speech'.

[21] Figures taken from K. Jones (1960), Appendix II, p. 210. The total population of England and Wales at this point was approximately 32 million.

[22] A polemical but compelling account of this process is given in Scull (1984).

[23] In 2001, with a population of around 49.1 million, England had approximately 30,000 psychiatric hospital beds available [Data taken from S. Priebe et al., 'Reinstitutionalisation in mental health care,' *BMJ*, 330 (2005) pp. 123-126.] This means that, approximately, as a fraction of total population, there were over three-and-a-half times more patients in county asylums at the start of the twentieth century than there were in psychiatric wards at the start of the twenty-first. These are not equivalent categories, and omit patients in other forms of care, but give a sense of the down-sizing of the institutionalised psychiatric population.

Writing about asylums has long been a contentious affair. For as long as they were active, they attracted both support and opprobrium (though the balance between the two fluctuated), and histories written about them have been equally disputed. The initial drive to build the new public asylums, frequently referred to as the 'reform movement', started with the House of Commons Select Committee inquiry into the 'the State of the Criminal and Pauper Lunatic in England and Wales' in 1807 and subsequent County Asylums Act of 1808.[24] The inquiry and act were spurred by growing distaste at the bestial conditions mad-men and women were maintained under in the old institutions, and further cases of abuse coming to light only stoked public outrage, leading to a second, much more detailed inquiry in 1815-16.

The 1808 Act had granted that each county could levy rates to construct and run an asylum, and the reformers had a model of how these should be run, in the moral treatment provided at the Quaker Retreat at York.[25] There, as at the Salpêtrière under Phillipe Pinel in Paris, a story was told of how the cruel chains and whips had been discarded and the mad were no longer treated as animals devoid of reason, but as erring humans who could be improved and returned to a normal life if treated in a proper environment. To supporters this represented a 'renaissance of the humane treatment of the insane' which, as the famous psychiatrist Daniel Hack Tuke observed later in the century, was 'an impulse still unspent, destined in the course of years to triumph.' For him, and most other psychiatrists of his time, the 'progress made from year to year in the provision for the insane', reflected in the growth and improvement of the asylums, signified 'the gradual but uninterrupted amelioration of their condition.'[26]

There were criticisms of asylums, however, which developed from both inside and out of the psychiatric profession as the century advanced. Public awareness was raised to many further cases of mistreatment, and also to several instances of wrongful confinement. Like the fear of being buried alive, worries that sane individuals – especially women – might be unjustly incarcerated preoccupied many Victorian minds.[27] The increasingly enormous size of the asylum population itself also became a reason for concern, raising anxieties that insanity was sweeping through the nation. Pessimistic Victorians saw this as evidence of the degeneration of British stock, a result of urban living and moral decay. The asylums too became a target. Was the expansion of the insane population in fact caused by the very presence of asylums in which to hold them and, moreover, was this expansion not

[24] See: M. Brown (2006); Scull (1993) pp. 46-174.
[25] For further details of the Retreat see: Cherry (1989); Digby (1985).
[26] D.H. Tuke (1881) pp. 307, 310.
[27] On nineteenth-century campaigns against asylums, see: Hervey (1986); McCandless (1981).

evidence that the asylums were failing in their curative task?[28] As asylums had grown from an average of one hundred patients to one thousand in this time, members of the psychiatric profession became troubled by the idea that their role had become one of mere custodianship, their institutions little more than gigantic storehouses for vast numbers of chronic and incurable cases. Surveying the state of asylums in 1871, the prominent psychiatrist and vocal critic Henry Maudsley attacked their treatments and theories which often 'have no better foundation than conjecture,' and questioned even their existence. '[N]ot many persons recover in asylums who might not recover equally well out of them,' he argued, and 'the removal of an insane person from the asylum sometimes conduces to his recovery.'[29]

Though cracks had been spotted in the asylum system, it remained in place until the middle decades of the twentieth century, when a period of de-institutionalistion from the 1960s through to the 1980s saw most asylums closed. Writing at this time were a number of psychiatric and social commentators who repeated and furthered Maudsley's earlier criticisms, challenging even the medical and scientific credentials of asylums and psychiatry. Thinkers such as Michel Foucault, Erving Goffman, Ronald Laing and Thomas Szasz – writing from very different perspectives though frequently grouped together as spokespeople for a broad 'anti-psychiatry' movement in the 1960s – portrayed asylums as total institutions, which sought to impose a certain conformity on patients whilst peddling treatments that presented social values as scientific categories.[30]

Foucault in particular, the most historically-informed of this coterie, saw the rise of the asylum as replacing the metal chains of medieval establishments with the moral chains of modern psychiatry. For him, the latter were more oppressive and malevolent than what had come before: progress, this was not. Foucault's, and the others' works, have been enormously influential in a number of ways, two of which are of particular relevance here. Firstly, such sociologically-minded histories of asylums were very much an active part of the movement that led to the asylums being closed down en masse. History, as part of the anti-psychiatry movement which advocated a move away from traditional asylums, played a part in ending the system it described.[31] And secondly, Foucault's ideas in particular have

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[28] R.J. Ellis (2001) provides a thorough re-investigation of the nineteenth-century responses to this question. He argues that the case for the curative failure of asylums was overstated, and has continued to be overstated by historians since.

[29] Maudsley (1871) pp. 319, 325.

[30] The key texts for these writers are: Foucault (1961); Goffman (1961); Laing (1960); Szasz (1960).

[31] Ultimately, the closure of asylums was probably driven by mostly political and financial motivations, with governments seeing the majority of the country's mental hospitals, and many of the patients they were home to, as an unnecessary cost. Added to this, the development of a new and potent psycho-pharmacopoeia in the mid-twentieth century provided drugs that could be used to control psychiatric conditions outside of institutions. For background see: Healy (2002); Scull (1984); Shorter (1997) pp. 239-327.

continued to exert an enormous influence on the work of historians. As the sociologist and historian Andrew Scull noted in 1993, 'heuristically, at least, the intellectual challenges he [Foucault] threw down three decades ago have directly or indirectly been the stimulus for much of the best recent work in the history of psychiatry.'[32]

From the late 1970s onwards, the re-appraisal of nineteenth-century asylums continued, with Scull himself becoming perhaps the most prominent and prolific writer on the history of psychiatry in Britain. In *Museums of Madness* (1979), and a huge volume of books and articles since, he expounded the idea that the rise of the nineteenth-century asylum was driven by the converging forces of rising capitalism and professionalising medical men. That is,

> the rise of a segregative response to madness (and other forms of deviance) can... plausibly be asserted to lie in the effects of a mature capitalist market economy and the associated ever more thoroughgoing commercialization of existence.[33]

Asylums were the capitalist response to the non-productivity of insanity, and psychiatry as a discipline formed as the medical expertise and overseer of this market function. A simple yet provocative thesis – 'arguably the most influential monograph on the history of psychiatry in Britain' – since his work, historians of asylums have part-ossified around Scull, frequently positioning themselves in relation to him whether supporting, attacking or offering partial revisions.[34]

Scull and other historians of asylums were largely engaged in a revisionist project, self-consciously seeking to overthrow the 'Whiggish', progressive and triumphal story of the asylum that was told in the nineteenth century and the first half of the twentieth. Old 'apologist' histories of the asylum, which celebrated its supposed humanitarian and reforming achievements, were challenged by a more critical and professional historical approach.[35] Revisionist historians sought to explore the social, cultural, political and other factors behind the growth of asylum psychiatry, contrasting their work with the purely internal, intellectual accounts given by earlier, amateur scientist-historians. Such a self-styled contrast was quite artificial, driven largely by the political goals of the writers involved. Indeed, as Porter and Micale argued in 1994, Whiggism existed 'primarily in the ideological imagination of the latter-day revisionist historian who continues to find the

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[32] Scull (1993) p. 5. See also Scull (1990; 1991a). The influence of Foucault continues today, with Cooter (2007), for example, calling for medical historians to re-engage with Foucaultian ideas.
[33] Scull (1993) p. 29. Scull's 1993 book is an expansion of his original 1979 work.
[34] Bartlett and Wright (2000) p. 1. See: Crammer (1994); Shorter (1997) as examples of criticism against Scull. Works by: Bartlett (2001); R.J. Ellis (2001); Forsythe, Melling and Adair (1996); Wright (2001), can be seen as histories self-consciously building on Scull's ideas.
[35] The 'apologist' side is most usually associated with writers such as K. Jones (1955; 1960) or Crammer (1990).

concept an indispensable ideological straw man against which to define his or her own self-consciously radical interpretations.'[36] Critical accounts of the asylum have long been the norm, and moreover, in line with Porter and Micale's hopes for a more reflexive approach, the ideological intentions of revisionism are now ostensibly less prominent.[37]

The notion of psychiatric medicine being founded on scientific values, which was fundamental to nineteenth-century practitioners, has remained problematic. Historians of psychiatry have generally sought to undermine or even eschew the scientific credentials of Victorian asylum practice, and in so doing have often left it for psychiatrists themselves to investigate such matters. In fact, Scull's ubiquitous corpus of work, which makes a point of highlighting such an historiographic split, is in some part responsible for perpetuating the division between broadly social and scientific approaches.[38] As he put it, 'the notion that the medical capture of madness reflected and was somehow caused by some mysterious advance in scientific understanding: as an ideological prop for the professional claims of psychiatry... has obvious merits; [but] as an historical analysis of the process itself, it has none.'[39]

For Scull, asylums grew as society's way of dealing with inconvenient individuals, not as a result of any real theoretical or practical advances. Asylums are considered a barren land when it comes to true scientific developments, and the scientific pretensions of nineteenth-century asylum doctors are treated as mere professional rhetoric. There are echoes of the criticisms James Crichton-Browne bemoaned in 1871, when he wrote that

> [i]n the harmless, but vindictive, attacks which have been recently directed against the public lunatic asylums of this country, it has frequently been a charge that no scientific work is accomplished in them [...] And it has further asserted that when these medical officers have by any chance ventured to enter the field of original investigation, they have, as a rule, signally failed in achieving any useful result, because they are blinded and misled by an erroneous method and by philosophical phantasms[.][40]

Crichton-Browne was reacting primarily to the 'attacks' made by his contemporary Henry Maudsley. As a consequence of the way British asylums have been viewed by historical writers in recent decades, the scientific activities of asylums like Wakefield have been largely overlooked, and the charge that no scientific work was accomplished in them is now

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[36] Micale and Porter (1994) p. 8.
[37] It appears that a narrower focus in time, place and subject – a common theme across history of science and medicine more generally – has resulted in fewer broad, ideological histories of psychiatry being written.
[38] Scull (1991a) re-stated the division between scientist-historians and professional historians. Such a division was somewhat reflected in the formation of the journal *History of Psychiatry* (1990-), whose founding editors were German Berrios (a psychiatrist) and Roy Porter (a social historian).
[39] Scull (1993) p. 3.
[40] J. Crichton-Browne, 'Preface', *WRLAMR*, 1 (1871) p. iii.

commonplace. Yet, as the historian Edward Shorter has already pointed out, and as this thesis supports, 'reducing the history of psychiatry to professional self-servingness ends up explaining little of a complex story.'[41] Careers mattered, but ideas mattered too.

IV. Fall and Rise: The Story of the Victorian Mind and Brain Sciences

Historical debate over the cause of the rise of asylums in the nineteenth century – 'one of the most exciting in the social history of medicine' – is, according to Shorter, the product of 'a cleft demarcating neuroscience from psychosocial understanding.' As he put it, whilst 'the neuroscientific side of the story sees growing pathology, the psychosocial version sees a social universe increasingly intolerant of deviance.'[42] Indeed, the cleft between neuroscientific and psychosocial studies goes beyond this particular debate as, though Shorter's is one exception, histories of neuroscience and histories of psychiatry in the nineteenth century are usually entirely separate, with the history of the brain sciences representing an independent category on academic bookshelves. Yet the brain, and in particular, the theory of cerebral localisation – the scientific doctrine that the cortex of the brain is functionally divided, with each part performing a different task – was central to the research agenda at the West Riding Lunatic Asylum, and to the development of psychiatric thinking in the nineteenth century. Debate over cerebral localisation, which in various guises had been widely discussed since the early decades of the century, was largely concluded by the work of David Ferrier in the 1870s, at which point the paradigm of cerebral localisation was established that 'still dominates the assumptions of research in physiological psychology.'[43] It is a central contention of this thesis that the asylum, at which Ferrier began his experimental studies, played a large role in making this physiological doctrine a canon of medical science. This specific institution, under the individual direction of James Crichton-Browne, at that particular period of time, was pivotal in shaping a conception of the brain that remains with us today.

The development of cerebral localisation in the nineteenth century has been well-studied by historians.[44] In particular, many authors have drawn attention to the resemblance

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[41] Shorter (1997) p. ix. This point was also similarly made by Bynum (1994) p. xi-xii.

[42] Shorter (1997) p. 33. Though by no means do I share Shorter's 'neoapologist' view of asylums, or take any stand in the neuroscientific/psychosocial debate over mental illness, I agree with his view that historians of medicine, when considering asylums, have too frequently ignored the relevance of neuroscientific thinking.

[43] R.M. Young (1970) p. 249.

[44] For just some of the works which have focused on cerebral localisation, see: Brazier (1963); Brook (1989); Clark (1982); Clarke and Jacyna (1987); Engelhardt (1972); Finger (1994; 200); A.G. Gross (2008); C.G. Gross (2007); Harrington (1987; 1991); Jefferson (1953); Kaitaro (2001); Kerr, Caputy and Horwitz (2005); Krech (1962); Millett (1998); Morabito (2000); Pauly (1983); Phillips, Zeki and Barlow (1984); Riese and Hoff (1950-1951); Stookey (1954); R.M. Young (1968; 1970).

between the phrenological ideas of Franz Joseph Gall (1758-1828) and the later localisation studies of the nineteenth century. Gall's work is now regularly viewed as a precursor to modern neurology; an unpolished, proto-theory of mind that was a turning point – perhaps even a starting point – in the development of Western empirical and experimental theories of mind and brain.[45] Phrenology is generally seen as having three main arguments: one good, one bad, and a third more difficult to assess. Its good point was the assertion that the brain alone is the organ of mind, an idea that was well established but which was only made orthodox in the early nineteenth century.[46] With this idea made doctrine, no concept of mind was tenable that did not make allowance for its physical imposition in the brain ('the mind and the body are inseparable in this world, and cannot be investigated apart from each other'.)[47] The bad idea of phrenology was cranioscopy, or 'skull reading'. The notion that someone's personality and innate skills could be determined from their skull was, and continues to be, the aspect of phrenology which attracts both the most attention and the most derision.[48] The third element, which mediated between the other two and sat somewhere between them in plausibility too, was faculty psychology. Gall had argued that human and animal minds were composed of several separate faculties, with each having its seat within a separate organ of the cerebral cortex. Followers edited the number and location of the faculties, but the theory remained that a person's character was a product of the relative sizes of the relevant organs of their brain.

Historians have thus ascribed great importance to phrenology because it set the tone for much psychological thinking in the nineteenth century, bringing the mind into the realm of biological science, and foreshadowing the growth of localising brain studies that remain with us today. It has also been the battleground for historical debate as the 'pseudo-science' *par excellence*; a now dead practice which provides the perfect opportunity to understand how social relations stimulate and shape the production of scientific knowledge.[49] As in the history of asylums, the history of the brain sciences has seen a split between more scientifically-minded works keen to identify continual debate and development in ideas, and sociologically-minded historians, who have utilised past attempts at explaining the workings of the brain as clear demonstrations that scientific beliefs have no more special claims to truth than any other beliefs.[50] These two approaches to phrenology – roughly

[45] For broader histories of psychology, see: Capretta (1967); Hearnshaw (1964); Murray (1983).
[46] Price (2006) argues, however, that the background history of Enlightenment materialism was at least as important as phrenology in leading to the view that the brain is the sole carrier of the mind.
[47] T. Laycock, 'Phrenology', *Encyclopaedia Britannica*, 8th edn (1859) p. 556.
[48] Cranioscopy, or craniology, or craniognomy: all terms were used.
[49] See: Cooter (1984); de Giustino (1975); Shapin (1979a; 1979b); Stack (2008); van Wyhe (2002; 2004); R.M. Young (1970).
[50] The *Journal of the History of the Neurosciences* (1992 -) represents work in the 'scientific' tradition. Studies in the 'social' approach to the brain sciences are exemplified by: Cooter (1984); Star (1989); Winter (1998).

speaking, scientific and sociological – were neatly represented in a journal-based academic dispute between Geoffrey Cantor and Steven Shapin in 1975.[51] The subject of their study was the debate over phrenology in Edinburgh during the first quarter of the nineteenth century, when phrenological adherents clashed with the Scottish moral philosophers of the city. The two groups, which broadly constituted the two most prominent theories of mind in Edinburgh at the time, attacked each other in public and press, but their arguments were 'incommensurable': the facts of the matter were relative to the position one held.[52] For Cantor, the debate was intellectual; for Shapin it solely reflected class divisions. In any case, whichever side a particular actor took was indicative of how they aligned with prevailing attitudes, reflecting where they stood in relation to a whole host of professional, political, philosophical and religious issues.

Phrenology has thus seen almost as much debate amongst historians in the final quarter of the twentieth century as it did among men of science in the first quarter of the nineteenth. In its most extreme version, the sociological approach – in considering the popularity of phrenology in late-Georgian to early-Victorian Britain – argues that 'phrenology was only an intellectual midwife to the emergence of the bourgeois-liberal style of thought,' covertly serving 'to authenticate and naturalize both the dehumanizing forces in industrial society and the social reality they fostered.'[53] Phrenology's scientific merit is considered irrelevant, for the historical actors as much as for us, since it was only accepted insofar as it reflected prevailing socio-political ideals. This approach to the history of phrenology has great value, helping to explain the apparent explosion and collapse of interest in phrenology in the first half of the nineteenth century. It also has limits, restricting the range of historical interpretations and *a priori* assuming the reasons for the actions and ideas of historical actors. Furthermore, it is an unwieldy method when we are examining individuals, rather than groups, as single figures rarely fit every stereotype we have for them.

In this thesis, a middle road is taken in the approach to phrenology and the sciences of mind and brain in the nineteenth century. In line with others, it argues that there is a theoretical link between phrenology and experimental localisation. Jerry Ravetz has pointed out that schools of research, like the one at Wakefield, should be seen 'in terms of the work

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[51] Cantor (1975); Shapin (1975).

[52] It is striking how Shapin and Cantor themselves reflect the two groups they were disputing, though it should be noted that their respective positions were self-consciously styled, each playing to type in an amiable academic discussion over the merits of the approach of the 'Sociology of Scientific Knowledge'. Shapin, the sociological historian, defended a new, universal and somewhat dogmatic methodology (read phrenology), challenging the sceptical and traditional, idea-based approach of Cantor (like the moral philosophers).

[53] Cooter (1984) pp. 88, 118.

done on a family of problems, usually descended from some seminal ancestor problem.'[54] In Wakefield, the ancestral problem was phrenology. Social groups still matter, however, as it will also be argued that the connection between phrenology and cerebral localisation was mediated through the asylum, and the men who worked there. As several authors have pointed out, alienists were particularly receptive to Gall's ideas, and remained attached to phrenological reasoning throughout the century.[55] Medical understanding of insanity was fairly welded to the notion that different mental diseases were concomitant with specific brain lesions, even if the evidence for this was not forthcoming.

The roles of professional groups were also particularly relevant in the 1870s, when the Wakefield asylum was at its most productive. This was a critical period in the development of the sciences of mind and brain, when the disciplines of neurology, psychology, psychiatry, philosophy and physiology – all of which had mind and brain as their subject (or object) matter – began to take on distinct and separate identities.[56] Their division was not entirely clear-cut, with practices and practitioners continuing to straddle one or more boundaries, but increasingly they came to be seen as different disciplines, conducted by different people, doing different work in different places and publications. A significant step in this process was the separation of neurology – as both a medical specialty and research activity – from the work of psychiatry, the asylum-based practice of treating mental disease.[57] The years between 1870 and 1890 saw 'the emergence of a critical and mature neurological profession in Britain', and W.F. Bynum noted that whilst 'the flowering' of British neurology occurred in London,

> the roots are usually placed in the West Riding of Yorkshire, in the fruitful interchange between neurologists, psychiatrists, scientifically orientated physicians, and pathologists in the newly created pathology laboratory of the West Riding Lunatic Asylum[.][58]

The most famous of the researches conducted in the pathology laboratory were those done by the Scottish neurologist David Ferrier, who in 1873 carried out a series of experiments on animal brains that cemented the doctrine of cerebral localisation. It will be shown in this thesis that the West Riding played a key role in this process, as in pursuing a programme of brain research the asylum laid the foundations for the development of the neurological profession in Britain in the latter decades of the century. The ideas and activities that would become central to neurological brain research were at least partly the outcome of a certain

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[54] Ravetz (1971) p. 224. Also quoted in Geison (1978) p. xi.
[55] See: Bynum (1981); Clark (1982); Cooter (1981).
[56] See R. Smith (1992) pp. 113-178.
[57] For more on the creation of medical sub-disciplines, see Weisz (2006) esp. pp. 26-43. See Casper (2006) for a full account of the growth of British neurology, 1880-1960.
[58] Bynum (1985) p. 96.

scientific environment cultivated in Wakefield, and they were motivated by a particular physical approach to the brain that had long been a part of theory and practice in British asylums. Psychiatry and neurology became separated fields, and historians have tended to project this division back onto the nineteenth century. At the asylum, however, there was no such division.

V. Science in the Asylum: Methodology and Outline of the Thesis

In the almost overwhelming amount of historical work on the mind and brain sciences, as Roger Smith pointed out, knowledge 'resembles a patch-work, with each patch executed to a different pattern and showing little indication of where it might be sewn into a whole.'[59] Smith contended that historians in the field, each independently engaged by various sub-plots, have failed to make clear how these relate to one another. By making a single asylum the focus of study, this thesis attempts to tie together several historical threads by showing how various ideas and practices were united under a single roof. It also responds to recent calls for a more integrated version of the history of science and medicine, stressing the inter-relatedness of scientific ideas and medical practices, and their influence on each other.[60] Institutionally-oriented case studies of a single asylum constitute a well-trodden path for doctoral theses, but the approach taken here, and the activities under view, are less common in the history of asylums.[61]

Three simple yet fundamental questions guide this study of the West Riding Lunatic Asylum: what actually happened there; why did it happen there; and how was it important? To answer the first, the working practices of the asylum in this period and the theories it operated under will be reconstructed, to understand how an institution ostensibly for the care and custody of the insane should have become an international centre of scientific research. Young doctors arrived, patients were observed, drugs were trialled, animals were vivisected, instruments were operated, samples were studied microscopically, and thorough medical case-notes and post-mortem reports were compiled. All these activities led to research papers, publicised through the asylum's own journal and conversazioni, and at the core of these research practices was the brain, which above all was the object of study, the organ to be scrutinised and explained in order to understand what the causes of, and

[59] R. Smith (1992) p. 19. Smith provides a cohesive narrative by focussing on the changing concept of inhibition and its role in discourses of mind and brain. An even more comprehensive account of the historical issues relating to mind and brain is given by him in R. Smith (1997).

[60] Recently, several authors have noted the separation between histories of science and medicine, and how this should be corrected. See: M. Jackson, '"The Twilight Zone": Reflections on the history of science and medicine', Plenary Lecture at the BSHS Annual Conference, Exeter University (15 Jul. 2011); Müller-Wille (2011); Worboys (2011). For earlier discussions of this division, see also Warner (1985; 1995).

[61] The popularity of institutional studies for PhD theses was noted by Bartlett & Wright (2000) pp. 2-3.

potential cures for, insanity, were. In addressing the second and third questions – why did this happen in Wakefield and how was it important – the thesis moves beyond the walls of the asylum to consider its position in relation to the broader developments of asylums and the sciences of mind and brain in the nineteenth century. As already mentioned, though one of the largest and most prominent in the network of public asylums, it was not in the field of treating insanity, but in the nascent discipline of neurology, that Wakefield is generally regarded as having made its real contribution.

As a guide to investigating and understanding the work of the asylum, it will be considered in this thesis as a 'research school', in line with the ideas first outlined by Jack Morrell. In a 1972 article comparing the mid-nineteenth century chemistry laboratories of Justus Liebig at Giessen and Thomas Thomson in Glasgow, Morrell postulated

> a conjectural model of what may be called an ideal research school by drawing attention to the circumstances under which a research school could most successfully operate in the first half of the nineteenth century.[62]

To explain the success of Liebig's laboratory (and relative failure of Thomson's), Morell outlined seven key elements that were necessary to the development of a research school. These were: an over-arching programme of research ripe for study; simple but reliable techniques for amassing information; good quality students; access to publication; money; an influential and powerful director; and, additionally, a charismatic directorial style. The concept of the research school has since proved popular amongst historians of science, since it represents a '*unit of analysis*', a useful checklist that can be adapted in different situations.[63] As a methodology it is catholic in its approach, with social, epistemological, and technical factors examined side by side. It does not pre-determine a causal explanation for the outcomes of any research school, but it does suggest a fruitful way of exploring them.

Though Morrell's research school model was developed to explain pre-1850 chemistry laboratories, it still holds value for studying Wakefield in the final third of the century. Indeed, in Gerald Geison's study of Michael Foster's physiology school at Cambridge there is already a precedent in applying the concept to the late-Victorian life sciences.[64] It is novel to consider a research school within an asylum, since most that have been previously identified resided within universities or independent institutions. Doing so helps understand how a programme of scientific research was created within an

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[62] Morrell (1972) p. 3.
[63] Geison (1993) p. 228. For further background on the concept of the research school, see also: C.M. Jackson (2006); Secord (1986; 2004); Servos (1993).
[64] Geison (1978).

establishment ostensibly for the care of insane patients. Indeed, though no-one connected with Wakefield referred to the place as a research school – it remained an asylum first and foremost – this is no reason why it cannot be studied as such. It was referred to as an 'experiment', and a place of scientific research and training, and contained all the elements previously outlined as necessary. That it has never been called so before is perhaps indicative of the fact that this was an unusual location for such an enterprise, but this thesis aims to show that the West Riding Lunatic Asylum was a research school comparable to Liebig's, Foster's, or Wilhelm Wundt's experimental psychology laboratory at Leipzig.[65] It had money, students, a journal, a programme of research and methods of study to investigate the brain and, in James Crichton-Browne, it had a uniquely charismatic and influential director.

Focussing on a single institution, reappraising a triumphal story of scientific progress, and utilising an historical framework first presented in 1972: the approach of this thesis may seem somewhat antiquated. This is not the case, but rather the chapters that follow make use of a variety of historiographical sources and methods, both old and recent, in investigating the asylum. The chapters are arranged thematically, with each examining the different elements that contributed to the work done at Wakefield. There is still a broad chronological movement from the introduction to conclusion and within each chapter, and the evidence and arguments presented are cumulative from start to finish. Nevertheless, within this thematic organisation, different historiographical approaches are consciously utilised in different chapters. As mentioned above, a combination of various social, epistemological and technical factors contributed to the research school at the asylum, and it thus makes sense to consider these on their own terms, making use of the best historical tools available.

Chapter One, 'Phrenological Pragmatism', outlines the historical context to the research school which commenced at the West Riding Lunatic Asylum in 1866, following developments in asylums and the mind and brain sciences in the middle decades of the nineteenth century. Moreover, this chapter is a study of Crichton-Browne, the director of the asylum and protagonist of the thesis. Few archival sources remain on him, so the chapter looks to his family background.[66] It is argued that his work was motivated by the phrenological and asylum-reforming ideals of his famous father, W.A.F. Browne, whose

[65] See Fancher (1996) pp. 145-185 for an overview of Wundt's experimental programme.

[66] Little remains of Crichton-Browne's letters of correspondence, and what does remain are mostly administrative and perfunctory letters from his later life. See: British Library, London, Archives and Manuscripts, MS. 55251, RLF 1/2754, 1309, 2170, 2332 (a handful of letters with Macmillan's and the Literary Fund, 1878-1931); Edinburgh University Library, Special Collections, 'Browne, James Crichton', GB 237 Coll-663, Gen. 1981/36-37 (three letters from 1895-1932); Wellcome Library, London, Archives and Manuscripts, MS. 8725/1-7 (seven letters referring mainly to public speaking roles, 1882-1895). The only known extant letters from his time at Wakefield come from his correspondence with Charles Darwin. These letters are referred to in this thesis.

own career and works will be studied in detail. Building up both an historical and a biographical picture of Crichton-Browne, it is seen just how entrenched he was in the narratives of asylums and the brain sciences before he had even arrived in Wakefield.

Chapter Two, 'Neuro-Industrial Complex', considers how and why the asylum became a research school. Mid-Victorian British asylums were, and still are, considered backwaters, where financial rectitude and secure custodianship took priority over any medical or scientific advances. Yet, for a brief period, Wakefield was home to one of the most important centres of scientific study in the world. This chapter presents an institutional history, albeit of a relatively short period, utilising archival sources to explain how the asylum was governed, organised, and paid for. The functional arrangement of the asylum is examined to identify how resources – buildings, people and other materials – were adapted and manipulated by Crichton-Browne. In particular, the arrival of unpaid clinical clerks is highlighted as a decisive step in the asylum's history. This chapter is thus concerned with the more social, less intellectual aspects of Morrell's research school model, but it also goes beyond those elements, situating Wakefield in both its national and international context, and explaining why the West Riding Lunatic Asylum was well-suited for research.

In Chapter Three, 'Patients and Post-Mortems', the asylum's patients are brought into closer view. Archival case books and reports are used to explore the myriad ways in which they were observed, treated, and understood, as the path of a patient is followed from admission to eventual discharge or death. It is argued that patients were a fundamental element in the asylum's programme of research – an element not considered by the research school model – and that the scientific approach adopted at Wakefield in turn impacted on the way patients were viewed. The asylum's doctors were committed to a somatic conception of mental disease, and through systematic post-mortem examinations they built up evidence to link the pathological appearance of the brain with the clinical symptoms of insanity, eventually producing brain images to identify the presence of cerebral lesions. These images, the first such known and forerunners to the modern neuro-image, were a construct based on recent research conducted in the asylum.

Chapter Four, 'Local Functions', turns attention back to the scientific theory of cerebral localisation, presenting a contextualised and localised study in the history of this important idea. The early experimental studies of David Ferrier and the previously unmentioned role that Wakefield played in his famous work are considered in close detail, to understand why his unorthodox ideas were so quickly accepted. It will be seen how the asylum helped advertise Ferrier's work to both scientific and lay communities, and provided evidence in support of cerebral localisation through new microscopical investigations. In addition to his well-known animal experiments, Ferrier also used the asylum's patient

records to develop his own model of the brain, and the asylum became further associated with Ferrier's work when it was implicated by anti-vivisection campaigns against him.

Chapter Five, 'Divided Practice', turns to the legacy of Crichton-Browne's research school, in Wakefield, and throughout the field of psychiatry. Through Herbert Major and William Bevan-Lewis, Crichton-Browne's two successors at Wakefield, the asylum's research programme was continued into the early-twentieth century. A prosopographical study is conducted of all the medical men who worked at the asylum, to follow their progress and gauge their impact beyond West Yorkshire. It is argued that the programme of brain research conducted at the asylum led to the division of neurology from psychiatry, and to the creation of the new neurological journal, *Brain*, which became the mouthpiece for cerebral localisation supporters. In stimulating the founding of *Brain*, and the psychological journal *Mind*, the asylum contributed to the reappearance of the division between physical and philosophical studies of mind and brain that had characterised the earlier debates over phrenology. In concluding this thesis, the later career of Crichton-Browne is then surveyed, and the significance of the research school he led is reconsidered in the light of the findings presented in previous chapters.

Medical and scientific works are here considered side-by-side, and there is much of interest for historians in both fields. For instance, in examining how asylums were well-funded institutions which offered the potential for training and investigation, the thesis shows how they are open areas of study in the history of medical education and the popularisation of science. Indeed, the development of the clinical clerk system at Wakefield marked a new form of medical research and pedagogy in the asylum, as students were trained en masse in a continuous system, rather than through individual patronage, and worked together in a collective project of study. Also, in examining the development of cerebral pathology at the asylum, the thesis shows the amount of previously unobserved work that went into constructing an explanation of the brain, and indicates that there is more to be discovered about the way modern neuroscientific knowledge proceeded in the late nineteenth and early twentieth centuries. For historians of science and medicine, there is much to be gained now by understanding what the West Riding Lunatic Asylum did, why it did it, and how it was important.

1. Phrenological Pragmatism

Asylums and the Brain between W.A.F. Browne and James Crichton-Browne

I. Introduction: A Phrenological Path from Father to Son

IN THE SUMMER OF 1866, British institutions were in turmoil. A Liberal Government, in power for the previous seven years, had failed to introduce the voting reforms that many in the country were agitating for, and in-party divisions brought them down. They were replaced in June by a minority Conservative Government which, aided by the radical wing of the Liberals, succeeded in widening enfranchisement the following year.[67] Political unrest was matched by a financial crisis too as, also in June 1866, the major London bank Overend, Gurney & Co. went into liquidation, leading to a period of historically high interest rates and hundreds more British companies and banks failing. The bank, whose origins went back to 1800, had been a family-run Quaker business that, until the middle of the century, found success on a simple plan of trading bills of exchange. With the death of its philanthropic leader Samuel Gurney in 1856, however, the company had strayed beyond its traditional Quaker probity, and collapsed.[68]

In asylums too, unrest was growing. Throughout the middle decades of the century groups like the Alleged Lunatics' Friends Society campaigned against the way supposed lunatics were detained and treated in asylums, voicing their discontent in governmental debates and in popular literature, whilst the alienist profession itself was depressed by its failure to find cures for the vast numbers of patients that were under its care. Like Overend, Gurney & Co, British asylums had grown on the basis of Quaker methods established at the start of the century. 'Moral treatment' was a system of patient care and management which began, in a British context, at the Quaker Retreat at York, founded in 1796. Associated with a religious view of mental disorder, moral treatment did not sit comfortably with the purely physical understanding of the lunatic mind professed by the medical men in charge of asylums, nor had it lived up to its early promise as a successful method of treating insanity.[69] Partly as a result of this early promise, asylums had become regular and prominent features of the landscape in Britain since the start of the nineteenth century, but their size was now becoming more a measure of their failures than it was of their

[67] This was a consequence of The Reform Act 1867. See Saunders (2011) for further details.
[68] See: 'The Panic', *Times* (12 May 1866) p. 12; G. Elliot, 'Don't panic, we've seen this before', *Daily Telegraph* (19 Sep. 2007).
[69] On moral treatment and the Retreat, see: Cherry (1989); Digby (1985); Donnelly (1983); Scull (1981; 1993).

achievements. Short though it was, the asylum's history weighed heavily by the final third of the century.

Such was the situation when James Crichton-Browne was appointed as medical superintendent at the West Riding Lunatic Asylum in August 1866. At just twenty-five years old, and less than five years out of Edinburgh's medical school, Crichton-Browne was still relatively inexperienced, but he had deep roots in asylums, and strong views on their history. His father, William Alexander Francis Browne (1805-1885), had been a key figure in the asylum reform movement of the early Victorian period and a leading voice in British alienism since the 1830s. Browne had also been a prominent and popular lecturer of phrenology, keenly supporting the brain science made famous by Gall, Spurzheim and the Combe brothers. It was in these two areas of study – treating insanity and understanding the brain – that his son James was to turn Wakefield into a world-leading institution in the ten years he spent there. The effect of the personal link between father and son is clear, and in this chapter it will be shown just how much the asylum under Crichton-Browne was shaped and driven by ideas promulgated by his father some thirty years earlier. Yet, as important an influence as father was on son, there were obviously other great social and intellectual factors that stimulated and moulded the work conducted under Crichton-Browne in the West Riding. The second, concurrent aim of this chapter is therefore to follow some of the key developments in understanding of the mind and brain, both normal and disordered, from the early 1820s – when W.A.F. Browne was a young man starting out in the world of medicine – to the early 1860s, when his son was in an equivalent stage of life. Between these two men there is a real, tangible and personal link from phrenology in the first half of the century to the cerebral physiology of the second.

Section II begins by considering the world of 1820s Edinburgh, a world where phrenology was the subject of heated philosophical debate and the young W.A.F. Browne became one of its most vocal proponents. This section establishes the relationship between phrenology and alienism that was crucial in the nineteenth century. In Section III, Browne's famous work, *What Asylums Were, Are, and Ought to Be*, is studied in detail, and it is seen how phrenology permeated his vision for the ideal asylum. Section IV then follows developments in phrenology and the sciences of the mind and brain during the middle decades of the century, and finally Section V looks at the early years of James Crichton-Browne's career, and considers the legacy that he took with him to Wakefield.

The content of the chapter is necessarily selective: to cover all advances in psychology and psychiatry in the period would require several volumes, beyond even the remit of a thesis. It will concentrate on a few significant figures, whose contributions had some legacy in or impact upon the young Crichton-Browne and the men he gathered around

him at the asylum. An underlying aim of the chapter is to show how linked the worlds of asylums and of the mind and brain sciences were in this period, a fact which many previous histories have failed to consider.[70] The separation of time between the active years of W.A.F. Browne and his son means that they each faced a very different intellectual and social milieu. The elder Browne was an important figure in carving out the medically-based asylum as an important institution, so that by James's time the central, public role of asylums was established. However, much of the hope and optimism regarding the curability of insanity that was precipitated by Browne had faded by the time Crichton-Browne became an alienist, and instead asylums were seen rather as functional store-houses for problematic individuals. Crichton-Browne fought to establish again that asylums could achieve more than simply controlling the mad and, like his father, he attempted to build the asylum of which he was in charge into a model of what he believed an asylum could be. At a familial level, he directly inherited the ideas of his father, whilst as an asylum manager he was professional heir to his father's work, bestowed with the problem of making his establishment an active and profitable component of both science and wider society.

II. Edinburgh Debates: W.A.F. Browne in the Phrenological Ferment

The bumpy history of phrenology in Britain is well documented.[71] In the final years of the eighteenth century, the Viennese physician Franz Joseph Gall (1758-1828) developed a novel system, which described the human (and animal) mind as composed of several innate and distinct faculties, or propensities, each of which has its seat in a separate organ of the brain. The relative power of each faculty reflected the size of its associated organ, Gall argued, and this could be determined by examining the contours of the skull, which were shaped by the underlying brain.[72] His ideas spread around Europe in the new century – in large part through his own itinerant lecturing, aided by Johann Gaspar Spurzheim (1776-1832) – where they were met with both praise and criticism. Interest in Gall's new science was piqued in Edinburgh as early as 1803, but it was not until the late 1810s that it became a subject of great contention, when a particularly scathing report on phrenology in the *Edinburgh Review* drew Spurzheim to the city to defend the doctrine.[73] Spurzheim's

[70] Notable exceptions to this, as already noted, include: Bynum (1981; 1985); Clark (1981; 1982; 1983); Cooter (1981); Jacyna (1980; 1982).

[71] Some of the key secondary texts on phrenology in Britain include: Cooter (1984); de Giustino (1975); Shapin (1979a; 1979b); Stack (2008); van Wyhe (2004); R.M. Young (1970).

[72] Gall never referred to his system as phrenology, but that this term was coined in 1815 by the English physician Thomas Ignatius Maria Forster. See Cooter (1984) pp. 59-64. On the early development of Gall's ideas, see van Wyhe (2002).

[73] Gordon (1815) p. 250, wrote of 'the trash; the despicable trumpery, which two men, calling themselves scientific inquirers, have the impudence gravely to present to the physiologists of the nineteenth century, as specimens of reasoning and induction.' See Cantor (1975) pp. 197-200, for further details.

lectures in the Scottish capital between 1816 and 1817 earned him a dedicated following, notably including the Combe brothers, George (1788-1858) and Andrew (1797-1847); and these phrenological disciples went on to form the Edinburgh Phrenological Society in 1820, and to commence publication of the *Phrenological Journal* in 1823. A storm arose over phrenology, as supporters and critics of the new science argued their cases in the lecture halls, pamphlets and periodicals of the city. Only in the 1830s did the Edinburgh debate begin to cool, although this by no means marked the end for phrenology. With the publication of George Combe's *Constitution of Man* in 1828, phrenology reached a much larger audience across Britain, where it was presented as the basis for good moral and social behaviour built on nature's laws.[74] It was hugely popular with the reading public. Yet criticisms of phrenology continued to grow, and by the middle of the century the various objections to Gall's system had made it untenable even to many of those who had earlier been its proponents. It fell into disrepute as a scientific doctrine as the century progressed, increasingly becoming the preserve of only a select few medical practitioners and an assortment of practical 'bump-readers' providing services to the working classes.[75]

Far more was at stake in the rise of phrenology, however, than just an alternative method of studying the mind. Ostensibly, Gall had argued – more convincingly than anyone before him had – the brain alone is the organ of mind, and therefore it is the brain that should be the object of study to understand the mind's operations. As Combe saw it, 'Philosophers and divines', until now, 'each assumed his own consciousness as the standard of nature'. Yet with phrenology the 'natural constitution' of the mind is made clear; 'the organs of the mind can be seen and felt, and their size estimated'.[76] Phrenology made study of the mind a biological science: just as the organs of the body are observed to understand their physiological functions, so the individual organs of the brain can be observed to understand their mental functions. As an approach to understanding mind, it stood in apparent opposition to the dominant school of 'moral philosophy' that had been cultivated in Enlightenment Edinburgh.[77] For the moral philosophers of the city, the mind was an immaterial, indivisible entity, accessible only through personal reflection. Philosophy of mind represented a strong and influential tradition in Scottish intellectual thought in the eighteenth century. It was no monolith, as in fact a deep divide ran between the views and followers of David Hume's associative ideas, and Thomas Reid's 'common sense'

[74] The full title of Combe's work was *The Constitution of Man Considered in Relation to External Objects*. Secord points out that though first published in 1828, it was with the production of a cheaper 'People's Edition' in 1835 that its popularity soared, with eighty thousand copies sold in Britain by 1848. See Secord (2000) pp. 69-76. For more on Combe's work, see: Cooter (1984) pp. 101-133; Stack (2008) pp. 79-94; van Wyhe (2004) pp. 96-164.
[75] See Cooter (1984) pp. 256-271.
[76] G. Combe (1847) p. 56.
[77] For background on moral philosophy, see: Davie (2001); Dixon (2003) pp. 98-134; R. Smith (1997) pp. 215-259; Staley (2004).

philosophy; a divide which continued to influence Scottish philosophy well into the nineteenth century, as each generation 'vigorously debated the principles of metaphysics with the previous'. Yet they all shared in the same 'programme of science based on the experience of particulars.'[78] This programme was, as the subtitle to Hume's *Treatise of Human Nature* had clarified, 'an attempt to introduce the experimental method of reasoning into moral subjects'.[79] Mind was what set humans apart, and its workings and relation to nature were understood through introspection.

It was from the moral philosophers of the city that many of the most vociferous and comprehensive attacks on phrenology came. From very early on, phrenology was derided by such men as a form of 'quackery' or pseudoscience.[80] Dugald Stewart, Thomas Brown, John Wilson and William Hamilton – philosophers who at various times held chairs at the University of Edinburgh – all took to print to criticise and satirise the phrenologists.[81] They were joined in their assault by prominent anatomists such as John Gordon, John Barclay and Charles Bell, their objections taking on a variety of forms. The anatomical basis of phrenological claims was assailed on technical details. The presence of the frontal sinuses, the apparent absence of delineated areas in the cerebral hemispheres, and the artifices and errors of their dissecting techniques were all held up as proof of phrenology's failings.[82] On philosophical grounds, the faculties of Gall's system were criticised by Brown for having, according to Cooter, 'reified or lent a misplaced concreteness to the faculties of mind that in the metaphysics of Reid and Stewart were really only reflective concepts.'[83] Where the common sense school spoke of the mental faculties of memory, imagination etc., phrenology spoke of the faculties or propensities of acquisitiveness, veneration, destructiveness and so on. The traditional faculties were a means by which to consider the workings of the mind, but with Gall, Young explains, the 'abstract, metaphysical, speculative faculties of the philosophers' were abandoned for those fundamental faculties that are found though observation of 'the habits of animals and of the moral and intellectual

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[78] Davie (2001) p. 3.
[79] Hume (1739).
[80] Cooter (1984) p. 22, argues that 'from the commencement of its career in Britain [phrenology] was often seen as pseudoscientific and pseudophilosophical'. van Wyhe (2004) pp. 25 -26, contends however that initial reception was sympathetic, and that it only became seen as problematic or even dangerous after 1806.
[81] Stewart, Brown and Wilson were successive incumbents of the Chair of Moral Philosophy between 1785 and 1851, and Hamilton became Professor of Logic and Metaphysics between 1836 and 1856: having lost out to Wilson in a political campaign for the former chair in 1820, Wilson emerged victorious over George Combe in the contest for the latter.
[82] This has been shown by Shapin (1979b). The frontal sinuses – cavities found in the bones of the face and skull just above and to the sides of the nose – were seen to disprove the phrenological notion that the skull reflected the shape of the brain, whilst the difficulty in observing any separation in the cerebral cortex was provided as evidence that it was not divided into many organs as phrenologists claimed.
[83] Cooter (1984) p. 25.

characters of individuals in nature and society.'[84] The most damning criticism of all, though, was the charge of materialism. In the febrile political atmosphere of early-nineteenth century Edinburgh, phrenology was in dangerous territory, dividing the mind and spreading its constitutive elements across the brain. Apparently irreligious and radical, it was a challenge to conservative and theological orthodoxy.[85]

As a multitude of historians have noted, the division between phrenology's critics and its supporters also reflected the way individuals on each side aligned with various prevailing attitudes, indicating where they stood in relation to a whole host of professional, political, philosophical and religious issues. Whilst detractors were generally Whig-supporting established members of a cultural and economic elite – like the university-based philosophers – phrenology itself remained an 'outsider' activity, never being accepted onto the Edinburgh School of Arts curriculum but becoming popular among the middle and higher-working classes, who could see talks in the medical societies and mechanics' institutes of the capital. Indeed, though phrenology was never a part of university education, it did attract much interest from young doctors in medical training in Edinburgh. Phrenological dissections were considered superior to those done by the city's older anatomists, and its explanations brought mind into the realm of the natural world as a subject of study. It was from the medical profession, particularly the growing number therein concerned with the study and treatment of lunatic patients, that the strongest support for phrenology came. W.A.F. Browne, who was a medical student in Edinburgh through the mid-1820s, made his allies firmly amongst the phrenologists.

Browne's early adoption of phrenology can be understood in the light of this division. Becoming a phrenologist, indeed even choosing a medical career in the first place, is exactly what might be expected of an ambitious young man 'clinging precariously to gentlemanly status' in the late-Georgian period. According to Scull, in Edinburgh at the time 'younger professionals with weak or deficient kinship ties or other social linkages', like Browne, gathered around phrenology, challenging the *ancien régime* of the Scottish elites.[86] Desmond and Moore go further: for them, Browne was a radical and most outspoken reductionist, who shocked even Charles Darwin with the vigour of his beliefs. They suppose him to have been a conspicuous materialist, driven in large part by anti-clerical or even anti-religious motives, attacking the natural theology of Charles Bell in

[84] R.M. Young (1970) p. 26.
[85] See: Jacyna (1983); Stack (2008) pp. 33-46; van Wyhe (2004) pp. 72-95.
[86] Scull (1991b) pp. ix, xii. This point is reflected by van Wyhe (2004), who argues that phrenology gave personal authority to its adherents.

arguing that the human mind was reducible to the activities of the brain.[87] Such arguments were made in public, in his student days, to the Plinian Society, a student organisation of which he was a member, where phrenology met with great support. 'Phrenology was irreverent; the students liked it.'[88]

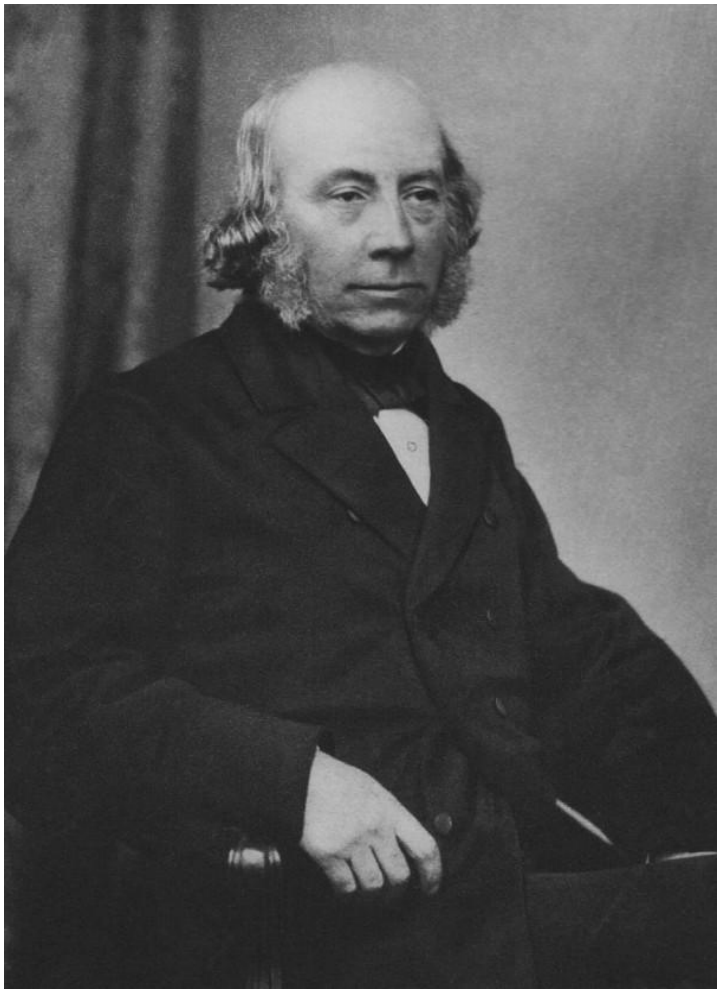

Figure 1.1: William Alexander Francis Browne, M.D.
[Easterbrook (1940) Plate 10]

Browne became close friends with George and Andrew Combe, the brothers who did more than anyone else to raise the profile of phrenology in Britain and to give it the distinctive moral and political values that it is now readily associated with. It is difficult to tell whether the friendship or the phrenology came first for Browne: both were to last the

[87] See: Desmond (1988) pp. 67-68; Desmond and Moore (1991) pp. 31-33. The Plinian Society deleted his speech attacking Charles Bell from their records, even deleting the entry from the week before stating that Browne was going to speak.
[88] Desmond & Moore (2009) p. 35. In this book, Desmond and Moore present phrenology not as a radical or reforming science, but a vehicle for a conservative, racist view that separated white, protestant Europeans from other, apparently inferior races.

rest of his life, although they hit rocky patches along the way. In any case, they served him well. In his first stint in Edinburgh, ca. 1823-1828, he obtained his licentiateship from the Royal College of Surgeons (1826), became a member of the Edinburgh Phrenological Society (1824), and was at times student president of the Royal Medical Society (1826), the Royal Physical Society (1827), the Hunterian Medical Society (1827) and the Plinian Society (1827). In 1828, he was 'entrusted with the care of a private mental patient', with whom he proceeded to travel around Continental Europe. Recuperation in new environments and gentler climes was then a common treatment for patients from wealthier families.[89] There are no further details of the arrangement, though it seems likely Browne was chosen for the task because of his phrenological credentials. As sociological historians would point out, families of rising wealth in Edinburgh at the time who could afford such care were precisely those to whom phrenology would have appealed. Crucially, the appointment introduced Browne into the world of asylums and the treatment of insanity, an introduction he took full advantage of.[90]

Over the next few years, as Browne moved around Europe, he 'attentively examined the arrangements and mode of treatment in some of the most celebrated asylums in the different countries through which [he] passed.' Such an opportunity simply was not available in Britain, Browne claimed, where the asylums were 'shut, not merely to the public, but to the medical profession'.[91] He was convinced that Parisian hospitals represented the apotheosis of asylum study and treatment at the time, and so chose to spend the summer and autumn of 1832 there, under the tutelage of Esquirol and Pariset, French successors to Philippe Pinel, the celebrated father of modern asylum treatment. When he returned to Scotland, living in Stirling, Browne re-entered the world of Combean phrenology, lecturing again in the city whilst contributing several articles to the *Phrenological Journal of Edinburgh*, one of which – on the loss of the faculty of language as a result of damage to the anterior lobe of the cerebrum – was published, shortened, in that well-known radical publication, the *Lancet*.[92]

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[89] Easterbrook (1940) p. iv. Quote taken from Browne's application to the Montrose Royal Asylum in 1834. Browne did not leave Edinburgh in 1828, as his application implied. Rather, he stuck around in Edinburgh at least until January 1829, as he was present to witness Dr Munro's dissection of William Burke (of Burke and Hare fame), whose skull and brain he described in detail to George Combe. Burke apparently had a large cerebellum and unnatural prominences above the ears, and a skull that was 'bullet-headed', but which indicated 'a moderate share of Veneration & Benevolence'. W.A.F. Browne to G. Combe, 30 Jan. 1829 (Combe Papers, National Library of Scotland, Edinburgh, MS 7223, ff. 31-34).

[90] For more on Browne, see: Harper (1955); Scull (1991b); and his entry in the *ODNB*.

[91] Easterbrook (1940) p. iv.

[92] W.A.F. Browne (1833). It is interesting to note that the original paper in the *Phrenological Journal* was called 'On Morbid Manifestations of the Organ of Language, as Connected with Insanity', whilst the version published in the *Lancet* was titled 'Derangements of the Faculty of Language from Injury to the Anterior Lobe of the Cerebrum'. The overt phrenological reference to cerebral organs was removed, probably for the benefit of the *Lancet's* broader audience.

His interest in insanity was established, and so in the summer of 1834, with a very helpful letter of recommendation from George Combe, he applied for and was appointed to the role of medical superintendent at the Montrose Royal Asylum. Browne felt more than qualified for the job, declaring to Combe that

> from the philosophical principles which I have long embraced & acted under, I possess a power of analysing, guiding & governing the human mind, whether healthy or diseased, which is not, I regret to say, extended to most medical men.[93]

The 'philosophical principles' to which he referred were phrenological, which undoubtedly did provide Browne with a concrete method for understanding and treating the mind. However, it was erroneous for him to suppose that his candidacy was made unique by his phrenological ideals, as his (soon-to-be) fellow alienists were generally among the most prominent phrenology supporters in Britain at the time.[94] Sir William Ellis, who was the first superintendent at the West Riding Lunatic Asylum (1818-1831) and the first alienist to be knighted in Britain, was a devoted phrenologist, even setting up a phrenology society in Wakefield. Matthew Allen, Forbes Winslow, Disney Alexander (physician at Wakefield), John Connolly, Richard Poole (Browne's successor at Montrose), and many lesser well-known men too were all phrenologists charged with running or working in asylums.[95]

For a number of reasons, as Cooter has written, 'phrenology between the 1820s and 1840s came to dominate psychiatric thought'.[96] Besides being a social tool, utilised by young medical men in their challenge to established practitioners, it also placed medical psychology firmly in the realm of anatomy and physiology, the medical sciences favoured by the new generations for whom all diseases were presumed to have an organic basis in the body. It made psychology (understanding the mind) and alienism (the treating of it) activities of medical materialism; and in doing so it wrested such practices from the old guard of physicians, the academic philosophers, and the moral-dispensary of the clergy.[97] Furthermore, the act of cranioscopy, ridiculed by some though it was, gave alienists a systematic and practical way of assessing patients to allow an individually tailored therapy. Put in these terms, the uptake of phrenology amongst alienists seems perfectly sensible. Indeed, it was more that phrenology led him *to* the asylum – Browne was a phrenologist before he was an alienist. He wrote, two years after his appointment at Montrose, that:

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[93] W.A.F. Browne to G. Combe, 7 Apr. 1834 (Combe Papers, MS 7232, ff. 37-39).
[94] See: Bynum (1981); Clark (1982); Cooter (1981), all of whom make this point.
[95] See Ellis's entry in the *ODNB*. For more on all these, and other phrenological followers, see Cooter (1989).
[96] Cooter (1981) pp. 58-59.
[97] On 'medical materialism', see James (1902) Ch. 1.

> [in] the exercise of my profession I have been enabled by the aid of Phrenology to be of essential service in directing the education of the young as a protection against nervous disease, & in removing or alleviating the various forms assumed by Insanity in the mature… and now that I have been entrusted with a large Asylum, I am inclined to attribute any little success that may have attended my efforts to ameliorate the condition of those confided to my charge, to the same cause.[98]

Phrenology worked as Browne had declared it would. So convinced was he, in fact, that he subjected his colleagues to a small test, sending out a bust of a patient suffering from monomania to see if they could tell from the unusually shaped skull 'the nature of the monomania' under which he laboured. Browne wanted to illustrate the proposition that 'ceteris paribus, the delusion, in insanity, takes the direction of the predominating organs & to test the powers of my friends in applying one of the principles of our common needs.'[99] His friends complied, and exceeded his expectations in their successful descriptions, confirming 'the capabilities of phrenology in removing some of the difficulties in mental diagnosis.'[100] Phrenology was thus central to Browne's understanding of insanity, and was to remain so in some form for the rest of his career. It was conspicuously underplayed, however, in the work for which he was, is, and ought to be most famous.

III. Phrenology and Pragmatism in *What Asylums Were, Are and Ought To Be*

Late in 1836, Browne gave a series of five lectures to the managers of the Montrose Asylum and a host of other local dignitaries, on the nature of insanity, its prevalence in modern Europe, and on the role of asylums for treating the mad in the past, the present and the future. In the following May the lectures were published as a single volume entitled *What Asylums Were, Are, And Ought To Be*, in the hope that 'a plain and clear statement of facts by a practical man might reach and influence those who administer either by their opinion or by their power to the necessities of the "poor in spirit"'.[101] It became an important and widely read document of the appalling abuses of the old asylums and the failings of the current generation, and a utopian description of what new, modern asylums could be. The significance of the book, as Scull has expounded, lay in the way it acted as a clarion call for the movement of asylum reform in the late 1830s and 1840s, which culminated in the Lunacy Act and County Asylums Act of 1845 for England and Wales, and eventually the

[98] W.A.F. Browne to Right. Hon. Lord Glenelg, 15 Mar. 1836 (Combe Papers, MS 7237, ff. 84-85).
[99] W.A.F. Browne to John Pringle Nichol, 24 Dec. 1835 (Combe Papers, MS 7234, ff. 53-74).
[100] *Ibid.*
[101] W.A.F. Browne (1837) p. vii.

formation of the Lunacy (Scotland) Act in 1857.[102] Browne spoke to a large audience, both inside and outside the profession. Interest in the treatment of the insane was considerable, having been a topic of great debate and campaigning since the early years of the century, when the full horrors of the mysterious madhouses had first been made public. The medical men who had run the old asylums – usually well-heeled and well-connected physicians – had been incriminated in the appalling conditions created by the 'trade in lunacy'.[103] Consequently, throughout the 1810s, 1820s and 1830s the privileged role of the medical profession in treating mentally ill individuals was under question. Moreover, a lay movement, driven by various moral, political and religious motivations was eager to see new asylums taken out of the hands of the medical elite.[104]

Although several new institutions had been built in Britain as a result of the 1808 County Asylums Act, their role, rationale and regimen, even their very existence, was under dispute. Browne's book was read on both sides: for men of medicine it provided a justification for the role of their profession in treating the insane; to lay reformers it explained and defended the full potential of asylums if operated under correct practices. Conservative resistance, however, stood against the idea of centralised, state-operated asylums paid for by compulsory taxation. Such resistance was at its strongest in Scotland, where Calvinist belief in voluntary charity dominated the Poor Law system. Even Browne himself defended Scottish charity institutions, only relenting some twenty years later under the pressure of American reformer Dorothea Dix.[105] *What Asylums Were, Are, and Ought To Be* was an important piece of propaganda in the cause of those who wanted asylums built and organised according to medical principles. Browne had 'no claim to originality' in the book, as he provided no new evidence but rather assembled existing facts to convince his audience of the need for, and possibilities of, remodelling the psychiatric landscape of Britain.[106] His skill was as a leader, marshalling evidence and, indirectly, people, to defend medical prerogatives in asylums.

Browne first presented his audience with an account of the nature and classifications of insanity, although, contrary to his earlier, private claims, he did not overtly present phrenology as a tool in the cause of alienism, leading Andrew Combe to comment on a pre-print version of the book that '[i]n the first sheet there is no allusion to it, and it therefore

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[102] See Scull (1991b), repeated in Scull, MacKenzie & Hervey (1996). For more on Scottish lunacy laws see Andrews (1998b). The lunacy laws affecting English asylums will be discussed further in the following chapter.

[103] For background on eighteenth-century asylums, see: Andrews & Scull (2003); Parry-Jones (1971); Porter (1987).

[104] See M. Brown (2006) for an introduction to the lay campaigns early in the century.

[105] See correspondence between W.A.F. Browne and Dorothea Dix (Houghton Library, Harvard University, bMS Am 1838).

[106] W.A.F. Browne (1837) p. viii.

seems *possible* that you do not mean to notice it.'[107] When it was published, however, Browne dedicated his work to the younger Combe, as an acknowledgement of his 1831 *Observations on Mental Derangement*, a book which had been subtitled an *Application of the Principles of Phrenology to the Elucidation of the Causes, Symptoms, Nature and Treatment of Insanity*. Browne's vision of the asylum was influenced by Combe's tome: it had been a comprehensive account of the utility of phrenology in tending to the insane, pointing out that even those alienists who claim to reject phrenological principles

> have perhaps derived it through the unsuspected medium of some continental writer, who has adopted, without acknowledging, the phrenological principles, [and] are persons who, not knowing what Phrenology is, and fancying it to be something extremely absurd and fantastical, positively dread being considered as either advocates of, or believers in, the new views.[108]

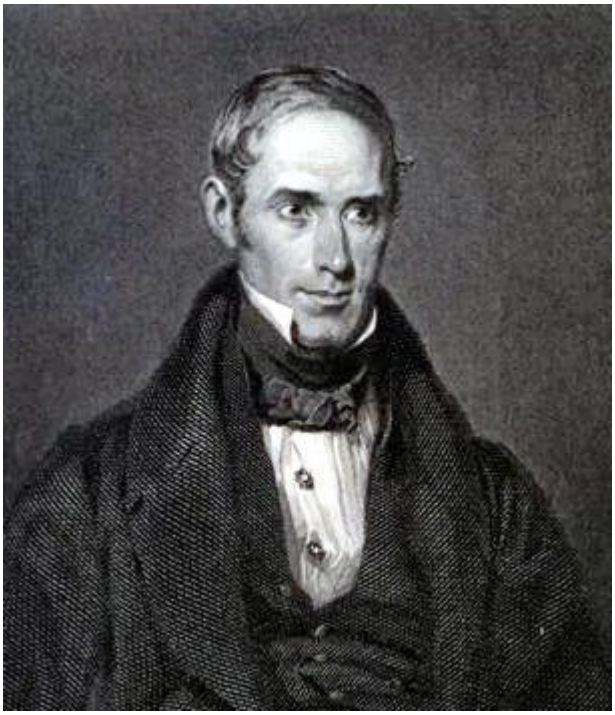

Figure 1.2: Andrew Combe
[G. Combe (1850) Front Plate]

Nonetheless, Browne ignored Andrew Combe's advice to include more phrenological terms in his book, explaining his decision in the preface.

> To those acquainted with the doctrine of Phrenology, the extent of my obligation in this particular case, and throughout the work, will be readily recognised; and to those who are still ignorant of

[107] A. Combe to W.A.F. Browne, 28 Jan. 1837, quoted in G. Combe (1850) p. 280.
[108] A. Combe (1831) p. xxi.

> these doctrines, I have to offer the assurance that Insanity can neither be understood, nor described, nor treated by the aid of any other philosophy […] While, however, I have constantly availed myself of the principles, I have avoided the phraseology of the science, first, because my original auditors were not, and my readers may not be phrenologists; and, secondly, because my object was not to advocate or promote particular truths, but to employ and apply these in the elucidation of the object in view.[109]

Both Browne and his successor at Montrose were appointed as known, committed phrenologists, so it seems likely that at least some of his auditors would have been familiar with the science. Nevertheless, his avoidance of overt references to phrenological terms was an understandable one. The language of phrenology could be esoteric and might have passed by anyone not already familiar with it. Besides, Andrew Combe's book had covered this ground in depth already. It was expedient to play down the role of phrenology in his thinking, when the aim of his book was to appeal to the widest possible audience for support in the reform of asylums. Phrenology was already a disputed science, unlikely to help convince anyone that was not already a follower, and Browne is likely to have learned from his Plinian Society days that courting controversy could be unhelpful. In this respect, it is noticeable that W.C. Ellis's book on insanity, published the following year, was also circumspect in mentioning phrenology, despite that author's own phrenological credentials.[110]

Yet, though he tried to avoid the phraseology of phrenology, he actually could not entirely. When Browne described the four classes of powers within the mind – instinctual, pro-active, intellectual and observing – he described the second as 'sentiments where there is a vivid emotion superadded to a propensity to act; among these are feelings of pride, veneration, hope, &c.'[111] These were typical examples of the 'affective' faculties described by Gall, which were each housed in separate organs of the brain. Again, when later discussing the use of rewards for patients at an asylum, Browne stated that

> as the minds of the lower orders are at present constituted, the most powerful stimulus is gain, and if by addressing ourselves to the propensity to acquire, we can subdue more violent propensities, or still the agitation of disease, it would be imprudent and unphilosophical to reject the aid of such an agent.[112]

Here was a perfect account of phrenological reasoning used to explain the simple expedient act of rewarding certain behaviour, what in modern parlance would be called a 'token economy'. Phrenology was ingrained in Browne.

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[109] W.A.F. Browne (1837) p. viii.
[110] See W.C. Ellis (1838). See also Cooter (1981) for more on Ellis.
[111] Browne (1837) p. 3.
[112] *Ibid.*, p. 197.

Beginning his lectures by asking 'what is insanity?' he explained that the question could be answered 'in two senses; either philosophically or practically.'[113] He explained that there are both philosophical-scientific and legal versions of insanity, and that alienism sat in an ambiguous position between them. The men who ran asylums balanced their adopted laws of nature with the vagaries of reality, where patients provided constant tests for theories, and they were thus necessarily composite in their approach to the diseased mind. In other words, pragmatism ruled: principles were sharpened by practice, and phrenology formed only a part of his armoury of tools for treating the insane. Even Andrew Combe, in his *Observations*, had alluded to the pragmatic use of phrenology in the treatment of the mentally ill:

> even if phrenology only approximate more nearly to the truth [than alternative approaches], the assistance which it will afford must be proportionally more valuable; and, therefore, its leading principles, being already established on an irresistible induction of facts, we are authorised, by reason and analogy, to make use of, so far as they are applicable, as freely and authoritatively as we do of the general principles of chemical and natural science.[114]

In the asylum, phrenology was a pragmatic science.

'[H]owever interesting and edifying these investigations may be to mere philosophers,' Browne noted of philosophical debates over the demarcation between insanity and normality, 'the philosophical practitioner ought to make the inquiry invariably bear reference to the question'.[115] The question being: what was best for the patient? Alienists were not 'mere philosophers', but 'philosophical practitioners', dealing with living, diseased minds, not conceptualised ideals. His approach echoed the phrenological debates in Edinburgh of the 1820s, where phrenology's supporters had claimed theirs was a useful and verifiable science as opposed to the speculative and impractical philosophy of mind taught at the universities. Such a claim was made doubly potent in the hands of asylum men, who had the full weight of institutional practice behind them. Indeed, some years later when the alienists of Great Britain formed their own publication, *The Asylum Journal of Mental Science*, the first editor J.C Bucknill defended the title of the new volume by arguing that

> our practical mental science would fairly bear the same relation to the mental science of the metaphysicians as applied mathematics bears to pure science. In both instances the aim of the pure science is the attainment of abstract truth; its utility, however, frequently going no further than to serve as a gymnasium for the intellect. In both instances the mixed science aims at, and, to a

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[113] *Ibid.*, p. 2.
[114] A. Combe (1831) p. xxii.
[115] W.A.F. Browne (1837) p. 8.

> certain extent, attains, immediate practical results of the greatest utility to the welfare of mankind.[116]

In the years between Browne's and Bucknill's words, the 'ought' of the philosophical practitioner had become a firm 'is'. The positioning of alienism as pragmatic, physically-based practice as opposed to the philosophical posturing of academics was a recurring theme throughout the nineteenth century.

The one tenet of phrenological thought that Browne had no qualms in repeating in 1837, and which would have met with support among a large number of his professional colleagues, was the physical basis of mind and its possible derangements. He stated in clear terms that insanity is 'inordinate or irregular, or impaired action of the mind, of the instincts, sentiments, intellectual, or perceptive powers, depending upon and produced by an organic change in the brain… [and] being strictly a bodily disease, the nature, intensity and aggravations of insanity must be regulated, in a great measure, by the relation of the brain to the other organs of the body.'[117] Browne happily asserted that 'the integrity and health of [mental] powers depend upon the structure of the brain and its coverings', though 'what manner this connexion between mind and matter is effected, is not here inquired into. The link will, perhaps, ever escape human research.'[118] It was not complacency to eschew the question of how mind and brain related to each other – for an alienist like Browne, it was more than enough to know that the link did exist. Evidence came from post-mortem examinations of the insane, where he asserted that the 'prevailing opinion at present is, that no cases do occur where no pathological condition can be observed' and that those recorded which showed no pathological condition 'owe this feature to the negligence or ignorance of the narrator.'[119] Wherever mental illness was present, organic disease of the brain was the cause, and he was able to call upon the names of several respected asylum superintendents or physicians to agree with and prove his claims.[120] Though Browne was only one of several alienists concerned with the brain, his book constituted a noteworthy contribution to such developments, with its broad readership and powerful message meaning many readers took on his description of the physically situated mind as they consumed the grand, sweeping statements on the role of asylums.

Having regaled his audience with the aetiology and nosology of various mental derangements in lecture one, Browne spent his second lecture asking 'What are the

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[116] Bucknill (1861) p. 137. Bucknill's statement in this article was later reprinted on the front page of the journal for many years in the late-nineteenth and early-twentieth century.
[117] Browne (1837) pp. 6-7.
[118] *Ibid,*. p. 4.
[119] *Ibid.*, p. 6.
[120] These included: Dr Davidson of the Lancaster Asylum; Dr Wright at Bethlem; Dr Haslam at St. Lukes; Dr Crowther at Wakefield; and several more.

Statistics of Insanity?' The numbers worryingly suggested that the incidence of mental disease was rising across Europe and America, though he did not equate this with the growth of modern society, but with the perennial 'vices, passions, corruptions, and weaknesses of our nature', which 'neither constitute, nor are they necessarily connected with, civilization'. To be sure, there were cases where mental disease was innate in the individual, but – utilising the language of heredity – he declared that

> even when a hereditary taint creates danger where it would not otherwise exist, it must be remembered that it may have originally been contracted through the ignorance or error of some individuals, in cherishing some predominating passion, or by intermarriage with an impure stock.[121]

Whilst at the level of an individual mental illness was a physical affection, at the level of the population – epidemiologically, so to speak – the causes of insanity were moral. Improving the nation's moral standards and removing the distractions that endanger the hereditarily at risk could thus reduce the prevalence of insanity, but once it had occurred in an individual a physiological development had been enacted, bringing it firmly under the jurisdiction of medical practitioners. There was no reason for alarm, however, for although

> [m]edical men long acted as if nothing could be done with any chance of success in insanity [and the] suspicion even arose that the disease could not be removed, that it did not come under the ordinary rules of art, Drs. Munro, Burrows, and Ellis, declare... that they cure ninety out of every hundred cases. Such a result proves, so far as the practice of these observers is concerned, that instead of being the most intractable it is the most curable of all diseases.[122]

Unsurprisingly, Browne saw asylums as the answer to the growing problems of insanity; places where the flourishing methods of Munro, Burrows and Ellis could be replicated. It was his strong conviction that if asylums were 'properly conducted, were they what they ought to be, and pretend to be, hospitals adapted for all forms of mental alienation; then *all* forms would be alleviated by this mode of treatment.'[123] Having laid out the systematic and medically-based approach to the disordered mind, Browne asked if 'the arrangements made to effect the great end in view have been founded upon this knowledge?' In other words, had asylums utilised the understanding which was on display in lectures one and two? The answer was no. At this point then, Browne switched roles, swapping the scientific treatises befitting of an alienist in lectures one and two, for the emotive rhetoric of a reformer.

His third lecture, 'What Asylums Were', was an exposé of the horrors of the old asylums, organised to extract the maximum outrage and reforming fervour amongst his

[121] W.A.F. Browne (1837) p. 53.
[122] *Ibid.*, p. 69.
[123] *Ibid.*, p. 91.

audience. The hammers and chains, strait-jackets and cages, the starving, beating, bleeding and violence; all were the consequence of an unregulated and mis-directed industry which, even at its best, simply left 'the mind… to recover its native strength and buoyancy spontaneously', without the proper attention of scrupulous medical men. Still as deplorable to read now as it would have been to its original audience, the narrative Browne followed in speaking of early-modern madhouses was central to the story told by the psychiatric profession throughout the nineteenth and twentieth centuries, as asylum doctors contrasted the cruel and incompetent treatment of the mad in the past with the enlightened and accomplished practices of institutional care.[124] In lecture four, Browne took a subtler approach, as in clarifying what asylums are he had to show the great leaps made by his profession in recent years while at the same time highlighting just how much was still to be done. For a picture of the best of current asylum practice, he turned, understandably, to France, and the grand hospitals of Paris that he had been impressed by on his European excursions.

The sequel to the tale of eighteenth-century squalor and depravity began with Philippe Pinel, physician at the Bicêtre (an all-male hospital-cum-prison) in the French Revolutionary era. As the legend was presented, Pinel entered the Bicêtre at the height of The Terror, and struck the chains from the incarcerated men, releasing them from oppression like the freed political prisoners of the Bastille. In truth, Pinel took a gradual and experimental approach to reducing mechanical restraints, alert to the practical difficulties of maintaining order amongst a large number (200 or so) of patients.[125] Nevertheless, for Browne, Pinel's arrival at the hospital marked

> a total revolution in the opinions of medical men and legislators, respecting the insane, and in the principles upon which houses of detention are professed to be conducted. The application of these views has been tardy; but… has extended to the employment of means which promise to restore a proportion of those confined, to their places and duties in society, and to reconcile the remainder to their captivity.[126]

The means of promise was 'moral treatment', a therapeutic approach that came to dominate asylum practice in the first half of the nineteenth century, and whose legacy remained prominent within the profession until the middle decades of twentieth.[127] The doctor must adopt the 'ways of gentleness', whilst becoming an all-powerful figure in the life of the

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[124] *Ibid.*, pp. 98-133. The narrative Browne helped construct went mostly unchallenged until the twentieth century, as discussed in the introduction to this thesis.
[125] For more on Pinel and the stories constructed around him, see: Goldstein (2001); Vandermeersch (1994).
[126] Browne (1837) p. 138.
[127] Many in the psychiatric profession now still see a lineage between modern practices and moral treatment. For example, see G. Shepherd, J. Boardman & M. Slade (2008).

patient. By treating those under his charge in the most humane ways possible, he was to give the humanity within them the best chance of manifesting itself. This might mean providing tasks or distractions or even shock and repression of behaviour on occasion, but at all times the authority of the doctor was absolute, leading his patient towards correct behaviour as a parent teaches their children. With moral treatment, 'a sudden transition was made to a system, professing to be based on knowledge of the human mind'. Yet the transition was incomplete, falling short of a standard which was evidently attainable, 'chiefly because it is not founded on, or regulated by any broad or practical philosophical principle.'[128] Asylums needed a sound medical base if they were to fulfil their brief.

There was a clear problem, however, in tying Pinel's new methods to proper medical principles, for although Pinel was a trained physician, he disagreed with the fundamental doctrine of British psychiatrists: that mental illness was always a result of physical damage. In his 1801 *Traite medico-philosophique sur l'alienation mentale*, he wrote that although '[d]erangement of the understanding is generally considered as an effect of an organic lesion of the brain', such reasoning was, 'in a great number of instances, contrary to anatomical fact', and led to the pessimistic conclusion that most forms of insanity were incurable.[129] The belief in physical causes of mental ill health had a secure place among British alienists, since it brought diseases of the mind within the job specification, and the understanding, of the medical profession. It also garnered support on theological grounds. The rational, immaterial human mind had its provenance with God, whilst the brain through which it acted was physical, and prone to corrosion. Mental aberrations were thus best understood as the result of bodily imperfections, since a God-given mind was beyond the realm of ordinary, earthly decay. However, if the somatic conception of insanity was abandoned, as Pinel felt the pathological-anatomical facts compelled, then alienists were left with psychological illnesses whose problems could be cured by psychological means. Pinel's conception of the mind was indebted in this respect to the Lockean tradition – the mental philosophy of sensationalism and assocationism – which, as noted earlier, stood in opposition to phrenological reasoning.

In Britain, moral treatment became as influential as it had in Paris, but it followed a different path. After the mistreatment and death of a Quaker patient at the York Asylum in 1790, Quakers in the city, led by William Tuke, founded their own institution in 1796.[130] Tuke, a wealthy merchant, led the 'Retreat' under a system of moral treatment, which – though influenced by Pinel – took on a distinctive character. Instruments of restraint and coercion were not used, but instead discipline was internalised by the patient. Rewards and

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[128] Browne (1837) pp. 139, 141.
[129] Pinel (1806) p. 3.
[130] See: M. Browne (2006); Cherry (1989); Digby (1985); Donnelly (1983).

punishment were the tools to lead the insane to self-control, and religious faith was the ever-present guide towards normal, rational behaviour. With religious, rather than medical, men leading the Retreat, it appealed to the lay reformers of the early nineteenth century who were opposed to medical dominance. In Britain, it was thus the moral, and moralising, treatment from the Quakers, not that of Pinel, which formed the popular conception of asylum therapy. Yet for Browne, it was practical to credit the version derived from the medical Pinel rather than the religious Tuke. Even though the Quaker Retreat was one of the most prominent institutions for the insane in the world at the time, Browne mentioned it only once, dismissively and falsely stating that 'a practice somewhat similar to that here recommended, at one time received the sanction of the directors of the Retreat at York, but it does not appear to have been pursued to its legitimate extent.'[131]

By 1837, when Browne's book was published, the successes of moral treatment were widely acknowledged, and Browne could not realistically have hoped to discredit its methods, despite the fact that their philosophical and psychological basis appeared to stand in complete opposition to his own phrenologically-based, somatic understanding of mental illness. It seems he had no choice, in fact, but to incorporate it within his own prescriptive account of asylum practice: his task was to ensure that medicine still had a role to play.[132] In assessing this situation, Roger Cooter argued that an alienist could either accept moral treatment on purely pragmatic grounds, as something that worked but was not understood, or could turn to a phrenological explanation of moral treatment itself. Given the weakness of the former position, they turned to the latter, apparently for three related reasons:

> first, it offered a scientific framework based on organology that related psychological factors to brain function […] second, in explaining the nature of psychological insanity it suggested measures for its prevention; and third, it made the moral treatment of the insane the apotheosis of conventional morality.[133]

His explanation is persuasive. Phrenology could subsume moral treatment, making sense of its success as the exercise or repression of the relevant organs of the brain, whilst at the same time reasserting the necessities of self-discipline and improvement, values close to the hearts of phrenologists. Moreover it was flexible: madness could be caused either by the excess of, or disorder amongst, one or several organs of the brain; or it could be the result of

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[131] W.A.F. Browne (1837) p. 153.

[132] He was by no means the first alienist to address this predicament, and to defend the role of medical men in asylums. Thomas Mayo had remarked some twenty years earlier, in response to prevailing psychological approaches to madness, that 'to vindicate the rights of my profession over Insanity, and to elucidate its medical treatment, are the objects at which I have aimed.' G.M. Burrows, one of those alienists whom Browne had pointed to as a model of therapeutic success, 'viewed with regret the little confidence professed by benevolent conductors… in… the great efficacy of medicine in the majority of cases of insanity.' Quotes taken from Bynum (1981) pp. 46-47. See also Scull (1993) pp. 206-231.

[133] Cooter (1981) p. 79.

lesions in one or more. Only one aspect of Cooter's account does not quite ring true, which, as already mentioned, was that Browne's interest in phrenology pre-dated his work as an alienist by about ten years. This should at least restrain Cooter's statement that enthusiasm for phrenology among British alienists was 'the direct result of the doctrine's expedient arrival and popularization at a period when psychiatry, like the larger society, was in an unsettled transitionary stage.'[134] This is more than just semantic nit-picking: Browne's 'enthusiasm for phrenology' arrived well before his interest in insanity. Pragmatism was fundamental. Practising religion was undeniably an important part of moral treatment, and the supposedly anti-clerical and radical Browne went on to become one of the most famous supporters and proponents of it in the country.

Purely medical treatments were also available to Browne, however, and he was not afraid to use them. He declared in one annual report as a superintendent that the alienist operated under 'a duty that all new and powerful agents should be tried in the treatment of a disease which so often defies the ordinary resources of medicine.'[135] In accordance with his prescriptive account of alienism in general, he was liberal in the use of opiates,

> to such an extent as would startle those who repose confidence in the time honoured doses of days gone by. The quantities even alarmed those who were accustomed to deal with the singular power of resistance to medicine, which is often a characteristic of insanity.[136]

Browne's enthusiasm for chemical therapy was not universally shared by his profession however, and he did not dwell on the use of drugs in his lectures. Indeed, in the middle decades of the century a general enthusiasm for the use of drugs did not become more widespread, in spite of the increasingly medical, somatic view of insanity. Cost was an important issue, but also an increasingly pessimistic view of mental illness and a concurrent concern that drugs merely tranquilised patients into improved behaviour, meant they were not always utilised, as will be discussed in Chapter Three. For Browne, however, 'further investigation and experiment' were required to understand the assistance to be derived from particular drugs.[137]

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[134] *Ibid.*, p. 76-77.
[135] *Third Annual Report of the Crichton Royal Institution for Lunatics* (Dumfries: W.C. Craw, 1842) pp. 25-26. Also quoted in Scull, MacKenzie and Hervey (1996) p. 112.
[136] *Eighth Annual Report of the Crichton Royal Institution for Lunatics* (Dumfries: W.C. Craw, 1847) pp. 19-20.
[137] *Ibid*., p. 20.

IV. W.A.F. Browne's Model Institution and Mid-Century Models of the Brain

With evidence of what asylums should not be in place, it remained in Browne's final lecture to describe the model institution, even though it 'may appear to be a Utopia'. Merging the utilitarian concept of liberty with the requirements of an asylum, he argued that 'there ought to be as much liberty as is consistent with the safety of the whole community, and just as much restraint as is consistent with the happiness and recovery of each of the members'. By 'liberty', he meant 'the power of gratifying every innocent propensity, every justifiable desire, of pursuing every object which is calculated to inspire present pleasure, or conduce to the ultimate re-establishment of reason.'[138] The utilitarian aim to maximise the happiness of all patients was presented as an attempt to gratify the individual propensities of the phrenologically-understood mind. Browne's pragmatic approach did not stretch to all utilitarian ideas though, and on the subject of architectural plans, his thoughts for asylum building stood in contrast to Jeremy Bentham's popular 'Panopticon' vision for prison design.[139] In Bentham's model – which he had argued was appropriate for mad-houses too – an inspection tower stood central to the building, maintaining the constant appearance of supervision on all patients without revealing the presence of the supervisor. For Browne, however, it was important that attendants were frequently visible to patients, to create tranquillity rather than fear: the building was an important part of treating patients, and everything should be aimed towards cure, not incarceration. He asked his audience to

> conceive a spacious building resembling the palace of a peer, airy, and elevated, and elegant, surrounded by extensive and swelling grounds and gardens[…] The sun and the air are allowed to enter at every window[…] There is in this community no compulsion, no chains, no whips, no corporal chastisement [..] Such is a faithful picture of what may be seen in many institutions, and of what might be seen in all, were asylums conducted as they ought to be.[140]

Fortunately for Browne, his vision of the asylum had more impact than Bentham's.

Having read *What Asylums Were, Are, and Ought To Be*, in March 1838 Mrs Elizabeth Crichton approached Browne to offer him the position as head of a new asylum that was being built in Dumfries. Crichton was a wealthy widow whose husband had left money for the founding of a charity institution as she saw fit, and by 1838 her project had reached a stage where a superintendent was sought. She was impressed by Browne's ideas, and he in return was impressed enough by the new establishment to accept the offer. Thus, after a year of overseeing internal furnishing and further appointments, the Crichton Royal Asylum opened on June 3rd 1839, and Browne remained there until 1857, running it

[138] W.A.F. Browne (1837) pp. 203-204.
[139] See Bentham (1791) pp. 110-112.
[140] W.A.F. Browne (1837) pp. 230-231.

according to the principles he had made clear for how an asylum *ought* to be: this meant moral treatment, under medical control.[141] His work was seen as a success, and in 1843 the Belgian physician Dr C. Crommelinck, who had toured around Britain's asylums, stated that the Crichton Royal 'took first place among British Institutions in which the physician takes some account of scientific methods in the treatment of mental illness.' For him, the Quaker Retreat at York – so often held up as the model asylum – fell 'far short of the standard set by Dr. Browne of Dumfries, and still further below that of the Paris doctors.'[142]

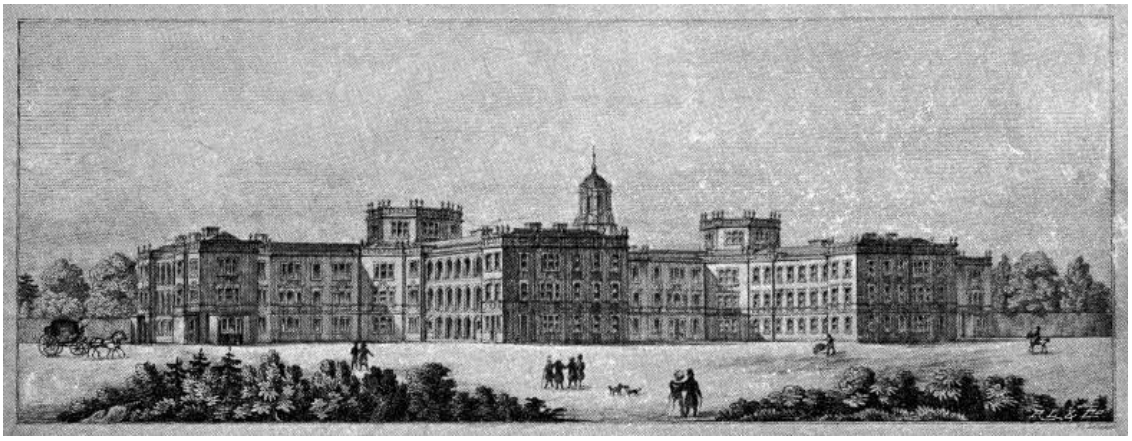

Figure 1.3: The Crichton Royal Institution
[Easterbrook (1940) Frontispiece]

Browne left the Crichton Royal in 1857 to take up a position as one of the first two Scottish Commissioners for Lunacy, a role that involved inspecting the conditions of asylum patients across the land, but which left him ample time to take his place as a popular speaker on the academic and public lecture circuit, a role for which he was suited. He retired from this position in 1870, when he suffered serious head injuries from a riding fall that left him almost completely blind, and he spent the last fifteen years of his life mostly out of the field, with few further notable contributions before his death in March 1885.[143] During the middle decades of the century there were significant developments in the mind and brain sciences, so that it is tempting to imagine Browne, in a somewhat isolated part of the country, becoming similarly isolated from the field as time progressed. Certainly, the duties of being a superintendent meant his written contributions diminished. Yet he

[141] See Easterbrook (1940) for a history of the institution.
[142] C. Crommelinck, 'Rapport sur les Hospices d 'Alienes de I'Angleterre' (1843), quoted in Walk (1954) pp. 832-833.
[143] The most notable exception to this was his paper on aphasia, contributed to the *WRLAMR*, which will be discussed in Chapter Four.

continued to grapple with such issues, as the phrenological ideas of his youth were debated and critiqued by a succession of scientific thinkers.

At the beginning of his career, W.A.F. Browne had looked to Paris as the pinnacle of asylum practice, where the hospitals freed from an old regime allowed men like Pinel and Esquirol to develop sophisticated and successful methods of treatment. It was in Paris also that experimental, scholarly discussions of phrenology were ever at their most advanced. Gall had reached Paris in the early years of the century, and quickly captured the attention of his contemporaries. He was, however, generally viewed with disdain by the scientific elite of the city – as most foreigners in Napoleonic France were – which gathered around the French Académie des Sciences. Between 1822 and 1825, on behalf of the sceptical Académie, the young physiologist Jean Pierre Flourens conducted a series of experiments on a variety of birds and frogs, carefully dissecting different sections of the brain cortex away to observe the effects on mental and physical processes. His results showed that the removal of supposed phrenological organs of the brain never resulted in the loss of specific faculties, as Gall and his followers led people to believe, but that the animal merely suffered from an overall loss of mental capacity, with the loss of general ability being proportional to the amount of cortical matter removed.[144] Flourens' physiological demonstrations were convincing – so much so, in fact, as to almost wipe out support for phrenology in Paris, and to deter serious testing of the validity of his results for around forty years.

In those intervening forty years, examinations of phrenology, when they did on occasion occur, were based usually on clinical and pathological records, the hallmark of nineteenth-century French medicine. One of the few exceptions came in the late 1820s, when the physician Jean-Baptiste Bouillaud described an experiment piercing the anterior part of a dog's cortex, leaving the dog generally less 'intelligent', as expected, but also specifically unable to bark, indicating the localisation of that function. Bouillaud was a phrenologist – 'the soul of the doctrine of localisation' between 1825 and 1860 – conducting experimental vivisection, in contradiction to the usual approach of phrenologists who were opposed to vivisection on both ethical and theoretical grounds.[145] Consequently his work was noted as simultaneously a defence of phrenology, and a betrayal of its humane principles. This backlash against Bouillaud angered Browne, who pointed out to George Combe

[144] Gall's followers had several answers to these results, including: that it was not possible to generalise from birds or frogs to humans; that Flourens had not been accurate in his dissections; that he was not able to accurately describe animal actions afterwards; that he had not removed the organs of both sides of the brain; and that removing an organ did not necessarily remove all behaviours associated with that faculty, as the other faculties would have compensated. See Clarke and Jacyna (1987) pp. 244-285; R.M. Young (1970) pp. 54-100.

[145] See Harrington (1987) pp. 35-42.

> the distinction between cruelty to animals, and the infliction of pain... the accomplishment of which promises to contribute to diminish the suffering, and increase the Happiness of mankind. The mawkish misnamed Humanity affected in the Controversy respecting Bouillard's experiments has quite disgusted me… Do these sticklers for humanity know that all the discoveries in Physiology have been effected by experiments performed on the lower classes of animals?[146]

In the language of utilitarianism, once again, Browne left behind a supposed tenet of phrenology – the avoidance of experimental studies – in favour of a pragmatic approach to medicine's ultimate ends.

Browne also played down other principles of phrenology in the light of new physiological discoveries derived from vivisection. In another telling letter to Combe in 1851, Browne wrote that in understanding the physical causes of insanity,

> it is absolutely necessary to adopt a composite system including Bell's, Marshall Hall's, [and] Feuchtersleben's discoveries & opinions. The subject extends far beyond the manifestations of unhealthy cerebral action and could not be, with any fairness or exactitude described as founded exclusively on Phrenology. [...] I stick to facts & ignore all names. In short I present to the rivals engaged with me a body of truth irrespective of sects, systems, terms & controversies. I wish I had an opportunity of submitting to you & others the mode pursued. You would at once see how orthodox I am without the symbols.[147]

Browne was still a phrenologist, but by 1851 he had united his knowledge of that science with the physiological ideas that had been developed during the first half of the century. The faculty psychology of Gall was still as viable a basis for the moral treatment of patients as it had ever been for him, but it did not exclude new facts, even if they were supposed to deny the truth of phrenology. It was expedient to limit references to phrenology, as it had been in 1837 when teaching, even as he 'would listen incredulously to the propagandisers [critics] of Phrenology while they are daily taught by its means: use it as a crux to solve difficulties & all men, besides, whether taught directly or indirectly, suggest their own theories and modifications upon the parent-stock.'[148] Browne saw that his pupils learned from phrenology, even generating their own phrenology-like ideas, whilst at the same denouncing it, a fact he was bemused by. Such was the totality of the 'composite system' he taught, in fact, that it is hard to know which orthodoxy he supposed himself to be: phrenological or physiological? It was not, in any case, orthodox for alienists to teach regular classes as he did. Browne was the first in Britain to attempt to educate asylum staff, providing a course of thirty lectures in 1854 to all the medical officers and attendants engaged in treating the insane. 'A certain amount of education and experience is expected in

[146] W.A.F. Browne to G. Combe, 25 Feb. 1832 (Combe Papers, MS 7228, ff. 14-15).
[147] W.A.F. Browne to G. Combe, 30 Apr. 1851 (Combe Papers, MS 7312, ff. 150-153).
[148] *Ibid.*

every artisan, is demanded from those entrusted with the care even of domestic animals', Browne wrote, 'but for those to whom the happiness and tranquillity of the human mind is consigned, no training is provided, no instruction accessible.'[149] Among those who were trained by Browne was William Lauder Lindsay (1829-1880), an assistant physician at the Crichton Royal in the mid 1850s. Lindsay shared Browne's composite approach to studying the insane mind, later publishing in the field of comparative psychology in his 1879 work, *Mind in the Lower Animals in Health and Disease*.

Those medical students who came to work in the asylum would already have been well-versed in the latest developments in anatomical and physiological understanding of the nervous system. In particular, after the work of Marshall Hall in the late 1830s, the concept of 'reflexion' became generally acknowledged as the mode of all nervous function, operating through the neural ganglia that had previously been identified by Charles Bell and François Magendie.[150] Progressively extending and applying these physiological sensory-motor findings up to the highest centres of the brain, 'physiological psychology', as it came to be known, superseded phrenology and philosophy-based psychology as the dominant conception of mind in Britain in the middle third of the century, inside both asylums and the academy.[151] The brain, and the mind – whether healthy or disordered – was understood as operating under a reflex model. A whole host of researchers were involved in this programme, but two men were particularly influential, and were part of both W.A.F. Browne's and James Crichton-Browne's lives: William B. Carpenter and Thomas Laycock.

Carpenter was a strong critic of phrenology – he declared himself to have rung the 'death-knell' for the science in a review he wrote of Daniel Noble's book on the subject in 1846.[152] On both comparative and anatomical issues he highlighted phrenology's flaws, and presented an alternative physiology of mind rooted in anatomical considerations. The human mind was split not into faculties but into levels: automatic reflexes, which were the most basic; instinctual behaviour, of only limited psychological function; and consciousness, the highest level, which was anatomically located in the cerebral cortex.[153] While all cerebral control of the body was mediated in the same way, through the reflex machinery Hall elucidated, there was a key difference between purely reflex and volitional actions, as the latter were dependent on the action of the will. The highest level, consciousness, interacting through the highest centres of the brain, was constituted and

[149] *Fifteenth Annual Report of the Crichton Royal Institution for Lunatics* (Dumfries: W.C. Craw, 1854) pp. 19-20. D.H. Tuke (1892) p. 860, noted that Browne was the first to provide classes to educate asylum staff. See also Bewley (2008) pp. 111-112.

[150] On the development of understanding of reflex function, see: Clarke and Jacyna (1987) pp. 101-124; Jacyna (1982).

[151] For more on mid-century physiological psychology, see: Danziger (1982); Daston (1982).

[152] Carpenter (1846).

[153] Quick (2011) pp. 95-96. Carpenter (1874) lays out his developed ideas fully. For background on Carpenter see: Danziger (1982); R. Smith (1973); R.M. Young (1970) pp. 210-220.

acted as a whole: this was the indivisible and non-material aspect of the human mind. In this respect, Carpenter shared a lineage with the philosophical thinkers in Edinburgh who had railed against phrenology earlier in the century.

Thomas Laycock shared much in common with Carpenter. They had studied together in London and were both persuaded of the need to understand human mental activities by reference to the reflex machinery of the nerves. However, for Laycock, reflex actions were *all* there was. Even the highest mental powers had to be understood in terms of non-psychological, basic nerve action, as there was no supra-added consciousness which interacted with body. Moreover, whilst Laycock was as much against the faculty psychology of phrenology as Carpenter, he never brought himself to attack the science in print, but rather praised its successes, and remained on good terms with two of its main proponents, George Combe and Browne. Combe was supportive of Laycock's successful application to the Chair of Medicine at Edinburgh in 1855 – it was a position that Combe himself had been blocked from at the height of the phrenology debates.[154] Once firmly in the Chair, Laycock also invited his good friend Browne – who had by this point left his post at the Crichton Royal – to give several lectures to his medical psychology students, and Laycock sought evidence from him in his continued researches.[155] There was perhaps more ground for phrenologists to disagree with Laycock's theories than there was with Carpenter's: Laycock could never accommodate the notion of psychological faculties, let alone cerebral organs, whereas Carpenter's system did not *a priori* disallow a mind made of specific propensities. Yet because Laycock, whose interests extended beyond physiology into medical psychology, sought a more parsimonious route, accentuating the common ground with Combe in his work, he avoided any conflict. This was pragmatism from the other side of the fence.

As elements of phrenology, in the hands of medical psychologists like Browne and Laycock, had been retained and developed through the middle decades of the century, so too the philosophical approach to mind – which stood in opposition to phrenology in the Edinburgh debates – underwent a similar transition, principally through the work of Alexander Bain (1818-1903). Bain, an Aberdonian philosopher in the associationist tradition, brought the tools of scientific investigation, including the new findings of sensory-motor physiology, to bear on the mental phenomena studied by philosophers. Spontaneous movements became linked with particular sensations in the brain, he argued, which in turn gave rise to ideas. The 'laws whereby sensations are transformed into ideas,

[154] See Quick (2011) pp. 115-122, for more on Laycock's election at Edinburgh.
[155] Two of these lectures, 'The Moral treatment of the insane' and 'Epileptics: Their Mental Condition', were published in the *JMS*. See W.A.F. Browne (1864; 1865). See Laycock (1875) for an example of his use of examples and evidence taken from Browne.

and thoughts give rise to other thoughts', were then the proper subject of philosophical inquiry.[156] Bain's work had an important influence on David Ferrier's localisation experiments, and in the development of psychology in Britain, as chapters four and five of this thesis will further explore. Indeed, in the earlier part of his career Bain was, as Young has pointed out, also receptive to phrenological theories, accepting that certain faculties were specifically localised in the cortex of the brain. His 1861 book, *On the Study of Character, including an Estimate of Phrenology*, presented a sympathetic account of Gall's science, where he argued it was requisite 'not merely to establish a general connexion between mind and brain, but to follow out, if possible, the precise relationship of the different feelings, faculties, and manifestations, to the special parts or divisions of the brain'.[157] However, he later retreated from the ideas of his 1861 book, and he reacted against the development of cerebral localisation in the 1870s which seemed to have confirmed many of the core ideas of phrenology.[158]

While a unified cortex understood on physiological principles dominated thinking in Britain around the middle decades of the century, back in Paris localisation was firmly on the agenda for medical men (if it had ever really left). There, debates were centred on the pathological and clinical evidence of various cases demonstrating the loss of speech: language, supposedly situated in the frontal convolutions and indicated by a protuberance above the eyes, was the most frequently debated of the phrenological faculties. Between the 1820s and 1850s, the previously mentioned Bouillaud had maintained an almost one-man crusade to keep phrenology alive, presenting many cases – in print and in presentations at the Académie de Médecin – where patients had lost or limited speech as a result of damage done to the anterior lobes of the brain.[159] Though his attempts to prove the localisation of language were heard, Bouillaud was dismissed, as many cases of anterior lobe damage that had *not* led to speech defects could also be seen, and similarly patients with loss of language without any attenuating cerebral damage. Bouillaud's son-in-law Ernest Aubertin soon also took up the challenge: if just one faculty could be localised, then the notion of localisation would be established. It was Paul Broca, a physician and president of the two-year old Société d'Anthropologie, who provided the evidence, in April 1861. A patient, Tan, who had suffered speech loss – what Broca called 'Aphemia' – died, and a post-mortem revealed a correlating lesion in the third frontal convolution of the left hemisphere of the brain. Broca's detailed account, which actually gave a slightly different location for language than that given by the phrenologists, was immediately well received, and in the following period

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[156] Bain (1861) p. 29.
[157] *Ibid.*, p. 17. See Young (1970) pp. 101-133, for a full account of Bain's work.
[158] Young (1970) pp. 107-110, 131-133.
[159] See: Brown and Chober (1992); Harrington (1987) pp. 35-51; Radick (2007) pp. 50-64.

further evidence arrived which corroborated his conclusions. He became engaged in a priority dispute over his findings in 1863, but the concept itself met with little resistance among his Parisian colleagues. It was greeted as a triumph.

V. Into the Family Business: Crichton-Browne's Background in Brains

It was around this time, between 1862 and 1863, that a young James Crichton-Browne studied in Paris as the culmination of his medical training, following in his father's footsteps. It seems likely Crichton-Browne would have observed the new-found support for cerebral localisation during his time there, which may have matched his father's views but would have contradicted the medical training he had just completed under Thomas Laycock. In any case, it would have made him one of the earliest Britons aware of the work, as Broca's new experiments were generally slow to move across the Channel.[160] Broca's work did also attract the attention of the English doctors Frederic Bateman and John Hughlings Jackson (1835-1911), the latter of whom would soon became one of Crichton-Browne's closest friends and professional colleagues. Jackson, a Yorkshire-born neurologist working in London, was already an expert in aphasic disorders, and viewed Broca's claims with rather more scepticism than members of the Société d'Anthropologie had done. Critical of the inductive leap made by Broca, he argued that 'while we may localise the *damage* which makes a man speechless, we do not localise language. It will reside in the whole brain (or whole body).'[161] Jackson found the notion that a purely mental faculty, language, could be localised, troubling. How could a mental thing be in a particular physical location? Jackson's answer was to treat the loss of speech, and the loss of ability to understand language, as both explicable by reference to a sensory-motor account of the brain. Even language, the faculty which separated humans from all other species, was the product of a reflex action operating in the cerebral cortex.[162] Philosophically informed by the ideas of Bain, and also, like Crichton-Browne, a former student and disciple of Laycock – another native of Yorkshire – Jackson understood all the highest operations of the brain as the result of an association between sensation and movement. The mind itself, however, and the nature of its relationship to the brain, was beyond Jackson's remit. As a clinician observing symptoms and appearances in patients, he eschewed such issues as metaphysical speculation.

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[160] See Lorch (2008) on the early reception of Broca's work in Britain.
[161] Jackson (1867) p. 669. See also Harrington (1987) pp. 206-234.
[162] R.M. Young (1970) pp. 197-223.

Figure 1.4: James Crichton-Browne as a young man
[Wellcome Library, London: Iconographic Collection 29012]

Studying in France brought Crichton-Browne into contact with more than just new localisation studies, though, as Janet Oppenheim has noted.

> Had he finished his training in Scotland a few years later, he might have decided to make Germany his destination rather than France. As it was, his choice of Paris influenced the rest of his career, for clinical observation in hospital or asylum wards and the performance of autopsies, on the French model, became Crichton-Browne's basic approach to psychological medicine.[163]

The clinical-pathological method did indeed underlie Crichton-Browne's subsequent approach to asylum practice, providing a definite task and a wealth of data to be analysed, as Chapter Three of this thesis considers in detail. But the laboratory methods and application of experimental techniques that became firmly associated with German science also had a part to play in his work. Through Laycock, who had studied in Germany, Crichton-Browne was well-informed of recent developments in nervous physiology from men like Johannes Müller, Wilhelm Griesinger and Emil du Bois-Raymond, the scientific stars of Germany's state-sponsored research hospitals. It would be wrong to attribute

[163] Oppenheim (1987) pp. 61-62.

Crichton-Browne's approach at Wakefield to just his French foray, therefore. In fact, he was much more strongly tied to the British asylum system, in which he grew up, than the hospitals of Paris. In the language of Oppenheim's counterfactual claim, therefore, his approach to psychological medicine was rather *over-determined* by his social and intellectual upbringing.[164]

'Of all decades in our history,' the historian G.M. Young wrote, 'a wise man would choose the eighteen-fifties to be young in'.[165] Crichton-Browne's long and successful career certainly reflected the opportunities available to a well-connected young man in mid-Victorian Britain. The eldest of eight children, he was born in Edinburgh and raised in the Crichton Royal Institution at which his father worked, taking his middle name from his godmother, who had endowed the asylum. From his mother, Magdalene Howden Balfour, he was related to the famous geologist James Hutton, and his uncle was the Edinburgh Professor of Botany, John Hutton Balfour, who had been a fellow member of the Plinian Society with W.A.F. Browne.[166] In 1857 he began studying medicine in Edinburgh, where he came under the tutelage of, among others, Joseph Lister, James Syme, Lyon Playfair, and the aforementioned Laycock, whom he described as 'a biological Socrates', and 'the ablest and most suggestive of the medical professors in the Edinburgh University in my time'.[167] Indeed, it is likely he was also taught by his uncle and, through Laycock's classes, his own father. Edinburgh remained a training ground for medical men, especially those interested in psychology, throughout the century, and though Crichton-Browne wrote that he was 'not interested in asylum administration' as a teenager, that soon changed in his student days.[168]

As Senior Student President of the Royal Medical Society of Edinburgh in 1861, Crichton-Browne – in between finishing his degree and beginning work for his M.D. – had the pleasure of lecturing his fellow student members. The subject he chose was 'The History and Progress of Psychological Medicine'. He stated:

> The first grand advance in psychological medicine was made when all morbid manifestations and all morbid conditions of mind were recognised as depending on disease of the body, and were hence handed over to the medical profession, as requiring an application of the medical art for their cure. [...] The second grand advance in psychological medicine was made when, in consequence of the discoveries of Gall, Charles Bell, Flourens, Marshall Hall, and others, the individualisation of organs and faculties or psychical actions was established, for then it was that the rational system of psychological treatment commenced. And the third and last grand advance

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[164] In philosophical terminology, to describe some causal event as over-determined is to say that it would have occurred without the given cause.
[165] G.M. Young (1936) p. 77.
[166] Crichton-Browne always included his middle name, but was somewhat inconsistent in hyphenating it. His brother, John Hutton Balfour-Browne, who became a successful lawyer, also keenly appended his distinguished family name.
[167] Crichton-Browne (1930) p. 15; (1924) p. 20.
[168] See 'Some Early Crichton Memories', in Easterbrook (1940) p. 6.

> in psychological medicine was made when there was a recognition of the psychical nature of insanity, and the necessity of its psychical treatment in accordance with the ordinary laws of healthy mind. In consequence of this recognition, the insane were intrusted [*sic*] to psychologists, physicians having a knowledge of mind in its sound condition, an acquaintance with its laws of action, with the correlation of its faculties, and with its morbid phenomena.[169]

All three grand advances were achieved in the nineteenth century, within his father's career. The medical profession's capture of the asylums, the advances in anatomical and physiological understanding of the brain, and the development of a true medical psychology, which tended to the disturbed mind through psychological and moral treatments: these were the foundations of the asylum.[170]

Still only twenty-one when he gave this speech, Crichton-Browne was espousing the ideals his father had shared in 1837. There was certainly no room in his view to acknowledge that the growth of medical psychology was anything other than a story of success. Similarly, in crediting Gall, and speaking of faculties and organs of mind, his thoughts were littered with the language of phrenology, and he was by no means circumspect in his support of it, declaring that 'without an acceptance of the *general principles* of phrenology, mental disease can neither be understood, nor described, nor treated.' Like his father, he also bemoaned that whilst phrenology's 'grand doctrines are now openly and tacitly acknowledged by the great majority of medical and by several metaphysical writers', there were still many who 'earned fame by giving them to the world, without confessing their derivation.'[171] Indeed, it was not only the more commonly accepted facets of phrenology that were defended – later in 1861 he wrote to the *BMJ* to castigate one regional authority, which had prevented a phrenological cast being taken of an executed criminal since it served no scientific purpose. Crichton-Browne called the authorities 'tyrannical and unfair towards phrenology', and suggested that 'a cast of the convict's head might have been interesting and useful, even apart from its phrenological significance.'[172] The young Crichton-Browne – the man who would go on to oversee a programme of investigations into the brain – was a most vocal supporter of phrenology.

In his vision of medical psychology, and his defence of phrenological ideas, Crichton-Browne was very much his father's son. Moreover, in the development of their careers, the similarities between the two are numerous.[173] Both held almost every senior position available to them as alienists, as presidents of various medical and scientific

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[169] Crichton-Browne (1861a) p. 29.
[170] In placing 'a recognition of the psychical nature of insanity' last, Crichton-Browne was placing this development chronologically after the work of Gall, Bell, etc., so was presumably not referring to the moral treatment of Pinel or Tuke, but to the development of psychological understanding in the middle decades of the century.
[171] Crichton-Browne (1861a) p. 26.
[172] Crichton-Browne (1861b) p. 545.
[173] The similarity between the two has also been acknowledged by Oppenheim (1991) p. 59.

societies, commissioners in lunacy (though in different countries), and leaders of the British Medico-Psychological Association. Such a comparison may seem superficial, but it reveals a fundamental link between the two, and just as Crichton-Browne followed his father's career path, so he followed his ideas on a number of specific practices. He was a staunch supporter of utilising drugs as part of his asylum's therapeutic armoury at a time when their use was increasingly under fire: a belief he shared with his father, who had been vigorous in his application and defence of chemical agents. He was equally forthright in his defence of animal testing, regularly appearing in the broadsheets as an advocate of vivisection at a time when popular campaigns targeted the cruelties to animals enacted by scientific men. He instigated a regular teaching course for medical students at the Leeds School of Medicine, one of the first known examples in Britain where doctors' education included clinical training doing rounds of the asylum. And when outside of the asylum, both father and son were also both accomplished public speakers, each perhaps at their most content when preaching to a large audience.

There were also differences between the two. It might be the case that the father was something of a social and political radical compared to his son, but that is to overstate the radicalism of Browne to start with, whilst Crichton-Browne's conservatism did not stand out particularly above his contemporaries. When Browne started out there was not much of an alienist profession to speak of, and, coming from a middling-sort of background, he had no contacts to depend upon in building his career. James, however, entered the profession when it was at its height – in terms of size and authority, asylums would never again hold such power in Britain – and he had as influential a background as one could hope for in any chosen career. After he had obtained his licentiateship from Edinburgh's Royal College of Surgeons, he thus proceeded to obtain a succession of positions as an assistant at the Derby, Devon, and Warwick county asylums, before being made a medical superintendent, at the Newcastle Borough Asylum, in 1863. Three years later he then succeeded in his application to the West Riding Lunatic Asylum, taking the reins in August 1866. In the meantime, he married Emily Halliday in 1865, and his son, Harold, was born in 1866.

A week after Crichton-Browne's appointment had been sanctioned by the committee at Wakefield, British alienists gathered in Edinburgh to hear the presidential address of the newly renamed Medico-Psychological Association. The president was W.A.F. Browne.[174] The 'Association of Medical Officers of Asylums and Hospitals for the Insane', which had originally formed in 1841, chose a snappier title in 1865, which reflected their growing membership beyond asylums, and their authority to speak on '*all*

[174] Crichton-Browne's appointment was sanctioned on 24 July, and Browne's address was delivered on 31 July. Both events appeared in the same issue (Vol. 12, No. 59) of the *JMS*.

subjects bearing upon the science of mind in connection with health and disease.'[175] 'The mere custody and care of lunatics certainly do not constitute a man a psychologist,' Browne argued: a psychologist had to embrace all the phenomena presented, and strictly apply scientific principles to his work.[176] In a lecture to Laycock's medical students, Browne had already lamented a common view that moral treatment, which he had helped popularise, consisted in 'being kind and humane to the insane.' It was for 'the reasons upon which these [treatments] are provided, the objects in view', that moral treatment should be understood. Without a medical rationale for their work, alienists might as well 'give place to the divine or moralist', or any well-educated man, leaving asylums to be run on fiscal principles.[177] A phrenological understanding of each individual, their faculties and propensities, had guided Browne's moral management, but this had now been lost.

After the zeal for reform and optimism regarding the curability of insanity earlier in Browne's career, there was now a growing disillusionment amongst the British press, public, and politicians as to the efficacy of the asylums. John Charles Bucknill noted that the public extended 'its unreasonable antipathy to the insane to all those who are connected with insanity; even to those who wrestle with the great evil', and asylums were increasingly seen by many as institutions of last resort, repositories for troublesome and incurable pauper patients where cheap and safe custody took priority over any hope of medical healing.[178] Browne's utopian model of the curative asylum, ran as 'a grand moral school and reformatory, as well as an hospital', had failed to materialise.[179]

In the mid twentieth century, the psychiatrist Alexander Walk speculated 'on the immediate influence Browne might have had if he had been appointed to one of the large English asylums, for instance to Wakefield, as happened not many years later to his son James Crichton-Browne.'[180] Might Browne's vision of the phrenologically-informed, pragmatically-organised, therapeutic asylum have had more impact if he had operated in the English lunacy system? It may not be possible to answer this, but it is possible to look at what Crichton-Browne actually did, and consider *his* influence. With his phrenological ideals and belief in the value of the asylum, Crichton-Browne was a man in his father's image. Just over two years into his appointment at Wakefield, he declared '[a]sylums should become hospitals more and more, and should subordinate safe custody and comfortable lodging, to cure and scientific exploration', further arguing that

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[175] W.A.F. Browne (1866) p. 309. See: Renvoize (1991); Turner (1991) for more on the association.
[176] W.A.F. Browne (1866) p. 311.
[177] W.A.F. Browne (1864) pp. 311-312.
[178] Bucknill (1860) p. 6. See also Scull (1993) pp. 267-333 for more on the growth of asylums in the middle decades of the nineteenth century.
[179] W.A.F. Browne (1864) p. 315.
[180] Walk (1954) p. 831.

> [i]nsanity has not yet been studied in that strict inductive method, with that prolonged and intricate observation which has thrown so much light and hopefulness over many bodily diseases. It has not been fairly subjected to investigation by our modern scientific instruments and tests.[181]

For him, it was in the pursuit of science that asylums must be utilised. As both a member of the alienist profession, and a son, he set out to show that asylums, phrenology, and W.A.F. Browne's vision of a therapeutic institution, had not been failures.[182]

VI. Conclusion: An Individual Motivation

From early in the nineteenth century, the understanding and treatment of insanity and theories of mind and brain were often closely related. In this chapter an outline has been given of the work and ideas of W.A.F. Browne, a major figure in both the study and popularisation of phrenology and in the expansion of medical practice in asylums, to highlight some of the ways in which asylums and the mind and brain sciences developed as the century progressed. Phrenology was widely debated in 1820s Edinburgh, and though it was an enormous influence on many subsequent thinkers and experimenters it became largely discredited, before returning to the agenda again in the 1860s, in the light of new localisation studies. It was particularly popular amongst the medical men who worked in asylums, providing a practical science that could guide and explain the methods of medical psychology, including moral treatment. Meanwhile asylums grew steadily in size and number during this period, but came to be seen as failing in their task to cure insanity.

In outlining these developments, this chapter has set the background to the research school that began at Wakefield in the 1860s, whilst also introducing some of the recurring issues of somaticism, heredity, moral and medical treatments, and vivisection. It has also shown Crichton-Browne's own familial and professional background, and used this to explain his motivations as medical superintendent at the West Riding Lunatic Asylum. He was the prime-mover in the programme of scientific research there, and in the chapters that follow it will be seen how the research school he established was both a reaction to the position of his profession and the state of its understanding of insanity and the brain, and a fulfilment of the model of an ideal asylum that his father had described, updated for a more scientific environment. By building up a broad biographical account of his father, a kind of psychological portrait has been presented of Crichton-Browne. Ironically, this is something

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[181] 'Report of the Medical Superintendent, January 28th, 1869', *WYAS* C85/1/12/3.

[182] Crichton-Browne wrote: 'Whatever, therefore, may have been the effects of the modern humane system, they have certainly not included any material accumulation of lunatics, and a consequently aggravated burden upon the rate-payers.' *Ibid.*, p. 19.

which he – a critic of Freudian analysis and psychological biographies – would certainly not have approved of.[183]

[183] On Crichton-Browne's anti-Freudian views, see: Neve and Turner (1995); T. Turner (1996).

2. Neuro-Industrial Complex

Why, and how, the Asylum at Wakefield became a Centre of Scientific Research

I. Introduction: Transforming the Daily Drudgery of Asylum Life

JAMES CRICHTON-BROWNE CAME TO WAKEFIELD as a staunch defender of asylums and 'the large amount of good which has accrued to the public from these institutions.' Nevertheless, he suggested shortly after his arrival, 'their usefulness has not yet been extended as far as it might have been, and... the unparalleled facilities which they offer for the study of nervous and mental diseases have not yet been taken advantage of as fully as could be desired.'[184] As a medical superintendent he set about turning the asylum into a place of scientific investigation, making full use of its unique facilities. He later referred to his work there as 'an early experiment... in introducing laboratory research work at the West Riding Asylum', and attributed its success to a variety of factors.

> I was fortunate in having an enlightened committee of magistrates, who tolerated what they perhaps regarded as my eccentricities, fortunate in having round me a band of capable and eager assistants... and fortunate in attracting outside workers like Ferrier, Hughlings Jackson, Lauder Brunton, Clifford Allbutt and Milner Fothergill to make some use of the laboratory.[185]

It was an experiment that had never been fairly tried, but 'the time was ripe for it'.[186]

In the introduction to this thesis, the concept of the 'research school' was invoked to describe what occurred at the asylum under Crichton-Browne. With many students coming together under a single roof and director, conducting scientific investigations into the nature and causes of mental disease, and publishing their work for the medical and scientific communities, Wakefield was a research school comparable to any other. It can thus be analysed like any other, by following those elements necessary to the success of a research school, including: an influential director, charismatic leadership, good students, financial support, publications, a programme of research, and reliable techniques of study.[187] Having traced the intellectual and professional pre-history to Crichton-Browne's arrival at Wakefield, the thesis now turns to the period in which he was actually in charge of the West Riding Lunatic Asylum, between 1866 and 1876, to understand why, and how, it became an institution of particular importance under his directorship. This chapter considers the first

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[184] 'Report of the Medical Superintendent', Wakefield, 24th January 1867 (WYAS, C85/1/12/2) p. 23 .
[185] [Anon.] (1931) p. 659.
[186] *Ibid.*, p. 659.
[187] Morrell (1972).

five of those listed elements – grouped as the organisational arrangements in the asylum – leaving the latter, more intellectual accomplishments to be examined in chapters three, four and five. By what means did Crichton-Browne, and those whom he employed, make the asylum into a place of genuine scientific investigation? Who permitted it; who paid for it; who organised it; and how? The answers are at once mundane and striking.

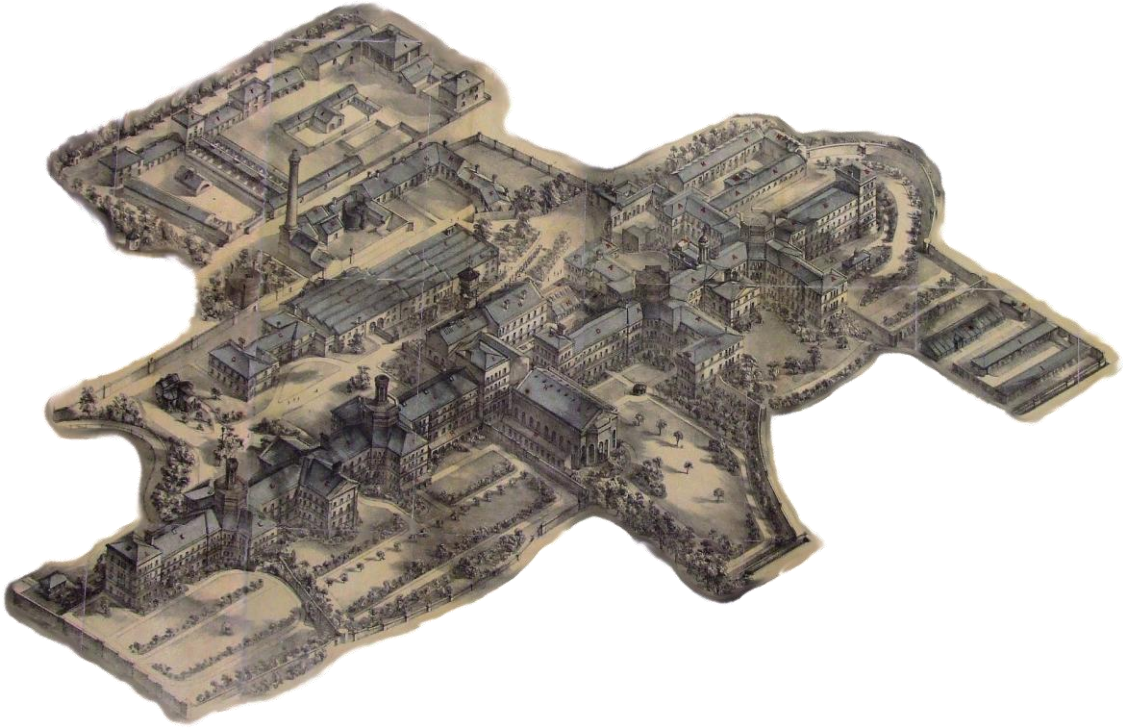

Figure 2.1: The West Riding Lunatic Asylum in 1865
A composite image of separated lithograph tiles, printed by J.F. Masser, 25 Boar Lane, Leeds.
[WYAS, C85/1363]

However, whilst these elements answer the 'how' question, to understand 'why' Wakefield, this chapter goes beyond the research school model to consider the asylum against a broader backdrop. After all, what sets Wakefield apart from other research schools is precisely the fact that it was also a fully functioning asylum. It operated within the confines of Victorian 'Lunacy Laws' and its activities were in large part determined by the role it was expected, and paid, to play. Wakefield was one of a network of public asylums in England that, in the second half of the century, came increasingly to be seen as mere repositories for troublesome individuals, where maintaining safe and economic custody apparently took priority over any hope of advancing medical healing or scientific understanding.[188] In light of this, Edward Shorter has argued that if historians want to

[188] For more on the 'therapeutic nihilism' of later-Victorian psychiatry, see Scull (1993) pp. 267-333.

observe the development of biological psychiatry in the nineteenth century – by his definition, 'the desire to lay bare the relationship between mind and brain through systematic research' – it is 'not to be found in the humdrum routine of asylum life but in research done in universities and institutes.'[189] Yet at Wakefield, it was precisely the 'humdrum routine' that provided the basis for a full research programme into the mechanisms and malfunctions of the mind and brain, which went on to have an enormous influence on the growth of modern neuroscientific studies. As Crichton-Browne himself wrote:

> [i]t is not given to every one to be an original scientific investigator, and the daily drudgery of life – "the trivial round, the common task" – has a priority to call upon each of us. But my thesis is, that into this daily drudgery more science should be infused than has hitherto been done.[190]

Under him, the functions of the asylum were made to serve scientific research.

The following four sections of this chapter focus in on the Wakefield research school by stages. Firstly, in Section II, British asylums are considered in an international setting, in comparison to Germany and France. The laws and finances that governed asylums in Britain meant they were an exceptional setting for scientific work in the nineteenth century, a fact overlooked by many superintendents, and most historians since. Section III then focuses in on the local arrangements in Wakefield, a uniquely situated asylum in the history of science, before Section IV reflects on the organisation of the staff. Novel appointments, including a stream of young clinical clerks, created a workforce of researchers who contributed to the running of the asylum whilst being trained for careers in medicine. Finally, Section V looks at the way finances and other resources were arranged and re-directed towards Crichton-Browne's research school. By all these arrangements, Crichton-Browne showed that meaningful scientific enquiries could be conducted in an asylum. At the height of Empire, in an era supposedly marked by the backwardness of British medical science and the centralisation of knowledge in the growing capital, the West Riding Lunatic Asylum went against the trend.

II. The Latent Research Potential in Nineteenth-Century British Asylums

It is a commonplace that scientific practices often reflect national cultures. In nineteenth-century Germany, France and Britain – the three main powerhouses of industry and empire in the period – asylums provide an especially vivid case in point. Older, long-established

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[189] Shorter (1997) pp. 69-70.
[190] Crichton-Browne (1878) pp. 355-356.

traditions of explaining and dealing with insanity shaped each country's response to the apparent 'wave of madness' that swept across modern Europe in the decades after 1800.[191] Even so, the progression of the century saw the differences between national styles gradually diminish, as communications became easier, disciplines became formalised and science generally became 'much more cosmopolitan'.[192] Ideas spread between countries, and new practices developed in places that contradicted prevailing custom. Psychiatry in Europe was varied but converging.

Germany is usually considered to have become the leader in the field of psychiatry in the nineteenth century.[193] The term has German origins: *psychiaterie,* the discipline of treating mental illness, was first coined in 1808 by Johann Christian Reil, to define the field of those (as he had earlier noted) 'physicians of England, France, and Germany [who] are all stepping forward at once to improve the lot of the insane'.[194] Indeed, the asylum reform movement first took a strong footing in Germany, with new-look institutions created there in the early decades of the century, before they appeared in Britain.[195] The success of German psychiatry in the second half of the century owed much to the 'German model' of the sciences, which achieved pre-eminence and was replicated by other countries later in the century – the very notion of modern disciplines in the sciences came from Germany.[196] With the German lands split into thirty-nine autonomous states, each state was interested in cultivating its own academic reputation, with over half funding their own universities. Within each university rested the potential for new professorial chairs around which new disciplines might coalesce, whilst the competition between states meant that generous funding was available to attract the most promising candidates, and to produce the most significant work. Unlike its major European neighbours, Germany 'pursued science almost entirely within the unlikely framework of its old university system.'[197] The prestige of German psychiatry was built on the development of 'psychiatric clinics', which were associated with the universities and thus stressed the academic, frequently laboratory-based

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[191] Foucault (1961; 1967) essentially viewed asylums across Europe as uniform in their emergence and appearance. This has been widely criticised, especially by Scull (1990). The international variations in nineteenth-century psychiatric practice are now firmly established and explored in works such as Roelcke, Weindling and Westwood (2010). This chapter considers only Germany, France and Britain, as they were seen as the main international competitors in the development of science, technology and medicine throughout most of the century, and provide the most useful comparison. America was, however, an important place in the development of psychiatric care. For more on the American perspective, see the works of Grob (1994b) and Rothman (1971).

[192] Knight (1986) p. 210.

[193] On the rise of German psychiatry see: Cocks (1994);.Engstrom (2003); Lanczik (1992).

[194] J.C. Reil, *Rhapsodieen über due Anwendung der psychischen Curmethode auf Geisteszerrüttungen* (Halle: Curtschen Buchhandlung, 1803), quoted in Shorter (1997) p. 8. For more on Reil's work see: Hansen (1998); Richards (2002) pp. 252-288.

[195] Shorter (1997) pp. 34-39.

[196] On the 'German model', see: Lenoir (1997) esp. pp. 45-95; Tuchman (1993) esp. pp. 3-14; R.S Turner (1971).

[197] R.S. Turner (1971) p. 137.

study of insanity to match the treatment of patients.[198] The first chairs in psychiatry were created there in the 1860s, and as the century progressed, the rigour and discipline-building associated with German science came to define the field of psychiatry too. Material and intellectual arrangements were put in place in the second half of the century for German investigators to lead research into the mind, to question its relationship with the brain, and to further understand the underlying causes of mental disorders.

Though the German lands came to lead psychiatric thinking by the end of the century, it was in France that the field was supposed to have had its beginnings, under the charge of Phillipe Pinel at the Salpêtrière in Paris. The organisation of asylums and scientific practice was markedly different in France to the decentralised, state-led university system of Germany.[199] Paris dominated, and virtually all resources for scientific and medical institutions went into the capital, where a small group of men could essentially dictate output for the whole country. With regional establishments treated as backwaters, research and therapeutic breakthroughs were limited to the universities, asylums and hospitals in Paris, an intellectually confined space where older ideas and traditions became firmly rooted.[200] Thus, in contrast to Germany where insanity was seen and studied as a biological condition, in France a psychological view of madness, which began with Pinel, remained influential until the later decades of the century. Only in 1872, under Jean-Martin Charcot – head of the Salpêtrière and the so-called 'father of modern neurology' – was the first rudimentary laboratory set up within an asylum, and the first chair of psychiatry was not created until 1875.[201] The leaders of French neuro-physiology in the nineteenth-century, men like Pierre Flourens and François Magendie, were not only separated from asylums and psychiatric practice, but separated from medicine, with their research conducted in sites of pure learning like the Collège de France or the Sorbonne.[202] Cerebral research developed in France, and many of the most important debates about the functions and appearances of the brain came from French scientists, but their work was generally conducted in a few select establishments.

Compared to Germany and France, however, at the time British psychiatry was seen as lagging behind.[203] Unlike its two main European rivals, the British government was usually resistant to providing large-scale funding for institutions of research and health care

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[198] See Engstrom (2003) pp. 1-50. The university-clinics were not the only form of asylum in Germany – there also existed more rural establishments, akin to British county asylums, and community-based institutions, where patients resided in boarding houses.
[199] For an overview of French psychiatry see Goldstein (2001).
[200] See: Geison (1978) pp. 13-17; Shorter (1997) pp. 33-46.
[201] See: Harrington (1987) pp. 18-42; Micale (1985) p. 709.
[202] Geison (1978) pp. 42-43.
[203] Schmiedebach (2010) has shown that mid-century German psychiatrists were in admiration of the size, hygiene and non-restraint of English asylums, but critical of the lack of scientific investigations, which they saw as restricted by laws or by local committees.

(such resistance was especially strong amongst Scottish members of the union), whilst the 'English character [had] such an aversion to centralization as to constitute a real impediment to systematic government'.[204] Privately funded or charity institutions were therefore more common in Britain and, whilst the passage of the century saw London become increasingly powerful in the scientific and intellectual life of the country, the growing industrial towns and cities across Britain were still an important and productive part of the nation's scientific prestige.[205] Medical treatment in Britain was traditionally patient-led, with private physicians the most elite amongst a profession much less ideologically driven than its continental confreres. The movement for asylum reform in Britain – originally a lay movement – was only embraced by medical men like W.A.F. Browne when they sought to maintain asylums as the dominion of the medical profession. British asylums were entrenched in the greater political, economic and social movements of their time, and the fact that they came to be seen as curative failures was in large part a result of the functions they were expected to serve: detaining troubled patients became, in many places, as big a task for the asylum as curing was.

Over the course of the nineteenth century, the asylums' role as the national response to insanity was cemented by a series of governmental acts. After the 1808 County Asylums Act made provision for any county in England and Wales to raise taxes to fund an asylum, should it so wish, it was replaced by an 1845 act of the same name which made it compulsory for any county that had not already done so to construct an asylum for the maintenance of pauper lunatics under its jurisdiction. Meanwhile, the same committee which amended the County Asylums Act in 1845 also introduced the new 1845 Lunacy Act, which stipulated regulations for the running and admissions of asylums and set up the Lunacy Commission, a national body, to ensure its regulations were adhered to. Together the two acts of 1845 lasted until 1890, and were central to the administration of asylums for a large part of the Victorian period.[206] In addition to these, asylums – as institutions primarily for the care of paupers – were closely entwined in the nation's Poor Laws, operating alongside workhouses and prisons as keepers of the poor. Asylums were particularly affected by the Union Chargeability Act of 1865, which decreed that the cost of

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[204] Arlidge (1859) p. 187.

[205] I have explored this subject elsewhere in a forthcoming jointly-written article with J. Stark, 'Medical Science and the Cruelty to Animals Act 1876: A Re-examination of Anti-vivisectionism in Provincial Britian'.

[206] The 1845 Lunacy Act also changed the status of lunatics from prisoners to patients, but in doing so took away their right to challenge their detention: this act was essentially the starting point for campaign groups who railed against wrongful confinement and asylums in general. The 1890 Act addressed the concerns of campaigners. The commission which led to the 1845 acts had been led by Lord Ashley, 7th Earl of Shaftesbury, a Tory MP, philanthropist and Christian evangelical who was also involved in reform of factories, coal mining, education and public health. For further information see: Hervey (1985); K. Jones (1955; 1960); Mellett (1981).

keeping each pauper was not to be paid for by a single parish but spread around the entire union, severing somewhat the link between committing a pauper to an asylum and paying for that pauper; and the 'four shilling grant' of 1874, which rebated each union for each pauper housed in an asylum, also contributed to a rise in patients numbers.[207]

Asylums were thus fully embedded within working laws, and as far as most rate-payers were concerned, their work was practical first and medical second. The asylum was not a cheap option – the workhouse, or even leaving individuals to the care of their families or communities, cost a lot less: a fact which has provided evidence both for and against those questioning the humanitarian motivations of asylums.[208] What matters here is the fact that this evinces the true investment and impact of asylums. In the nineteenth century, payments for the maintenance of asylum patients represented by far the 'largest item of expenditure in the category of medical relief', and a significant proportion of all Poor Law spending.[209] In 1862, the cost of maintaining pauper lunatics across England and Wales was £482,425, and by 1869 this figure had risen to £710,941, representing about ten per cent of all spending on paupers.[210] Put into context, the country's spending on its Post Office in 1869 was £2,445,138, and the cost of the army was £15 million. Asylums were expensive, and they only continued to rise in costs as the century progressed.

The result of this type of spending, by the time Crichton-Browne started his job at Wakefield, was over twenty thousand pauper patients held in over forty public asylums across England and Wales. If England's tax payers were not convinced enough to fund the kind of state-supported universities of learning that Germany did, they did at least match them in terms of provisions for the mentally ill. The Lunacy Commission, which inspected the asylums and gave guidance to their directors, served a legalistic function, battling with regional Poor Law Guardians to ensure patients worthy of care were not kept in the workhouse for financial or labour gains. Commissioners hunted in pairs, with a lawyer and a doctor together visiting each county asylum annually, giving three days notice before their inspection. However, rather than representing the scientific ideals of superintendents, the commissioners were 'culpable in contributing to an atmosphere which discouraged research

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[207] On the links between asylums and the Poor Laws, see: Bartlett (1999); R.J. Ellis (2006; 2008); Forsythe, Melling and Adair (1996); Glen (1866). Several factors drove the rise of patient numbers, but making it financially more attractive was certainly a big one. Overall costs rose as a consequence, as each parish acted in its own interest, sending more patients than they perhaps would otherwise have done.

[208] Asylums were relatively expensive. For some, like Scull (1993), this is evidence that they were more than just utilitarian, but were an ideological, capitalist response to the issue of deviance. To others, like K. Jones (1955; 1960), asylum cost is more an indication of the humanitarian motives behind them.

[209] Marland (1987) pp. 64, 84.

[210] See Boyd (1871).

into the pathology of mental disease and promoted a lay perspective of lunacy.'[211] With mounting patient numbers and costs, the commissioners tried to prevent superintendents from any activities that took time away from their more pressing administrative duties

Yet British asylums and alienists were not entirely devoid of new thinking. As Chapter One showed, asylum men were at the forefront amongst phrenology's supporters earlier in the century; and the movement of non-restraint in the middle decades of the century was defended and given medical prerogatives nowhere more than in British institutions. Though the asylum system was not designed with experimental or observational investigations in mind, and was regulated by a national commission, there remained room for manoeuvre for individual superintendents to organise and direct their asylum's workings as they saw fit. As Susan Leigh Star has written,

> [i]n an era when British physiology was almost completely unfunded, even at the university level, the lunatic asylums occasionally provided a place to do basic research. Though resources were not lavish, at least the equipment and subjects for experiments were available. The West Riding Pauper Lunatic Asylum provided such opportunities.[212]

It was precisely because of these opportunities that an English asylum like Wakefield, which might on first inspection appear to be the most unpromising site for novel scientific research, actually came to be the location for a research school concerned with mental and nervous diseases. Indeed, in the middle of the Victorian era, asylums were the closest that British medical science came towards any system of investment and infrastructure that matched the German university model.

Like German universities, English asylums were dispersed and decentralised: patients could not be made to gather in London, as the professional classes did. They were found where large working populations existed, from industrial northern towns to bucolic southern counties. Money allocated to each institution was based on the number of patients it accommodated and the locally charged rate, but there was still competition between the medical professionals associated with the asylums, who clamoured for their own prestige and, very often, potential career moves to jobs with higher pay in higher society. Each asylum was under the control of an individual superintendent, who first and foremost was responsible to a locally chosen committee, made up of a gathering of regional magistrates. Superintendents were, at least until the latter decades of the century, very much in control of their asylum's management, even with the direction of a national commission. Under 'moral treatment', the medically-understood therapy that had promised so much for the

[211] Hervey (1985) p. 110-111, 119. Crichton-Browne (1930) p. 176, later complained that the legal commissioners would often become interested in medical matters, and give advice on matters they knew little about. See also Oppenheim (1991) p.63-65.
[212] Star (1989) p. 32.

success of asylums, a single, authoritative figure in charge of all patients was an essential element, though in practice, as asylums grew in size the superintendent spent little time with individual patients. With a large staff, a huge building in which to work, and the power to choose how the institution's time and money would be spent, an opportunity existed for medical research to be conducted on a large scale. There are examples of several asylum directors utilising this opportunity for research (which will be discussed in the following chapter), as demonstrated by their contributions to the *JMS*, or occasionally more general medical journals like the *Lancet* or *BMJ*. None, however, came close in scale to the model created by Crichton-Browne at Wakefield. It seems, therefore, that far from it being curious that the West Riding Lunatic Asylum should become the site of significant contributions to the science of mind and brain, it is rather more curious that more asylums should not have been so. With an understanding of why an English asylum should have been the site for a research school, the next question to ask is: why Wakefield?

III. Managing the Committee: Realising the Research Potential in Wakefield

'The treatment of the insane', a local newspaper noted in 1868, 'is a subject in which Yorkshiremen may be presumed to take a special interest.'[213] Throughout the nineteenth and twentieth centuries, Wakefield was the location for numerous important people and practices in psychiatric medicine, growing to be one of the largest asylums in Britain. It was the first county asylum built in Yorkshire since the founding of the York Retreat, the Quaker establishment that provided the model for asylum reformers in the first third of the century, and which had itself been built in response to horrors uncovered at the old asylum in York in the late eighteenth century.[214] The designs for the new asylum were overseen by Samuel Tuke, grandson of the Retreat's founder, William Tuke, and the asylum's first director was William Charles Ellis, a prominent supporter of moral treatment and a well-known phrenologist who became the first medical man in psychiatry to be knighted in Britain.[215] Wakefield opened in 1818, among the first five asylums built in England after the 1808 County Asylums Act gave permission to all counties to erect their own institutions. Few were built initially, and the new County Asylums Act of 1845 had to force many counties into providing suitable accommodation for their insane poor. Early in the century then, West Yorkshire's tax-payers were satisfied to fund asylum care when others did not, and a site in Wakefield was chosen as 'early in the nineteenth century it could be

[213] *Yorkshire Post* (7 Apr. 1868).
[214] M. Brown (2006) has shown how the first wave of asylum reform in the nineteenth century was driven by Godfrey Higgins and William Wilberforce, both evangelical Yorkshiremen.
[215] See the entry for 'Ellis, William Charles' in the *ODNB*.

described as being in many civil matters, the capital of the West Riding', already home to several other county-wide institutions.[216]

Politically, Wakefield was a mixed area, though it leant towards Tory/Establishment ideals, and the religious make up of the town matched its political affiliations, with both Anglican and non-conformist attendances slightly higher than the national average.[217] It was a region that mostly avoided the troubles and violence of political riots, and had a mixed population of people both able to pay for and fill the asylum. The middle-classes who had made their money by the start of the century did not generally invest in new businesses, hence the area saw economic decline as the century wore on. Yet, whilst the town of Wakefield suffered economically, several nearby towns saw a boom from factory business, and by national standards West Yorkshire folk had some of the better wage rates in the country, and one of the lowest proportions of paupers.[218]

West Yorkshire was also a well-populated area, so there were still a plentiful number of potential pauper patients for the asylum, meaning the asylum was always fully subscribed and had to repeatedly expand to meet demand. Crichton-Browne described the intake from the region as the 'most grave and unpromising' of any in the kingdom, where the 'strain of life and labour in this busy region is certainly injuriously upon the brain and hearts of those who have to support it.' Part of the problem was with Yorkshire folk themselves, who with 'characteristic energy and endurance, fight long against the inroads of disease', and so by the time they arrived under medical care already

> manifest the symptoms of organic degeneration of the brain.... The functional derangements, which precede structural metamorphoses have been disregarded or stifled, and not until a stage of hopeless confirmation of the malady has been arrived at is treatment sought. [219]

It was not just northern stoicism that created this problem though. In the view of medical superintendents across Britain, patients often arrived too late to be treated effectively, primarily because of the false economy of Poor Law Guardians keeping men and women

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[216] Quote from Marland (1987) p. 7. Scull (1993) pp. 28-29, argues that '[w]hether any given county adopted this solution to the problem of the dependent insane bore little or no relationship to the degree of urbanization of its population[...] No clear-cut connection exists, therefore, between the rise of large asylums and the growth of large cities'. This does not, however, contradict the notion that asylums were only built where there were enough patients and enough people willing to pay.

[217] Marland (1987) pp. 26-34.

[218] See Clouston (1873). The national average of paupers per 1000 of population in 1871 was 47.8, but was only 31.1 in West Yorkshire. West Yorkshire at this time had a total population of 1,831,223, and a total of 2,641 lunatics.

[219] 'Report of the Medical Superintendent', Wakefield, 29th January 1874 (WYAS C85/3/6/3) pp. 15-17. Commenting on the people of Yorkshire, he later wrote: 'Scotch as I am, rabidly Scotch, I have been obliged to admit that these West Riding folk, while perhaps intellectually inferior to my own people, not so well educated and less idyllic, excel them in the wealth of their sympathies, in their toleration and in some accomplishments'. See Crichton-Browne (1926) p. 144.

who, 'by their character or propensities, are unsuitable to be detained in Workhouses.'[220] The guardians were culpable in allowing insanity to develop unchecked, beyond the control of the nation's true guardians of mental health, the asylum doctors.

The rate-payers within the union were important figures, and it was selected members from this group of society who formed the 'Committee of Visitors' for each county asylum, overseeing the spending and decision-making on behalf of the region. These magistrates met at 'General Quarter Sessions' where they could issue directives on the conduct of the institution, or even dismiss staff that failed to match their expectations. However, whilst some committees did become heavily involved in the day-to-day routines of their asylums, most did not, as 'having control over the key area of finance, they were content to leave the more mundane matters in the hands of their presumably capable subordinate, subject always to their own periodic tours of inspection.'[221] Asylum management could vary greatly according to the particular make-up of the local magistrates and those they represented. In effect, the superintendent of a county asylum was just an employee of his respective asylum committee, meaning that for as long as James Crichton-Browne was in Wakefield, his position was entirely at the discretion of the committee members, who in turn answered to the tax-paying public.

The Committee of Visitors for the West Riding Lunatic Asylum, a group of between twenty-five and thirty local magistrates, held quarterly, annual and special meetings at the Wakefield Court House. Whilst it would be interesting to understand the individual and collective motivations for the decisions they took with regards to the asylum, there is a paucity of sources available on the individuals in the committee.

> Local worthies they may have been, but little, other than the asylum minute books, can be used to uncover their interest in the provision for lunatics. Nuggets gleaned from these particular reference points suggest that some visitors had more of an interest than others did, but nothing is certain.[222]

It is only possible to make inferences as to the motivations of the committee which Crichton-Browne served from the actions they collectively made whilst he was there. The minutes of their meetings show little of their thinking, and indeed it seems fair to conclude that Wakefield was a classic example of one of those committees happy to leave their superintendent relatively free to work as he saw fit.[223]

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[220] *Ibid.*, p. 15.
[221] Scull (1993) p. 247.
[222] R.J. Ellis (2001) p. 24.
[223] Not all committees were so amenable to their employees. G. M. Bacon, superintendent to the Cambridge County Asylum, despaired at his employers such that he 'wish[ed] there were a simple despotism at Whitehall, and that the Commissioners were omnipotent. The asylums would be more satisfactorily managed, and there would be more encouragement to those who now waste their lives in

It is not even possible to know the criteria on which the committee chose its superintendents, although it is clear that from the asylum's opening, those chosen were always from a distinguished medical background. As a large and well-located institution, Wakefield always had top candidates applying to its posts, and no layman was ever given control, as was the case in some establishments.[224] The first visiting physician at the asylum under Ellis, Dr Caleb Crowther, had some impact in this respect. Crowther was a zealous reformer, who campaigned for greater control of asylums to be given to visiting physicians, presenting several petitions to government and often standing at odds with the local magistrates, so his protestations may have impacted on the long-term running of the asylum. Crowther, Ellis and Disney Alexander – Crowther's replacement as visiting physician – were all supporters of phrenology too. Wakefield, and nearby Leeds, were both towns with active phrenological societies, and whilst it is not possible to say whether or not phrenological sympathies existed amongst committee members during the nineteenth century, they were certainly happy to employ outspoken devotees of the science.

The chairman of the committee when Crichton-Browne was appointed, and for the first four years he was at Wakefield, was Col. John G. Smyth Esq., the Tory MP for York, who led the other visitors from 1862 until his death late in 1869. At this point, the position was taken over by Mr., later Sir, Walter Spencer Stanhope, who was the heir to a massive family fortune made in the local steel industry. Stanhope's father had been a Conservative MP and friend of William Wilberforce, sharing with him a fervour for religious philanthropy. The younger Stanhope also became a Conservative MP for the southern division of the West Riding in 1872, a seat he held until 1880. It is unknown what his view of the asylum was, but Crichton-Browne referred to him fondly as a 'staunch old Tory', and noted his strong stance against corporal punishment.[225]

Stanhope's accession to the chair of the committee coincided with the most active period of Crichton-Browne's superintendency, though the activity of the asylum had little to do with the committee, and more to do with Crichton-Browne's own intellectual drive, which was given a boost in July 1869 when 'a party of 100 gentlemen headed by Sir William Jenner, the physician to the Queen, & including many of the most distinguished members of the Medical Profession in this country visited the Asylum... & expressed their

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doing good to an ungrateful and ignorant public in spite of itself''. In 'Correspondence', *BMJ*, 1 (1875) p. 192.

[224] It was only in 1866 that this became stipulated in law. The *Rules and Regulations for the Management of the Pauper Lunatic Asylum, for the West Riding of the County of York* (1866) No. 21, stated 'He shall be a legally qualified Medical Practitioner, shall be resident in the Asylum and be the Superintendent and Director thereof, and shall give up his whole time to the duties of his office, and engage in no business or employment except that of the Asylum.'

[225] Crichton-Browne (1930) pp. 27, 46.

admiration of its arrangements.'[226] The British Medical Association had held their annual meeting in Leeds, and Crichton-Browne delivered a paper on hospital furniture and arrangements.[227] Two months before that, he had also been spurred on by a new-found friendship and correspondence with Charles Darwin, whom he assisted in his research towards his 1872 book *Expressions of the Emotions in Man and Animals*. The two men had been put into contact by Henry Maudsley, another (dour) Yorkshireman, who had also worked at the West Riding Lunatic Asylum, spending nine months there in 1857 as an assistant to the ailing superintendent Dr Alderson.[228]

Crichton-Browne complained to Darwin of the 'limited opportunities' and 'numerous and harassing duties' that prevented him from investigating the 'mass of interesting material which is, as it were, going to waste around me in this huge hospital for want of accurate observation'.[229] He also suffered in 1869 from a 'serious and protracted illness', and 'two family afflictions of a most distressing character', informing Darwin that:

> [my] time & attention have been absorbed by my infirmities & sorrows together with my very onerous routine duties, so that I have kept postponing all unimperative occupations from week to week & month to month.[230]

He was 'one of the hardest worked men in her Majesty's Dominions' toiling daily 'from 8.a.m. to 11.p.m. contending all the while with bad health & great anxiety.'[231] It seems clear that for Crichton-Browne, the availability of time was the biggest obstacle to research at Wakefield. Yet, if by 1870 he still felt that he had been unable to make the most of his opportunities for scientific investigation, his time spent in onerous duties had been laying the foundations for the research to follow.

One of the compulsory tasks for Crichton-Browne, as for all superintendents of county asylums, was to produce quarterly and annual journal reports for the committee of visitors. He was to comment on the admissions, diseases, discharges and deaths of the patients, and provide basic statistical analysis of these numbers.[232] He recounted any significant events, reviewed his experiences of the way the laws relating to lunacy and asylums were working, discussed the general health of the institution, clarified the financial

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[226] 'Medical Director's Journal', Wakefield, 29th July 1869 (WYAS C85/1/13/1).
[227] Mentioned in Chadwick (1869) p. 107.
[228] Crichton-Browne's relationships with Darwin and Maudsley are explored in detail in the following chapter.
[229] J. Crichton-Browne to C. Darwin, 1 Jun. 1869 (Darwin Correspondence Project, Letter 6769).
[230] J. Crichton-Browne to C. Darwin, 15 Mar. 1870 (DCP, 7134). It's noteworthy that Crichton-Browne and his wife had a son in 1866, but his other child, a daughter, was not born until 1878. This may have had something to do with his busy duties, though Oppenheim (1991) p. 331, speculates that the family affliction he referred to may have been the loss of another young child.
[231] J. Crichton-Browne to C. Darwin, 6 Jun. 1870 (DCP, 7220).
[232] In doing so he would repeat the most common claims from alienists: that insanity was on the rise, that asylums were necessary, and that too many patients remained in the workhouse too long.

situation of the asylum, and put forward any specific requests or building developments. He would also detail the comings and goings of staff – nurses often stayed a long time, medical men moved in and out as they climbed the professional ladder, and the attendants typically lasted no more than twelve months, often being fired or leaving for better work. Intended for public access, these journals certainly were not a place to record personal details, nor did they document the medical work of the institution, since the research activities that Crichton-Browne instigated went beyond the expected role of the asylum.[233] Rather, they were essentially to allow the national commissioners to check that patients were properly treated, and to let local visitors ensure that their money was being wisely spent. The journals thus provide a valuable insight into the work that went on 'behind-the-scenes' at Wakefield.

In his first annual report to the committee, written around six months after his arrival, Crichton-Browne was keen to stress how the

> system of management in 1866 has in all respects resembled that so successfully pursued in previous years, and has aimed at the combination of economy with comfort, and at the application of all those means of amelioration or cure, which have been suggested by modern science or humanity.[234]

Yet even as a new employee assuring the committee that he was continuing the good work of his predecessor, Dr John Davies Cleaton, he was keen to explain over five pages of text how insanity was growing in Britain and Europe, and was not given anything like the special treatment that other public health or social issues were. Under Cleaton – who became a medical commissioner and inspected the asylum three times under Crichton-Browne – much money had been spent over eight years on an 'ambitious programme of building projects'.[235] A new kitchen, dining hall, clock tower, chapel, and several extended wards had been added, increasing the patient population by over 250, to an average of around 1,200. The additions had been piecemeal and a little disordered, contributing to the problems of poor sanitation that continued to beset Crichton-Browne, though in 1866 a special 'isolation block' for 120 patients had been completed to help deal with the regular outbreaks of typhoid, smallpox and scarlet fever. The drains were a subject of constant anxiety to Crichton-Browne, and he argued that 'madness may have its roots in the drains. Foul air, filthy water, unwholesome dwellings, are influential, directly and indirectly, in

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[233] The *JMS* reported that 'medical details are conspicuous by their absence from the great majority of the reports' in the country. [Anon.] (1875a) p. 292. Unlike Wakefield, however, other asylums did not produce a separate publication in which such details could be recorded.
[234] 'Report of the Medical Superintendent', Wakefield, 24th January 1867 (WYAS C85/1/12/2) p. 17.
[235] Todd and Ashworth (1985) p. 92.

deranging the normal action of the brain.'[236] The buildings, as they were previously managed, were not being properly utilised in treating insanity.

Simply continuing to expand the asylum, then, was not the answer. 'Something more remains to be done', Crichton-Browne argued, 'beyond the mere provision of commodious quarters for our increasing number of lunatics. We cannot be content with a system which would simply provide convenient storeage [sic] of heaps of social debris.'[237] This must have been well received amongst the committee members, and it was certainly true too that the asylum would have to continue to grow under present conditions, as even with previous expansion many insane patients were refused admission when the accommodation at their disposal was insufficient. Having presented the committee with an agreeable appraisal of the failings of the asylum as it stood, Crichton-Browne then went on to supply them with a solution. Faced with growing asylums and all their attendant problems, he argued, '[t]he true method of meeting our difficulties, which are always assuming more portentous dimensions, is undoubtedly to be found in the application of medical science, to the cure and prevention of mental diseases.'[238] Like his father some thirty years earlier, Crichton-Browne sold the potential of medical science as the answer to the sweeping tide of insanity. But for him, the institution as it currently stood was not in itself the cure: progress would come from research conducted outside of the asylum's basic functions, as it was done in the German institutional setting. However, as a consequence of the English system of medical and scientific funding, Crichton-Browne could not simply turn to universities or hospitals for new methods. Rather, such investigations would have to come from within asylums themselves. He noted, therefore, that 're-organization is required in the medical staff of our Asylums.'[239]

IV. Novel Appointments: Re-organising Staff and Resources for a Research School

An asylum had a highly organised life of its own, with 'its own norms and its own assumptions'.[240] With the medical superintendent at the top, he would typically have a medical staff of between one and three assistant officers, depending on the size of the asylum (Wakefield generally had two). The asylum was split into two, with a male side run by a chief male nurse, and a female side overseen by a matron, each with a number of charge nurses under their direction. Clerks or stewards were responsible for maintaining the

[236] 'Report of the Medical Superintendent', Wakefield, 29th January 1874 (WYAS C85/1/12/3) p. 17. Neve and Turner (1995) noted that together with 'brains', 'drains' also dominated Crichton-Browne's work at the asylum.
[237] 'Report of the Medical Superintendent', 28th January,1869 (WYAS C85/1/12/3) p. 27.
[238] *Ibid.*, p. 27.
[239] *Ibid.*, p. 28.
[240] K. Jones (1991) p. 22.

supplies and accounts of each department, and at the bottom of the ladder stood the attendants, the unqualified workers who fulfilled all the most basic tasks of the asylum. Under Crichton-Browne, the first serious change to this organisation at Wakefield was the departure, in April 1867, of the matron of the female wards, Mrs Zillah Paige. Having told the committee that the first female officer already covered many of the tasks of Matron, he decided to abandon the latter role, and instead contrived a different arrangement.

> With the consent of the Chairman, I... would now recommend the following rate of payment for the female officers.
>
> | | |
> |---|---|
> | First female Officer | £70 or £65 |
> | Head Nurse | £40 |
> | Superintendent of sewing | £30 |
>
> A saving of £86 per annum will thus be effected in the sum paid for the management of the female department previous to the 1st of late March, & much greater efficiency at the same time secured.[241]

A few months later, acting on his recommendations, the committee, 'resolved not to continue the office of Matron, but to appoint instead a Chief Female Officer in a more subordinate position, at a reduced salary, giving her also the assistance of a Head Nurse.'[242] Crichton-Browne had done away with one of the previously well-established roles of the asylum.

According to Todd and Ashworth's account of the asylum, the departed matron was moved on because Crichton-Browne 'could not put up with her and soon got her pensioned'.[243] They argue that he was unwilling to put up with any dilution to his authority; a point that may well have been relevant, given his belief in the necessary authority of a superintendent to lead the moral and medical treatments of his patients. Just as importantly, this move also freed up a significant amount of money per year, which undoubtedly would have endeared him to the committee: they were always presented with a compelling narrative, with decisions presented as both financially and medically sound.[244] Commenting on the arrangement in 1874, Crichton-Browne wrote that without a matron 'casualties have diminished in frequency, discipline has been satisfactorily maintained, and harmony has

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[241] 'Medical Director's Journal', Wakefield, 25th April 1867 (WYAS C85 /1/13/1).
[242] 'Minutes of the Committee of Visitors', 25th July 1867 (WYAS C85/1/1/3).
[243] Todd & Ashworth (1985) p. 133.
[244] £86 was a relatively large sum – it would have covered, for example, all books, journals and sheet music bought in a year.

been promoted, while at the same time a considerable pecuniary saving has been effected.'[245]

He had the money earmarked for other purposes. At the same time as he reported the departure of the matron, he also noted:

> I have inquired for gentlemen, properly qualified to fill the office of Clinical Clerk, & have now to recommend that Dr Charles Fryer, & Dr. W.P. Ledgard, whose testimonials I submit, should be appointed Clinical Clerks for a period of three months, subject to immediate removal in case of misconduct or inefficiency, without salary but with board & lodging supplied to them.[246]

This was an important moment. From April 1867, just nine months into his reign, Crichton-Browne made regular appointments of such unpaid clinical clerks, usually newly qualified medical men, who were given board and lodging at the asylum in return for 'earnestly endeavouring to avail themselves of the vast opportunities which it affords to give breadth and precision to our knowledge of mental diseases'.[247] These temporary, unsalaried workers, in addition to the small number of assistant medical officers the asylum was able to employ, formed the basis of the voluminous research output from the West Riding throughout Crichton-Browne's time. It was a symbiotic relationship, as the young men gained rare practical experience of scientific research – an opportunity few institutions, let alone asylums, were able to offer – whilst the asylum itself benefited from the prestige of their work and their contributions towards the overall scientific programme of the asylum.

Apprenticeships were by no means a novel idea, having formed the basis of training for many skilled professions (in many cases, such as apothecaries or tradesmen, the apprentice paid to be there). Even asylums were used to the fleeting presence of young medical men, usually seeking to add a period of asylum work to their own testimonials. This was actually a frequent aggravation, as inexperienced doctors, and even attendants, were constantly given time-consuming training only to leave shortly after. Crichton-Browne's skill was to turn this phenomenon to his advantage. The clerks – who usually stayed for only three months, though occasionally remained longer – kept the case books, assisted in supervision, joined in general medical work, and published their research, all under the supervision of a medical officer. Costing little and providing much, the advantages to the asylum were clear.[248] For the men in question, too, the benefits were enormous. The job market for young medical professionals was extremely competitive, and

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[245] 'Report of the Medical Superintendent', 29th January 1874 (WYAS C85/1/12/3) p. 29.
[246] 'Medical Director's Journal', 25th April 1867 (WYAS C85/1/13/1).
[247] J. Crichton-Browne, 'Preface', *WRLAMR*, 3 (1873) p. III.
[248] Crichton-Browne wrote that the clerks 'rendered valuable assistance in the medical work of the establishment generally, and are now engaged in drawing up reports of cases, which promise to be of much practical utility'. 'Report of the Medical Superintendent', 28th January,1869 (WYAS C85/1/12/3) p. 28.

any route in was valuable. Moreover, the opportunity available at Wakefield for contributing to genuine research at such a young age was undoubtedly rare in any aspect of British medicine, and this must have made a placement here quite a prize. Medical staff in other asylums regularly complained of the limited opportunities to conduct scientific investigations.[249] It was not an easy life though, with one former worker noting that his research in Wakefield 'represented an amount of patient labour such as I probably shall never undertake again.'[250]

The practice was exciting, and successful enough, for Crichton-Browne to show it off to his alienist colleagues in 1869, reporting that '[a]fter eighteen months' experience of them, I am strongly impressed with the value of these Clinical Clerks, and should not now like to be without them.'

> They rub off the rust of routine, and create a necessity for vigorous reading. They afford, too, wonderful facilities for carrying out scientific investigations and careful treatment, while they are themselves undergoing the best preparation for subsequent Asylum appointments.[251]

The only issue, he warned, 'is that the Clinical Clerks should be wisely and cautiously chosen, as it would not do to introduce young practitioners indiscriminately into an institution of this kind.' Even still, such was the success of his plan, he was contemplating offering an annual salary of £50 to his clerks, as 'even this small sum will enable me to command a very superior class of men, will render those appointed more contented, and will induce them to remain with me for twelve months.'[252] He never reached the stage of being able to pay the clinical clerks, though he did manage to attract very able students, several of whom moved on to positions of importance elsewhere in the country.

His plan was well-received by the medical community. Thomas Laycock, Crichton-Browne's former teacher whose lectures on medical psychology at Edinburgh were the only regular classes available on the subject for medical students in Britain, looked favourably on the Wakefield system. In 1870, whilst calling for 'a suitable scientific and practical examination of candidates for asylum appointments' – a call which went unanswered – Laycock noted that 'Dr. Crichton Browne's plan of clinical clerks would usefully form part of any such arrangements.' In the public asylums 'there is all that is requisite for scientific research,' he wrote, 'except assistants qualified by scientific training, and endowed with the

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[249] There is no evidence of how anyone found out about these placements. It is most likely that Crichton-Browne made inquiries though the medical schools, seeking out the best pupils. He seemed to hire mostly from Edinburgh (Laycock's class), and London (Sankey's course). See Bullen (1894) for a superintendent responding to complaints that asylum's did not offer opportunities for research.
[250] Thompson (1875) p. 579.
[251] Crichton-Browne (1869) pp. 599-600.
[252] *Ibid.*, pp. 599-600.

zeal which makes scientific labour lightsome.'[253] In fact, in addition to training his own clinical clerks, Crichton-Browne initiated his own series of lectures on mental diseases for students of the nearby Leeds School of Medicine. Pupils could attend normal lectures in Leeds and spend one half-day a month visiting the asylum, touring the wards, and receiving instruction in the clinical study of mental and nervous diseases.[254] The part-time lectureship at the school was continued by his successors at Wakefield, with superintendents of the asylum assuming the position of lecturer in mental diseases at Leeds until 1934.[255] Nationally, it was not until 1886 that any examinations were instituted to confer a 'certificate of competency' for asylum doctors, and it was 1893 before the General Medical Council made psychiatry a compulsory subject for students.[256]

At Wakefield, it was not just the medical staff who underwent training, though. Like his father before him, Crichton-Browne invested his time and the asylum's money into obtaining the services of competent nurses and attendants, who were 'the first and last condition of success' in the asylum.[257] It was through them that most treatments – moral included – were enacted, and he hoped that 'Nursing Institutions, under certain conditions and regulations, may yet be founded in connexion with some of our large Asylums, so that more science and art than heretofore may be infused into the ministering to a mind diseased.'[258] Whilst these were never built, the more practical steps of introducing in-house training and greater salaries helped improve staff quality, and there were 'several instances of the advancement of Nurses and Attendants trained [in Wakefield] to more responsible and remunerative situations in other asylums,' which stimulated the staff 'to strive after a high standard of efficiency.'[259] Indeed, a story circulated that when he raised the wages of charge nurses from £12 to £14 a year the ladies of the district 'laid a complaint before the committee of the asylum, saying that their kitchen-maids were being taken away to be made into nurses'.[260] The nurses and attendant staff were also active collaborators in research, with it being written into official regulations that

> [a]t the visits of the Medical Officers or Clinical Clerks, the Charge Nurse for the time being shall accompany them through their respective Wards, Day-rooms, Dormitories, &c., and shall describe to them every peculiarity in the condition of each Patient. They shall give full and explicit information concerning the bodily and mental condition of the Patients, and the effects of

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[253] Laycock (1870) p. 340.
[254] Ten of Crichton-Browne's 'Clinical Lectures on Mental and Cerebral Diseases' at Leeds were published in the *BMJ*, between 1871 and 1874.
[255] Anning and Walls (1982) p. 109.
[256] See Clouston (1911).
[257] 'Report of the Medical Superintendent', 29th January 1869 (WYAS C85/1/12/3) p. 35.
[258] 'Report of the Medical Superintendent', 26h January 1871 (WYAS C85/1/12/3) p. 29.
[259] 'Report of the Medical Superintendent', 25th January 1872 (WYAS C85/1/12/3) p. 33.
[260] Tooley (1906) p. 247.

> remedies, occupation, &c., upon them. They shall also carefully assist in any scientific investigation that it may be desired to carry out.[261]

Wakefield was not just a training ground for men of science, but for nursing attendants too.

Figure 2.2: Nurses at the West Riding Lunatic Asylum in the late nineteenth century
[WYAS C85/1388-1438]

In 1867, at the same time as calling for clinical clerks to assist in the scientific work of the asylum, Crichton-Browne also suggested to his committee that a pathologist be appointed. He had to wait longer for this, as it was not until midway through 1872 that Dr T.W. McDowall, as assistant physician from the Inverness District Asylum, arrived to fill the role. When he did, Crichton-Browne declared that

> the appointment of a Pathologist, which [the committee] sanctioned is, I believe, a somewhat momentous step in the march of scientific progress in the Lunatic Asylums of this country. As far as I am aware, no other Asylum is yet provided with such an officer, but there can be little doubt that the example here set will be followed before long in other Counties, with the result of rapidly expanding our knowledge of brain disease, and of the means by which it may be averted or controlled.[262]

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[261] West Riding Pauper Lunatic Asylum (1873) pp. 19-20.
[262] 'Report of the Medical Superintendent', 30th January 1873 (WYAS C85/1/12/3) p. 27.

Pathology was important. With over a thousand patients and around one hundred and fifty deaths per year, there was plenty of work in the mortuary for a pathologist to do; and for Crichton-Browne, the clearest path towards understanding the actions of mental and nervous diseases was through the linking of clinical symptoms with post-mortem analysis. He thus instigated a systematic process of clinical recording and post-mortem examinations throughout the asylum, as the following chapter explores in further detail.

Figure 2.3: The Pathological Laboratory of the West Riding Lunatic Asylum in the late nineteenth century
[WYAS C85/1113]

The linking of clinical and gross pathological appearances was synonymous with the Parisian hospitals that he and his father had both visited as young men. However, it was not only French methods, but also the German-inspired, laboratory-based, microscopical and experimental approach, that Crichton-Browne sought to incorporate into his asylum. Hence it was proposed that, in addition to performing all post-mortem examinations, the pathologist

> should have the care of the Museum we are endeavouring to form, should undertake any special enquiries or experiments that may be deemed desirable by the Medical Director, and should by microscopic and chemical research seek to elucidate some of the dark points which are still so numerous as to make a Cimmerian gloom of cerebral pathology.[263]

Microscopical and experimental studies of the brain became key components of the research programme at Wakefield. Significantly, Herbert C. Major and William Bevan-Lewis, Crichton-Browne's two successors at the asylum, were both interested in microscopy and histological analysis of the brain, and became leaders in the field, as a result of the set-up initiated there. These researches will be further investigated in the chapters that follow, but it is important to note how they were dependent on first organising the staff of the asylum so that it could operate as a research school.

Further to altering the staff arrangements, Crichton-Browne's plans for applying medical science – plans which were supposed to counteract the need for endlessly extending asylums – actually involved the construction or development of several new structures and spaces. 'To give full scope to the energies of such an Officer as a Pathologist, and to utilize to the highest advantage his labours,' he argued after the appointment of McDowall, 'a Pathological Institute or detached building, containing a museum, laboratory, microscopic, photographic, and lecture rooms, is certainly requisite.' These specialised rooms and areas were necessary if the asylum was to develop as a serious force in teaching and research, and he thought it was not over-estimating the 'sagacity and prudent liberality' of the committee (flattery always helped), to anticipate that such an institute would be built in the near future.[264] In fact, two years earlier, in 1870, he had already started work on this vision, with the construction of a new photographic studio and small pathological museum – replacing a temporary arrangement that had been set up in one of the courtyards – and the fitting up of a disused cellar as a laboratory for the preparation of drugs. There was a link between these two developments, as the asylum's dispenser, Mr. George Bracey, was also its photographer, devoting 'much time and attention to the work of the Photographic Studio'.[265]

Though the lecture rooms were never built, Crichton-Browne was successful in persuading the committee to build a new pathological laboratory, mortuary and autopsy room in the north-west of the grounds, behind the asylum's laundry. **[See Fig. 2.4]** These developments appear to have come sometime in 1872 or early in 1873, as they were in place when David Ferrier visited the asylum in the spring of 1873. Without an equipped laboratory, his famous localisation experiments could not have been conducted in Wakefield. Little further mention was made of these building developments in the annual

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[263] 'Report of the Medical Superintendent', 30th January 1873 (WYAS C85/1/12/3) p. 28.
[264] *Ibid.*, p. 27-28.
[265] 'Report of the Medical Superintendent', 29th January 1874 (WYAS C85/1/12/3) p. 29.

journal reports, however, which historian Cathy Gere has speculated was a consequence of Crichton-Browne and the committee attempting to limit the damaging publicity surrounding the vivisection experiments that were conducted there.[266] Rate-payers had been convinced to support a scientific approach at the asylum, but they may have been less happy about funding live animal testing.

Figure 2.4: The West Riding Lunatic Asylum: Plan by J. Vickers, County Surveyor, 1888.
[*WYAS* C85/1364]

With rooms in place, and men employed to utilise those facilities, the asylum was set up for scientific research. Besides Ferrier, other medical men like Thomas Clifford Allbutt, Thomas Lauder Brunton, John Milner Fothergill and John Hughlings Jackson were also encouraged to contribute to the asylum's programme. They were attracted, however, not only by Wakefield's unique arrangements and Crichton-Browne's powers of persuasion, but by the opportunity to publish their work. For six years, and six volumes, the asylum was home to the *West Riding Lunatic Asylum Medical Reports* (1871-1876), a significant publication in the history of the mind and brain sciences. Published in London, first by J & A Churchill and then Smith, Elder & Company, and edited by Crichton-Browne, the *Reports* were made 'in the fervent hope that the series may in some measure conduce to the

[266] C. Gere, *Sovereign Masters*, Ch. 5 (Manuscript under edit, 2012). The links between the asylum and the anti-vivisection campaigns are discussed further in Chapter Four of this thesis.

relief of suffering, the advancement of science, and the credit of the medical profession.'[267] Little information was recorded on the substantial efforts involved in their production, apart from a note by the asylum's committee in 1875 that a grant of £40 be made towards the cost of their printing.[268]

Alienists in Britain already had their own publication, the *Journal of Mental Science*, which was co-edited then edited by Henry Maudsley throughout the time Crichton-Browne was in Wakefield. Begun in 1853 as a 'strictly psychiatric' journal for all matters relating to 'the pathology and therapeutics of insanity, to the construction and management of asylums, and to the diseases, accidents and difficulties likely to arise therein', the *JMS* had, under Maudsley's influence, become a home for more theoretical and speculative studies of insanity, and less a place where lower ranking officers and clerks could contribute.[269] Crichton-Browne was a friend of Maudsley, but there was a division between the two men, with the former essentially an optimist and defender of the alienist profession, whilst the latter was deeply pessimistic about asylums and his fellow medical officers. This division, which will be explored further in the following chapter, was later acknowledged by Crichton-Browne when he gave the first Maudsley Lecture in 1920, noting that from the 1860s onwards their paths diverged 'physically' and 'spiritually'.[270] When he began the first volume of his *Reports* with a retort to those who claimed asylum medical officers had 'signally failed in achieving any useful result, because they are blinded and misled by an erroneous method and by philosophical phantasms', he was thus arguing not just against critical lay persons, but also against Maudsley, the man who stood at the top of his own profession.[271] Crichton-Browne continued to contribute articles to the *JMS*, though Maudsley was never a contributor to the *Reports*. In addition to their physical and spiritual division, this can be explained by Maudsley's writing style, which was based on synthesising others' works rather than conducting original research. 'Maudsley writes excellently and brilliantly', Crichton-Browne told Darwin, but '[w]hat he requires is more extensive observation.'[272]

It was to regain the prestige of the alienists' work, to defend the view that a 'stock of precise knowledge' had been accumulating within asylums, and to press his own claims

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[267] J. Crichton-Browne, 'Preface', *WRLAMR*, 1 (1871) p. v.
[268] 'Minutes of the Committee of Visitors', 29th April 1875 (WYAS C85/1/1/3).
[269] [Anon.] (1855) p.164. The *JMS* was the journal of the British Medico-Psychological Association. Founded in 1853 as *The Asylum Journal*, in 1858 it was renamed as the *Journal of Mental Science*, and it remained as such until 1963 when it became the *British Journal of Psychiatry*. For background on psychiatric and psychological publishing see: Russell (1988); Shepherd (1990) pp. 186-202; R. Smith (2004).
[270] Crichton-Browne (1920) p. 200. Maudsley bequeathed a sum of money towards these annual lectures on mental science, which were named after him.
[271] J. Crichton-Browne, 'Preface', *WRLAMR*, 1 (1871) pp. iii-v.
[272] J. Crichton-Browne to C. Darwin, 16 Feb. 1871 (DCP, 7484).

to expertise, that Crichton-Browne began the *Reports*. Besides an exercise in personal development, therefore, the *Reports* were a chance to display the results of prolonged and systematic exploration of mental and nervous disorders at the asylum: they were a 'ready channel' for 'much valuable information, hitherto buried in case-books and diaries'.[273] Over six volumes and eighty papers, the *Reports* gave the young medical men associated with Wakefield a chance to publish their findings at length, in a manner that was not possible in the *JMS* or other leading medical journals like *The Lancet* or *BMJ*. Fifty-eight of the articles came from officers or clerks of the asylum, including seven from Crichton-Browne, whilst the remaining twenty-two came from outside contributors, seven of which were based on research conducted in Wakefield.[274] The papers showed the unified and cumulative nature of work at the asylum, as a stream of clinical clerks, permanent officers and visiting physicians tackled various problems in diagnosing the symptoms of insanity, understanding their causes, treating these with available medications, and developing knowledge of the appearance and functions of the brain and nervous system. **[See Table 2.1]**

Though some reviewers commented that not all papers within the journal contained valuable information and perhaps served only as padding, all were uniform in their congratulations and support for the volumes as original and important contributions.[275] The *Westminster Review* wrote that the *Reports* had 'a unity which, as a rule, is absent from like publications.'[276] They considered that 'a series of sustained excellence has rarely issued from any medical foundation', and 'the great London hospitals come far below' the 'real and organised work' that was achieved in Wakefield.[277] Similarly, in the *BMJ*, G.F. Bodington proposed that the 'admirable' *Reports* could be taken as

> a fair and trustworthy expression of the leanings of the medico-psychological world at the present moment, and anyone familiar with them will, I feel sure, agree with me that they overflow with the records of investigations which tend to link most closely – nay, I will say to identify – mental disease with cerebral lesion, or disorder of cerebral function, and to establish the therapeutics of insanity on a thoroughly physiological basis.[278]

[273] J. Crichton-Browne, 'Preface', *WRLAMR*, 1 (1871) pp. iii, v.
[274] For other studies of the *Reports*, see: Gatehouse (1981); Viets (1938).
[275] [Anon.] (1873d) p. 586 wrote that some papers have 'the appearance of being written because it was thought necessary to write something, rather than from the necessity of communicating and positive knowledge'. Appearing in the *JMS*, this may well have been written by Maudsley, the editor.
[276] [Anon.] (1873e) p. 493
[277] [Anon.] (1876e) p. 545.
[278] Bodington (1876) p. 141.

Table 2.1: A breakdown of all articles in the *West Riding Lunatic Asylum Medical Reports*

Appeared	Title	Author
1.1-26	'Cranial Injuries and Mental Diseases'	J. Crichton-Browne
1.27-57	'Observations on the Physiological Action of Nitrous Oxide'	S. Mitchell
1.58-70	'The Sphygmograph in Lunatic Asylum Practice'	G. Thompson
1.71-128	'The Opthalmoscope in Mental and Cerebral Diseases'	C. Aldridge
1.129-151	'A contribution to the Statistics of General Paralysis; with remarks'	J.W. Burman
1.152-163	'On the Treatment of Insanity by the Hypodermic Injection of Morphia'	J. Bywater Ward
1.164-177	'Mollities Ossium and Allied Diseases'	G.H. Pedler
1.178-208	'On Progressive Locomotor Ataxy and some other forms of Locomotor Deficiency as found in the Insane'	P. Nicol
1.209-217	'On the artificial feeding of the insane'	W. Lawrence
1.218-232	'Arachnoid Cysts'	Henry Sutherland
1.233-251	'Phthisis and Insanity'	P. Nicol & W.W. Dove
1.252-260	'Acute Delirious Melancholia'	C.H. Mayhew
1.261-265	'Ergot of Rye in the Treatment of Mental Diseases'	E. Churchill Fox
2.1-40	'On Conia, and its use on subcutaneous injection'	J.W. Burman
2.41-52	'On the minute structure of the cortical substance of the brain, in a case of chronic brain wasting'	H.C. Major
2.53-72	'Menstrual irregularities and insanity'	H. Sutherland
2.73-96	'Experiments to ascertain the effects of ether and nitrous oxide combined, to which are added some general observations on stimulants'	S. Mitchell
2.97-136	'Cranial injuries and mental diseases'	J. Crichton-Browne
2.137-150	'Puerperal Mania'	G.H. Pedler
2.151-174	'A new method of determining the depth of the grey matter of the cerebral convolutions'	H.C. Major
2.175-202	'The mental symptoms of ordinary disease'	P. Nicol
2.203-222	'The electric treatment of the insane'	T. Clifford Allbutt
2.223-253	'Opthalmoscopic observations in general paralysis, after the administration of certain toxic agents'	C. Aldridge
2.254-277	'The use of opium in the treatment of melancholia'	E.M. Courtenay
2.278-301	'Impairment of language, the result of cerebral disease'	W.A.F. Browne
2.302-306	'The sphygmograph in epilepsy'	G. Thompson
3.1-29	'The Convolutions of the human brain considered in relation to the intelligence'	W. Turner
3.30-96	'Experimental Researches in cerebral physiology and pathology'	D. Ferrier
3.97-112	'Observations on the Histology of the Brain in the insane'	H.C. Major
3.113-128	'The heart sounds in general paralysis of the insane'	J. Milner Fothergill
3.129-152	'On the power of perceiving colours processed by the insane'	T.W.McDowall
3.153-176	'Nitrite of amyl in epilepsy'	J. Crichton-Browne
3.177-195	'Observations on localisation of movements in the cerebral hemispheres, as revealed by cases of convulsion, chorea & 'aphasia'	J. Hughlings Jackson
3.196-215	'On electro-excitability in mental and nervous diseases'	J. Lowe
3.216-257	'Heart disease and insanity'	J.W. Burman
3.258-272	'Notes on the condition of the tympanic membrane in the insane – *Part I*'	J.C. Galton
3.273-284	'On the obscurer neuroses of syphilis'	T. Clifford Allbutt
3.285-298	'The weight of the brain in the insane'	W.C.S. Clapham.
3.299-314	'The change of life, and insanity'	H. Sutherland
3.315-339	'On the anatomical, physiological, and pathological investigation of epilepsies'	J. Hughlings Jackson
4.1-23	'On the physiological import of Dr. Ferrier's experimental	W.B. Carpenter

	investigations into the functions of the brain'	
4.24-29	'On a case of recovery from double optic neuritis'	J. Hughlings Jackson
4.30-62	'Pathological illustrations of brain function'	D. Ferrier
4.63-93	'The Urinology of General Paralysis'	J. Merson
4.94-151	'Cerebral anaemia'	J. Milner Fothergill
4.152-178	'On the therapeutic value of cold to the head'	W.T. Benham
4.179-222	'On inhibition, peripheral and central'	T. Lauder Brunton
4.223-239	'Observations on the histology of the morbid brain'	H.C. Major
4.240-264	'On the hourly distribution of mortality in relation to recurrent changes in the activity of vital functions'	R. Lawson
4.265-290	'Acute dementia'	J. Crichton-Browne
4.291-304	'Ophthalmoscopic observations in acute dementia'	C. Aldridge
4.305-317	'The actions of nicotine'	W.T. Benham
5.1-23	'On the Influence of Diet in Epilepsy'	J. Merson
5.24-39	'Labyrinthine Vertigo. Menière's disease'	D. Ferrer
5.40-84	'On the Physiological Action of Hyocsamine'	R. Lawson
5.85-104	'On the histology of the great sciatic nerve in general paralysis of the insane'	W. Bevan-Lewis
5.105-129	'On temporary mental disorders after epileptic paroxysms'	J. Hughlings Jackson
5.130-148	'On the appearance of the retina and choroid during the administration of certain drugs'	J.H. Arbuckle
5.149-159	'Othaematoma, or the Insane Ear'	L. Browne
5.160-170	'On the morbid histology of the brain in the lower animals'	H.C. Major
5.171-187	'Cerebral hyperaemia'	J. Milner Fothergill
5.188-197	'A new process for examining the structure of the brain. With a review of some points in the histology of the cerebellum'	H.R. Octavius Sankey
5.198-226	'Epileptiform seizures in general paralysis'	C.F. Newcombe
5.227-256	'The functions of the thalami optici'	J. Crichton-Browne
5.257-270	'On the therapeutic value of chloral hydrate in epileptic convulsions'	J.A.M. Wallis
5.271-283	'Laryngoscopic observations in general paralysis'	L. Browne
5.284-292	'Note on Chronic Mania'	J. Crichton-Browne
6.1-10	'The histology of the island of Reil'	H.C. Major
6.11-26	'The weight of the brain in the insane'	W.C.S. Clapham
6.27-42	'On classification and nomenclature in nervous disorders'	A.H. Rabagliati
6.43-64	'Calorimetric observations upon the influence of various alkaloids on the generation of animal heat'	W. Bevan-Lewis
6.65-84	'Hyoscyamine in the treatment of some diseases of the insane'	R. Lawson
6.85-107	'The climacteric period in relation to insanity'	J. Merson
6.108-119	'Cases on the borderland of insanity'	H. Sutherland
6.120-149	'Clinical notes on conditions incidental to insanity'	R. Lawson & W. Bevan Lewis
6.150-169	'The cranial outline of the insane and criminal'	W.C.S. Clapham
6.170-231	'Notes on the pathology of general paralysis of the insane'	J. Crichton-Browne
6.232-251	'A case of epilepsy (under the care of Dr. Crichton-Browne)'	[Medical Officers]
6.252-265	'Notes on the therapeutics of some affections of the nervous system'	J. Milner Fothergill
6.266-309	'On epilepsies and on the after effects of epileptic discharges (Todd and Robertson's hypothesis)'	J. Hughlings Jackson

The *Reports* were a reflection of the research school in operation in Wakefield, and represented the cutting edge of medico-psychological investigations into the links between insanity, treatments, and the brain. Today still, they are the most visible sign and most

tangible legacy of the asylum's scientific activities in the period, and they were fundamental – as the following chapters show – in the development of neuro-scientific studies in the nineteenth century.

V. Moral Money Management: The Financial Pressures of a Research School

In addition to the *Reports*, Crichton-Browne also showcased Wakefield through annual 'conversazione' between 1872 and 1875, where both scientific and lay people congregated to hear talks and observe the fruits of the asylum's research. These were an important step in advertising the work of the asylum, with local and national press reporting on the events, as Chapter Four considers in further detail. At the 1875 conversazione, an attendee writing for the *BMJ* remarked on the 'intellectual activity and clinical zeal' of the asylum – which was displayed through various objects and specimens laid out by Wakefield's medical officers – and noted that 'the administrative results are admirable, both as to cures and to expenditure.'[279] Indeed, that particular journal was very supportive of Crichton-Browne's experiment, arguing that

> good results are largely attained by the judicious liberality of the county magistrates, who, having secured the services of an able medical director, reward them fairly, and entrust to him full power of management. In return, they obtain excellent results, a high proportion of cures, an economical expenditure, and withal a model establishment, in which there is no stint, and of which they may be justly proud.[280]

Wakefield was seen as a model asylum, as much for its fiscal management as its scientific approach.

In fact, throughout Crichton-Browne's superintendency, the average number of patients held in the asylum rose from 1,118 to 1,416, as several new wards were built and older buildings were converted to create space for patients. In one year alone, 1868, the population increased by one hundred and seventeen as a result of the conversion of a weaving shed into male dormitories and the acquisition of an auxiliary property in nearby Menston. When he arrived in Wakefield the committee were already in the process of building a new asylum in Sheffield too – that part of Yorkshire had been under-represented – and in 1867 an isolation hospital and another separate block were created. Constant pressures on the asylum's capacity, and a permanent list of patients that had to be turned away, meant Crichton-Browne and his committee had to take repeated steps to increase the size of the institution. In this respect, they were often recommended to do so by the Lunacy

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[279] [Anon.] (1875c) p.680.
[280] [Anon.] (1875b), pp. 488-489.

Commissioners, whose aim it was to see all potential patients adequately provided for, no matter how many new buildings that might entail.

With an increased patient population, the overall costs of the day-to-day running of the asylum rose. But the question is asked here: did the asylum's research activities also increase costs? The answer is yes, though it is difficult to ascertain with any precision due to the absence of certain records and the fact that the costs of Crichton-Browne's scientific practices were never differentiated in the balance sheets. In Table 2.2, with evidence collated from a range of different sources (hence not every year is available), the average number of patients, the annual spending on drugs and instruments, and the annual spending on advertising, stationery and printed materials is presented in the years 1866 to 1873.[281] These categories of spending are presented as, from the options available, they are the least essential to the core activities of the asylum. That is, whilst spending on food, clothing, fuel, soap and other such substances could really only be for patients and staff, spending on these other things could be for the extra, research activities of the asylum. The peak in all three columns came in 1871 and 1872 which at first suggests a link between higher number of patients and greater spending on these goods. However, a simple calculation of the ratio of these costs to patient numbers shows that spending on these items rose beyond that purely due to an increasing patient population.

Table 2.2: Medical and miscellaneous costs, 1866-1873

Year	No. of Patients	Drugs and Instruments	Ratio to No. of Patients	Advertising, postage, books, periodicals, stationery, printing	Ratio to No. of Patients
1866	1118	413 2s 8d	0.36	368 18s 3d	0.32
1867	1179	363 13s 5d	0.30	369 14s 2d	0.31
1868	1241	382 5s 1d	0.30	305 7s 8d	0.24
1869	1398				
1870	1445	435 8s 0d	0.30	492 9s 10d	0.34
1871	1497	658 14s 9d	0.44	671 1s 11d	0.44
1872	1477	646 17s 1d	0.43	621 10s 9d	0.42
1873	1404			566 13s 1d	0.40

Moreover, in the next Table 2.3, it is seen that the period 1870-1872, despite seeing rising numbers of patients, was actually a profitable one for the asylum. In these years, Wakefield consistently maintained its patients at a cost lower than that which they were charging to the unions.

[281] Crichton-Browne left the asylum early in 1876, but there are no financial records available for the years 1874-1876.

Table 2.3: Patient costs and profits, 1866-1873

Year	Cost per patient	Charge per patient	Difference
1866	9s 10	9s 6	- 4d
1867	9s 11 1/2	10s	+ 1/2d
1868	9s 4 1/2	10s	+ 7d 1/2
1870	9s 2 1/2	10s	+ 9d 1/2
1871	9s 6 1/4	9s 9	+ 2d 3/4
1872	9s 1	9s 6	+ 5d
1873	9s 11 3/8	9s 6	- 5d 3/8

Thus, it seems that whilst spending on drugs, instruments and various stationary costs increased in 1871 and 1872, these increases were not from patient needs, but the needs of scientific research. In those years where patient costs were low, 1868-1872, this reduction may have been a result of higher numbers simply sharing out resources, or it may have resulted from steps taken by Crichton-Browne. With limited figures available, it is not possible to make any significant conclusions, but it does suggest that the increased research activity at Wakefield in, and immediately after, these years, could have been a consequence of Crichton-Browne creating the money to fund those very activities. Indeed, the West Riding had one of the lowest patient charges in the country, below the national average of 10s 3½d, and significantly less than the neighbouring East and North Ridings, which both charged over 11s.[282] By restructuring management and introducing other measures – such as increasing the amount of work patients contributed – he made the Asylum a profitable place, which gave him the freedom, starting in 1871, to begin work on the *Reports*, on hosting annual conversazione, on running a pathological laboratory, and more besides.

The spending on drugs was recognised by Crichton-Browne, who wrote in one report that the

> drugs accounts will show that we have not been affected here by the paralysing influence of that scepticism as to the usefulness of remedies that has been fashionable of late. On the contrary the results of our daily trials and observations, stimulate us to more vigorous therapeutic efforts, and convinces us more and more of the curability of insanity by medical agents.[283]

At a time when several authors, including Maudsley, were criticising the use of drugs in treating the insane, Crichton-Browne stepped up its application of various chemical remedies. Indeed, drugs were a key part of the research programme, with many investigations made into the effects of different drugs on different mental and physical

[282] [Anon.] (1874b) p. 165.
[283] 'Report of the Medical Superintendent', 28th January 1869 (WYAS C85/1/12/3) p. 33.

symptoms. When he left Wakefield, he rationalised this approach by reference to the asylum's death-rates, arguing that

> an increased stringency in the application of medical science may fairly claim to have saved 495 lives in these nine years which would have been lost had the old death rate been maintained [and] the restitution to reason of 172 persons who would not have recovered had the old rate of recovery been maintained.[284]

Drugs were the tool of the medical psychologist in the West Riding, and the asylum's own statistics provided a justification of the policy which they pursued.

Though he was always keen to impress on the committee just how much could be achieved if only medical science was allowed to stretch to its full potential, he also always remained complimentary and respectful of the committee in his official correspondence with them, and did not question their actions. When he spoke as president of the Medico-Psychological Society in 1878, however, just two years after departing to take his role as a Chancery Visitor, Crichton-Browne voiced his concerns that committees were in danger of becoming so restrictive as to discourage men of science from even entering the profession. He argued that 'the presence of Poor Law Guardians on Visiting Committees will render lunatic asylum service more distasteful than it is now to cultivated medical men', and he worried about asylums if good quality medical men stopped applying for their jobs.

> Independence of action, fixity of tenure, and security of pension, are what asylum medical officers are entitled to ask, not only with a view to their own comfort, but with an eye to the welfare of their patients and the claims of science. [285]

Crichton-Browne seemed to speak from experience, displaying the irritation of an alienist who had spent much time arguing for the 'claims of science'.

Penny-pinching ruled. Magistrates wished to run their asylums on as little money possible, which meant funding only those activities of immediate and obvious benefit: housing, feeding and clothing the patients. The pervasive influence of utilitarianism in many aspects of English thinking in the nineteenth century was significant. It lurked behind the general indifference to funding for teaching and research, especially where science, even medical science, was concerned. This cost/benefit approach saw little value in subsidising university experimental laboratories, where syllabuses were dominated by the 'liberal' subjects. Mechanics' institutes were set up to teach technical and scientific subjects, but teaching was all they were intended for: ultimately, adult education in these establishments was a price worth paying for local industrialists in need of skilled

[284] 'Medical Director's Journal', 27th January 1876 (WYAS C85/1/13/3).
[285] Crichton-Browne (1878) p. 352.

employees. In hospitals, medical men were constantly naming and inventing new conditions and treatments, but their work was ultimately a practical response to the cases they were presented with in the limited time at their disposal. Scientific, medical and technical societies proliferated as avenues and audiences for new findings, but they offered little assistance for the initial stages of investigation. And yet amongst all these establishments, asylums, whose very value and necessity was justified in the starkest utilitarian terms – as they were ultimately the cheapest and simplest way of protecting disruptive individuals and wider society from each other – continued to take large amounts of money, as government legislation entitled them to, throughout the era. With careful and planned management, as at Wakefield, they could, and did, become the site of scientific research.

VI. Conclusion: An Asylum Research School

The West Riding Lunatic Asylum was in most ways no different to the majority of other English county asylums in the nineteenth century. It was a part of the same story, of early asylum reform and construction followed by cost-cutting, pessimism, and gradual decline, that has been studied and told in great detail by a plethora of historians. What marks the asylum at Wakefield out, however, is a relatively brief period in the third quarter of the century when it hosted, within its walls, a programme of research based around study of mental and nervous diseases, which James Crichton-Browne referred to as 'an experiment'. Contemporaries noted it as a significant location too, remarking that the 'good results of the infusion of the spirit of scientific research into a great curative establishment are nowhere more apparent than at the West Riding Asylum, which, under the singularly able direction of Dr. Crichton Browne, is in every respect a credit to the county and an honour to this country.'[286]

This thesis argues that the Wakefield 'experiment' should be seen as a 'research school', and attempts to understand and explain the work of the asylum in light of the research school model. In this chapter, the organisational elements of the research school have been considered: leadership, students, publication and money. It has been shown how Crichton-Browne arranged buildings, staff and finances to create a systematic, scientific approach to studying and treating insanity. Yet at the same time, Wakefield was an asylum, and therefore clearly an unusual place for research to be conducted. The chapter compared German, French and British psychiatry in the mid nineteenth century, to highlight British backwardness at the time and to explain how the system of funding and inspection for asylums was apparently a block to scientific progress. Britain was interested in maintaining

[286] [Anon.] (1875c) p. 680.

its lunatics, but was generally less taken by the idea of studying them in great depth, with no facilities provided comparable to the German university ‘psychiatric clinics’. The research school at the West Riding Pauper Lunatic Asylum was thus built into the mundane, humdrum routine of institutional life, embedded within the English laws and British cultural ideas of medical care. Yet, as a single institution which found time for both the systematic clinical and pathological observation of insanity, and the laboratory-based, experimental study of the disease, Wakefield incorporated the best of both the French and German medical models. The following chapters turn to these activities – the ideas and methods of the research school – but it has first been observed here what management and material conditions had to be in place for research to flourish at the asylum. The final, key ingredient, which Crichton-Browne did not have to create himself, was the asylum’s patients.

3. Patients and Post-Mortems

Constructing an Image of a Diseased Mind in the Asylum

I. Introduction: The Patient as Material

ON 26TH SEPTEMBER 1874, a 28-year old domestic servant from Halifax entered the West Riding Lunatic Asylum. Elizabeth Cobley had been moved eight days earlier from the house she served in to the town infirmary, after suffering from a bout of fits. Though the house surgeon there reported that the fits continued, and that she became increasingly violent during her stay, she was transferred to the Halifax Workhouse after a few days. Her condition worsened still, and after less than a week she was committed to the asylum, her suicidal and murderous behaviour evidence that she was of an unsound mind. Upon arrival at Wakefield, Elizabeth's sister informed the doctors that this was the second time she had suffered such attacks: when she was twenty-one they had also come, leading to an almost six-year stay at the asylum in Northampton – her home town – where she had apparently recovered.[287] Now, besides fits, she was also confused, deluded and unable to remember much about herself. She beat her hands rhythmically, and when not depressed was overtaken by excitement and impulses to kill herself and others. After a physical examination she was found to be healthy in all other respects: the diagnosis was obvious – epilepsy – and she was prescribed doses of potassium bromide and ergot of rye.

Elizabeth was one of five hundred and forty-three admissions to Wakefield in 1874, and one of 14,333 admissions across Britain in that year contributing to a total insane population of 71,862, only 7.47 per cent of whom were deemed 'curable' according to English medical superintendents.[288] The prognosis for the certified insane was not good, and voices of criticism were growing that the therapeutic armoury of asylums was insufficient to meet the rising number of cases every year. The *Edinburgh Review*, commenting on the 'gradual growth of the county asylums', argued that they

> have become so large that anything like individual treatment of the patients is quite out of the question. They have ceased to be houses for the cure of mental disease and have subsided substantially into mere houses of detention. And not only have they outgrown their curative

[287] Information taken from Medical Case Books (WYAS C85-3-1-Jul-Sep1874, C85-3-6-31 & C85-3-6-32). No indication was given of why she had moved to West Yorkshire from Northampton.
[288] See [Anon.] (1876f). According to the Commissioners' Annual Reports, the total annual admissions for all asylums in England and Wales were 10,219 in 1870, 12,442 in 1875 and 13,240 in 1880. For further analysis, see Scull (1993) pp. 334-374.

> capabilities, but they have also degenerated from [a] high standard as houses of mercy and pity[.][289]

In ever-growing institutions, individuals like Elizabeth Cobley could expect crowded, cheerless and monotonous conditions overseen by poorly-trained attendants, with only limited contact with the medical officers and little in the way of positive treatment.

However, in Cobley's case, when she did eventually leave the asylum after eighteen months the 'Medical Officers of the West Riding Asylum' were pleased enough with their treatment of her to publish her extensive case notes in the annual *Reports*.[290] The article charted her progress, from the personal information recorded on her reception orders, through her various symptoms and treatments, to her eventual discharge 'recovered'. The paper was not the usual clinical report of a set of intriguing symptoms: at no point was the case explained as particularly interesting, nor was there any subsequent analysis of the presented symptoms. It was published less for the specific circumstances and more for the methodology and practice that was exemplified on its pages. The sub-title to the paper, 'Under The Care of Dr. Crichton-Browne', is telling in this respect. Through the report, readers were given a presentation of the every-day dealings of the asylum – an insight into its approach to treating the insane – the very job it was intended for. To be sure, this particular patient's notes were chosen because they formed a curious case, and one with an apparently happy ending, but it is the way the patient was observed, recorded and treated that the authors were particularly proud of and wished to display. This was a congratulatory note to the success of Crichton-Browne's regime, and a fond farewell to its leader.[291]

The previous chapter presented the asylum as a 'research school', considering what institutional arrangements were necessary to make this large but otherwise typical example of an English county asylum, where 'daily drudgery' ruled, into a place of genuine scientific investigation. The outcome of particular fiscal and functional organisation was a system whereby medical men – some paid, some not – came to Wakefield to study mental diseases, investigate therapeutic and diagnostic tools, observe pathological specimens, conduct laboratory experiments, and publish. Yet Wakefield was set apart from other well-known research schools precisely because it was an asylum, and had to deal daily with the sufferings of well over a thousand patients. In this programme of research patients were not, however, a distraction. Far from it. Every patient provided an opportunity to observe the

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[289] [Wynter] (1870) p. 432. The article was, in part, a review of a memoir of John Conolly (1794-1866), former physician to the Hanwell Asylum, who was famed as the leading British advocate of non-restraint in the nineteenth century. For more on criticisms of asylums see Scull (1993) esp. pp. 315-323.

[290] Medical Officers of the West Riding Asylum, 'A Case of Epilepsy (Under the Care of Dr Crichton-Browne)', *WRLAMR*, 6 (1876) pp. 232-253.

[291] The volume of the *Reports* that the paper appeared in came out in the summer of 1876, a few months after Crichton-Browne had left.

workings of a disordered or damaged mind, and the potential to record the conditions under which that mind recovered. Furthermore, from those unlucky patients who died in the asylum, every cadaver gave a chance to view the physical causes, or effects, of insanity in the body, especially in the brain. Every brain could be weighed, dissected, drawn, studied under a microscope and compared to many others.

Underlying these activities was the question of the relationship between the mind and the brain, as 'the new mind-body synthesis dominated all the medical science of the time.'[292] For workers in the asylum, it was not the metaphysical question of how immaterial thoughts correlate with their material substrate that vexed them, but the more pragmatic question of what bodily, particularly cerebral, changes affect the normal functioning of the mind. Every medical man there took it as granted that the brain is the seat of all mental activities, but how mind and brain reflected each other, and how insanity was a consequence of changes in one or both of these, was under question. Indeed, a physical view of insanity was almost an *a priori* necessity to its study, as according to Smith,

> [t]o describe insanity as brain disease was to recommend a particular discourse. The statement was not the culmination of empirical knowledge; it was the advocacy of the form of thought and the institutional power which would, it was argued, make such knowledge possible.[293]

Asylum patients – their symptoms and bodies – were the site for such study. The insane, both before and after death, in both senses of the word, were thus viewed as *material*. They were sufferers of mental disease, displaying the outward symptoms of pathological changes in the material of their brain; and they were objects of study, the main source of research material for scientific investigations of insanity.

Given Crichton-Browne's, and his co-workers', declared belief in the physical basis of insanity, the linking of clinical and pathological appearances was of central importance. Medical case notes and post-mortem records together could be used to explain how mental symptoms correlated with changes in the body, especially in the brain. Such a 'clinical-pathological' approach was exemplified by the Parisian hospitals of the nineteenth century which, as was noted in Chapter One, Crichton-Browne spent some time visiting before embarking on his professional career.[294] From his phrenological family background, he was already convinced of the connection between pathological changes in the brain and the effects of mental disease, and he was full of praise for the 'older writers on insanity', for

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[292] Gilman (2006) p. 7. For a general background to the mind-brain issue in nineteenth-century psychiatry, see: Clark (1981; 1982; 1983); Danziger (1982); Daston (1982); Harrington (1987); Jacyna (1982); R. Smith (1973; 1981a); Young (1970). This is explored further in chapter four of this thesis.
[293] R. Smith (1981a) p. 41.
[294] For background on the clinical-pathological approach, see: Ackerknecht (1967); Foucault (1973); King (1982); Maulitz (1987); Duffin (1998).

despite their occasional empty speculations they made 'acute observations in mental structure and action... and an attempt at any rate of psychological inquiry.'[295] He thought the old lines of inquiry had been neglected, and told his fellow alienists in 1878 that it was 'on the fusion of the two great elements... the medical and the psychological – that our hopes should be fixed.'

> These two must not be hyphened [*sic*] but incorporated. It is necessary that we should know the intimate structure of the brain and the pathological changes to which its tissues are liable, but we cannot rest in this knowledge... Then, on the other hand, psychological work is necessary, but not all sufficient... It is not on one nor the other, but on both these lines of study that we must advance, if we are to attain greater precision and success in the diagnosis, prognosis and treatment of insanity.[296]

For Crichton-Browne the correlative method was, and remained, central to the work of the asylum.

This might have appeared an out-moded approach in the 1860s and 1870s, a period when many medical men sought to base their studies on new experimental methods and the findings of physiological vivisection and cellular pathology, which were providing the most exciting results in medicine. Physiologists, most notably the Frenchman Claude Bernard (1813-1878), insisted that an effective medical understanding must be based on the experimental investigation of active functions: the search for pathological lesions, Bernard believed, was a passive enterprise which told nothing of the causes or development of a disease, but only its end-point in the mortuary. Vivisection, on living animals, was the route to knowledge. Moreover, the German microscopist Rudolf Virchow (1821-1902) had shown that the cell was the fundamental unit of function and disease, and should be the object of study. Pathological changes had cellular origins, and the microscope was the tool for their observation.[297]

Crichton-Browne and his fellow medical men did not reject these new experimental methods. Wakefield's fame, after all, was established with the cerebral stimulation experiments of David Ferrier, whilst Bucknill and Tuke, the mid-century authorities on British asylum medicine, also agreed that 'rational pathology must ever be founded upon the basis of physiology'. However, they pointed out, whilst '[g]reater advances have been made in the knowledge of the physiological laws of all other organs of the body than the brain [...] it is quite otherwise with the noble organ which lords it over the rest of the

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[295] Crichton-Browne (1878) p. 355.
[296] *Ibid.*, p. 355.
[297] The key work for Bernard was his *Introduction à l'étude de la medicine expérimentale* (1865), and for Virchow his *Die Cellularpathologie* (1858). For more on Bernard, Virchow, and the development of scientific medicine in the nineteenth century, see: Bynum (1994) pp. 92-117; Porter (1997) pp. 304-347.

body.'[298] Though asylum doctors sought to base their understanding on 'physiological principles', in the obscure disease of insanity, where complicated and disputed symptoms met with limited physiological understanding, the gross pathological examination of post-mortem brains still remained the staple of research at Wakefield and any other asylums where research was conducted. New discoveries in physiology and cellular pathology were interpreted and incorporated into psychological medicine, but they did not usurp the tradition of clinical-pathological study. Laboratory-based experimental pathology and physiology were 'the intellectual heirs of the pathological anatomy of the turn of the century', Romano has argued, and 'the separation of the two fields has been written backwards into the literature', mirroring the ideology of those figures who wished to establish physiology as a scientific endeavour separate from medicine.[299] Patients and post-mortems were thus core to Wakefield's programme and, reflecting this, they will be considered in this chapter before looking more closely at its physiological and cellular studies in the following chapter. As will become apparent, however, the different lines of investigation had much influence on each other.

In his first annual report as Medical Superintendent of the Asylum, Crichton-Browne wrote that insanity,

> as a physical disease, must be studied in its physical and physiological relations and treated by those means which directly influence the bodily organs and functions... Medical records, thoroughly and carefully kept, *post mortem* examinations invariably and exhaustively performed, and therapeutic agents critically employed, will yet lead to conclusions as to the nature and treatment of insanity of incalculable importance.[300]

These were straightforward practical approaches to solving complex scientific and medical questions. In this chapter, these three identified elements of research – medical records, therapeutics and autopsies – will be considered as we follow the passage of patients like Elizabeth Cobley through the asylum, from reception orders when they arrived, through treatments, to either discharge or dissection when their time at the asylum ended. The focus on patients is a popular theme of contemporary scholarship in the history of medicine, particularly among social historians seeking to uncover the hidden stories of the marginalised and powerless.[301] The aim here is not, however, to present a 'bottom-up'

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[298] Bucknill and Tuke (1879) pp. 489-490. They made virtually the same statement in the first edition of their *Manual of Psychological Medicine* , in 1858, though originally only referred to 'great', rather than 'greater', advances, an allusion to the developments in cerebral localisation associated with Ferrier.
[299] Romano (2002) p. 168. T.H. Huxley, in particular, was a leading voice in arguing for this separation.
[300] 'Report of the Medical Superintendent', 24th January 1867 (WYAS C85/1/12/3) pp. 19, 23.
[301] The key starting text on patient-centred histories of medicine is Porter (1985). A good overview of the approaches and issues at stake in using patient histories is given by Condrau (2007). A recent volume looking at the patient's role in neurology has been produced: Jacyna & Casper (2012); and in a twentieth-century setting, psychiatric case notes have been studied by Jones, Rahman & Everitt (2012).

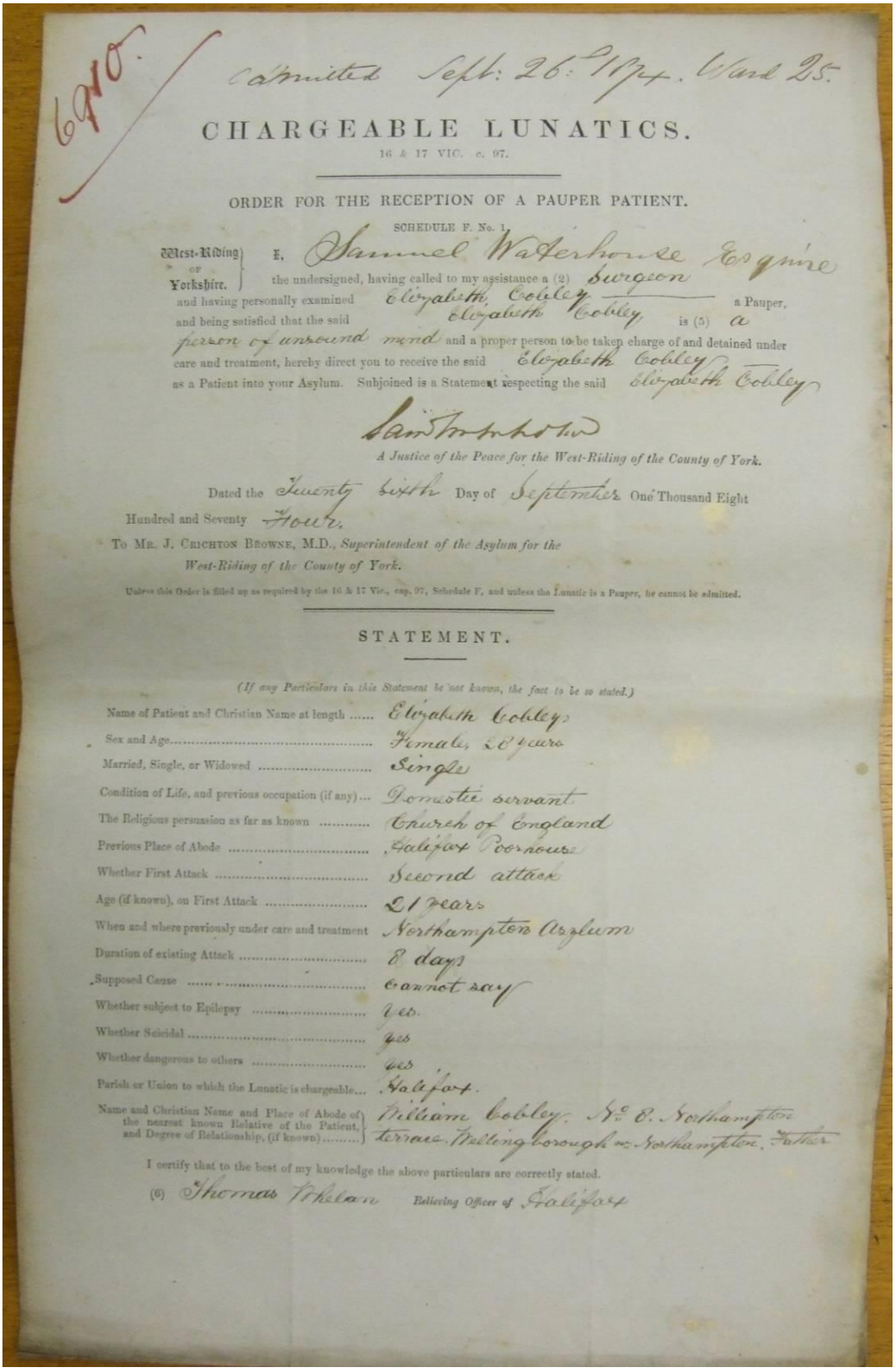
history that reveals how the asylum was experienced by individuals classified as insane, but rather to show how the asylum's patients were fundamental to its research agenda.

Unpublished medical records of unseen patients underlay the very visible research that came out of Wakefield; the day-to-day work of note-taking was the key to studying and understanding insanity. The following sections look at the procedures by which patients were observed, treated and recorded, and reconstruct how an understanding of insane patients was built up by stages. These procedures were not in themselves extraordinary, being replicated at other asylums across Britain, but at Wakefield they were harnessed in creating a unique research programme. The aim is to show how contemporary theories of insanity shaped these procedures, and how they in turn contributed to a somatically-conceived understanding of mental disease. Section II explores the diagnosis and study of patients, before Section III considers the therapeutic regimen which was arranged to treat them. Finally, Section IV investigates post-mortem practices, which concluded in the observation and recording of brains, and eventually the production of cerebral images. Elizabeth Cobley was fortunate enough not to reach this final stage of the process, and was chosen for presentation in the annual *Reports*. Nevertheless, whether a case was terminal or not, or published or not, every patient that passed through the Asylum formed a part of this factory for the study of insanity.

II. 'Medical records, thoroughly and carefully kept': Classifying and Diagnosing Patients in Asylum Case-Notes

Information gathering began before a patient was even admitted to the asylum. Reception orders, which constituted the official certification that an individual should be admitted to an asylum, arrived with the patient. **[See Fig. 3.1]** For paupers, this meant the signature of a local Justice of the Peace, the brief examination notes of a local physician, surgeon or apothecary, and the completion of personal details by a Relieving Officer of the parish. These certificates evolved in a piecemeal fashion throughout the first half of the nineteenth century, before the Lunatics (Amendment) Act of 1853 formalised the process, creating a standardised form that was used throughout England and Wales until 1887.[302] There was little room for a full medical description of the patient's symptoms, and the forms were mostly filled with lay descriptions of the patient's conduct, which the signing medical man would reproduce. Indeed, at this time it is unlikely that any of the local doctors signing such

[302] Wright (1998). For more on the social aspects of certification, see Wright (1997).



6910.

admitted Sept: 26: 1874. Ward 25.

CHARGEABLE LUNATICS.

16 & 17 VIC. c. 97.

ORDER FOR THE RECEPTION OF A PAUPER PATIENT.

SCHEDULE F. No. 1.

West-Riding or Yorkshire. } I, Samuel Waterhouse Esquire the undersigned, having called to my assistance a (2) Surgeon and having personally examined Elizabeth Cobley a Pauper, and being satisfied that the said Elizabeth Cobley is (3) a person of unsound mind and a proper person to be taken charge of and detained under care and treatment, hereby direct you to receive the said Elizabeth Cobley as a Patient into your Asylum. Subjoined is a Statement respecting the said Elizabeth Cobley

Sam Waterhouse

A Justice of the Peace for the West-Riding of the County of York.

Dated the Twenty Sixth Day of September One Thousand Eight Hundred and Seventy Four.

To Mr. J. Crichton Browne, M.D., *Superintendent of the Asylum for the West-Riding of the County of York.*

Unless this Order is filled up as required by the 16 & 17 Vic., cap. 97, Schedule F, and unless the Lunatic is a Pauper, he cannot be admitted.

STATEMENT.

(If any Particulars in this Statement be not known, the fact to be so stated.)

Name of Patient and Christian Name at length	Elizabeth Cobley
Sex and Age	Female, 28 years
Married, Single, or Widowed	Single
Condition of Life, and previous occupation (if any) ...	Domestic servant
The Religious persuasion as far as known	Church of England
Previous Place of Abode	Halifax Workhouse
Whether First Attack	Second attack
Age (if known), on First Attack	21 years
When and where previously under care and treatment	Northampton Asylum
Duration of existing Attack	8 days
Supposed Cause	Cannot say
Whether subject to Epilepsy	Yes.
Whether Suicidal	yes
Whether dangerous to others	yes
Parish or Union to which the Lunatic is chargeable...	Halifax.
Name and Christian Name and Place of Abode of the nearest known Relative of the Patient, and Degree of Relationship, (if known)	William Cobley. No 8. Northampton terrace Melling borough of Northampton. Father

I certify that to the best of my knowledge the above particulars are correctly stated.

(6) Thomas Whelan Relieving Officer of Halifax

Figure 3.1: Front page of reception order for Elizabeth Cobley.
Unsigned, but handwriting suggests it was completed by Herbert Major, Assistant Medical Officer.
[WYAS, C85/3/1/Jul-Sep1874]

forms would have had any training in psychiatric medicine themselves.[303] The main purposes of the form, therefore, were legal and financial. Firstly, the form was a mechanism to ensure that only individuals truly of 'unsound mind' would be committed: it was a deep concern in the Victorian era that sane men and women might be wrongly incarcerated in asylums, whether by mistake or by the deliberate collusion of relations and acquaintances.[304] And secondly, the form provided the important details of who was chargeable for the cost of care. At Wakefield, an asylum intended for paupers, treatment was usually paid for by local rates.[305] For Elizabeth Cobley, the chargeable union was Halifax.

Whilst the reception orders answered pragmatic lay questions, the case books kept by the asylum reflected Crichton-Browne's medico-psychological priorities. Upon his arrival he instigated thorough note-taking on all patients, replacing the brief and unsystematic case notes that his predecessor had maintained with large, hard-bound volumes, indexed by name and produced with pre-printed headings, compiled in copious detail by the medical officers, though rarely by Crichton-Browne himself.[306] **[See Fig. 3.2]** Entries varied in length according to the amount of time the patient spent at the Asylum and the variety of attacks or treatments they endured. Thus, when Elizabeth Cobley arrived, the medical officers took lengthy details for her as they did for every patient. These included, but were not limited to: county, union or parish to which chargeable; on whose authority sent; form of mental disorder; supposed cause of insanity; religious persuasion; bodily conditions and diseases; epilepsy?; congenital idiocy?; dangerous to others?; can read?; can write?; has similarly affected relatives?; children?; head injury?; duration of attack; number of previous attacks; age on first attack; treatments already used.

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[303] In 1869 the Royal College of Physicians issued every member of the medical profession with a copy of *The Nomenclature of Diseases; drawn up by a Joint Committee appointed by the Royal College of Physicians of London* (London: Spottiswoode & Co., 1869). In it, insanity, given only brief discussion, was categorised under just six 'disorders of the intellect', a fact which highlighted the professional separation of psychological medicine – where mental diseases were acknowledged as dependent upon cerebral conditions – from other practitioners, who still referred to a more metaphysical description of insanity.

[304] These records were provided to the Lunacy Commission and the Poor Law Board (Local Government Board after 1871). For more on the Victorian concern over wrongful confinement, see: McCandless (1981); Hervey (1986).

[305] In his study of the Asylum, Ellis points out that in 1876, for up to 35 per cent of patients, 'the epithet of *Pauper*... was a misnomer', as they were paid for in part, or in full, by a weekly charge to relatives. Nevertheless, they were not considered as 'private' patients, and were not differentiated in their treatment in the Asylum. See R.J. Ellis (2001) pp. 60-63.

[306] Their dimensions varied slightly, but were around 40cm (height) x 18cm (width), and around 700 pages in length. Every fourth page was pre-printed with headings, so if any patient's notes covered more than this space – whether because of many episodes of attack or simply because of a length stay – they had to be continued later in the volume; or, if it was full, in a later volume. In this case, the notes were cross-referenced to link the notes, with each new entry beginning 'from page XX', and ending with 'carried forward to page YY'.

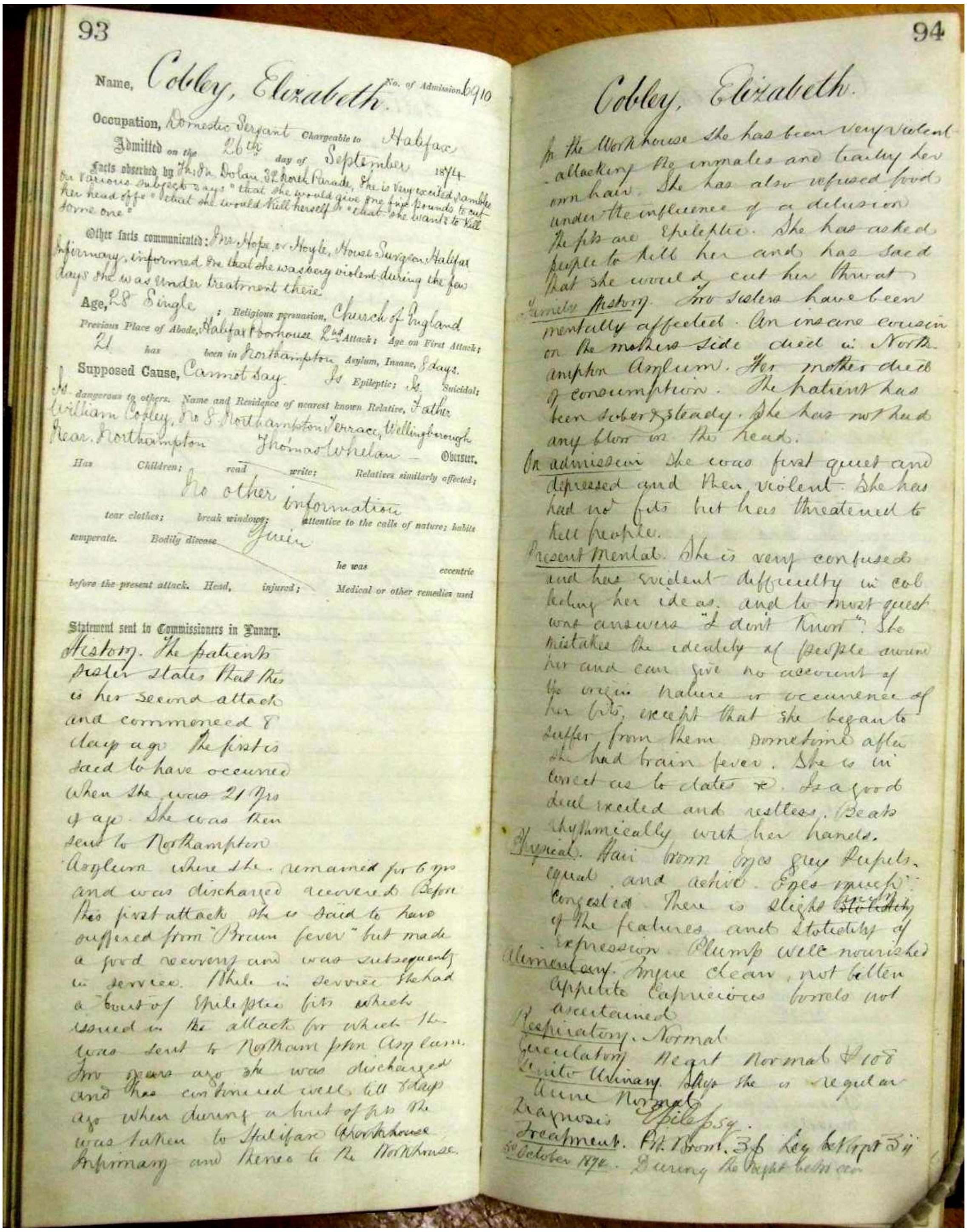

Figure 3.2: Opening pages of Elizabeth Cobley's entry in the medical case books.
Unsigned, but handwriting suggests the examination and case notes were completed by Herbert Major, Assistant Medical Officer. The top of the left page shows pre-printed sections to include basic details. The main sections written in prose, under 'Statement sent to Commissioners in Lunacy', are titled: 'History', 'Family History', 'On Admission', 'Present Mental', 'Physical', 'Alimentary', 'Respiratory', 'Genito-Urinary', 'Diagnosis' and 'Treatment'. Cobley was prescribed potassium bromide and liquid extract of ergot. A blank square has been left on the first page – all entries had this, and in some, photographs of the patient were included in this space. The final line shows the start of the next entry in her case notes, on 30 October 1874.
[WYAS, C85/3/6/31]

Much of this was standard administrative data, but some was included for specific purposes. For example, epilepsy and congenital idiocy had separate categories as these were discrete entities with an acknowledged pathological cause, and also were special conditions requiring specific attention, whether separate or in addition to other forms of insanity.[307] The lay descriptions which came with the patient were superseded as mental and physical examinations were then conducted, and a diagnosis made, sometimes with specific prescriptions. Cobley was noted to have 'much congested' eyes and, though she showed 'evident difficulty in collecting her ideas', she was able to remember that she had began suffering from fits 'sometime after she had brain fever', indicating an awareness that her condition originated from a physical cause.[308] The medical officers themselves wrote that they 'cannot say' what the supposed exciting cause of her attack was, though its physical basis was implicit.

Case notes were kept in every asylum, though in varying degrees of detail and with differing emphases in diagnostic and clinical criteria.[309] Many medical officers had neither the time nor inclination to dedicate much effort to lengthy recording, and more significantly several classifications of insanity were in circulation that were adopted, combined and modified by individual practicing alienists. In 1869 a special committee of the British Medico-Psychological Association attempted to devise a standardised form, which would create uniformity in classification and recording. The committee was split, however, on modes of treatment, so agreed on a form that allowed individuals to follow their own methods yet 'make observations available for reliable scientific deductions'.[310] In essence, their proposed form reflected the same concerns as those of Crichton-Browne, but it was unlikely he would ever follow their lead.

The committee, headed by David Skae (1814-1873) of the Royal Edinburgh Asylum, recommended classification partly based 'on the bodily causes and natural history of the disease, as proposed by Dr. Skae', a system of which Crichton-Browne was scathing in his critique.[311] Skae – a contemporary of W.A.F. Browne though staunchly anti-phrenology – saw different forms of insanity as families of disorders, and argued that they should be classified according to their underlying cause, not the mental symptoms they manifested. Crichton-Browne agreed with him that, 'could we precisely, during life, specialize and localize the discharging lesions of the cerebral hemispheres – those subtle

[307] This was a common view – see, for example, J.B. Tuke, (1870). One could not, for instance, have a meaningful 'Yes/No' box for the condition of Melancholia, even if the symptoms were present, given that it could occur in varying degrees and in various combinations with other symptoms.
[308] Information from 'Medical Case Book' (WYAS C85/3/6/31). 'Brain fever' was a typically Victorian diagnosis, describing the effects of bodily fever caused by inflammation in the brain.
[309] For more on the varying use and development of case notes in asylums, see: Andrews (1997; 1998); Beveridge (1995).
[310] [Anon.] (1870) p. 224.
[311] *Ibid.*, p. 224. For more on Skae, see: Barfoot (2009); Fish (1965).

brain changes upon which insanity immediately depends – these would form the surest basis of classification.'[312] He thought, however, that such changes would 'always remain beyond our ken for clinical, if not for all, purposes', and therefore symptoms, both mental and physical, which could actually be observed and adduced by the medical practitioner, must always form the basis of classification. For this reason, he argued, outside of Skae's Edinburgh coterie not a dozen asylums were using his system (though in fact a number of leading figures were supporters).[313]

The most dominant classificatory system at this time came from Bucknill and Tuke's *Manual of Psychological Medicine*, which Crichton-Browne cited approvingly and adopted himself. They proposed grouping insanity under five great divisions:[314]

I. IDIOCY, IMBECILITY and CRETINISM – states of undeveloped intellectual power
II. DEMENTIA – a state in which intellectual power, once present, has been weakened or destroyed
III. DELUSIONAL INSANITY – a state in which marked delusion is present, whether melancholic, exalted or destructive in character
IV. EMOTIONAL INSANITY – a morbid state of the emotions without delusion, whether melancholic, exalted or destructive in character
V. MANIA – a state of general mental excitement or exaltation

All liable to complications with EPILEPSY or GENERAL PARALYSIS

Based on a symptomatological nosology, it had its antecedents in the ideas of men like Esquirol, Griesinger, and Crichton-Browne's father, W.A.F. Browne.[315] Pathological findings, though of fundamental importance in explanation, were of limited use in the clinical art of diagnosis, where one 'must not only be a physician, but a metaphysician'. The intellect of the physician was necessary to recognise how the functions of the mind were affected by the disease, and it had to be accepted as an article of faith that all disorders – even those for which no physical correlate had yet been found – had an organic cause.[316] '[W]e are not yet in a position, as regards our knowledge of the morbid appearances of the

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[312] Crichton-Browne (1875a) p. 342.
[313] *Ibid.*, p. 342. A.H. Rabagliati, a locally-trained doctor, contributed an article to the *Reports* where he suggested, in contradiction to Crichton-Browne, that all classification must be aetiological. See 'On Classification and Nomenclature in Nervous Disorders', *WRLAMR*, 6 (1876) pp. 27-42. The reviewers of the *JMS* noted this irony, remarking 'there are other people than the late Dr Skae who believe in etiology, but it is amusing to hear its praises sounded from Wakefield'. See [Anon.] (1877b) p. 380.
[314] Bucknill and Tuke (1879) pp. 48-49. The descriptions here have been shortened from those given in the *Manual*.
[315] The *Manual* ran through four editions, the last appearing in 1879. For more on Bucknill and Tuke, see: Beveridge (1998); Bynum (1989; 1991).
[316] Bucknill and Tuke (1879) p. 402. Bucknill and Tuke collapsed the distinction between functional and organic diseases, arguing that so-called functional diseases – thought of as the result of dynamic processes – ultimately had an organic cause that had yet to be found. See pp. 494-496.

brain, to base our nosology upon the revelations of the deadhouse', they wrote, but we must instead 'await an advance of knowledge, which will render a strictly speaking anatomico-pathological classification possible'.[317]

The emphasis on mental symptoms in the nosology of diagnosis, yet on physical changes in the aetiology of the disease, highlights the difficulty faced in studying insanity, where psychological symptoms were ascribed material causes. In spite of, or rather because of, the dual nature of the asylum's work, there was great debate over the description and explanation of insanity, leading to a jumble of aetiological theories from different authorities. Psychological medicine – as its name implied – was a distinct form of practice that dealt simultaneously with mind and body. In seeking dominion over the morbid manifestations of both mind and body, medical psychologists in the final third of the century were implicitly committed to the interdependence of the two. Thus as Clark pointed out, while 'the "discourse" of later-Victorian psychological medicine regarding the "mental functions" of the brain and nervous system was highly materialistic in character, and "reductionist" in its psychological implications, it was founded on a highly metaphysical interpretation of the mind-body relation'.[318]

Several historians have explained this dual constitution of the discipline as the outcome of a social and professional strategy for asylum workers.[319] An avowal of the somatic basis of insanity and its physiological study, it has been argued, reflected a defence of medical prerogatives in the management of asylums and an aim to raise the profession's scientific credentials; whilst at the same time, the persistence of psychological diagnoses and descriptions underlined the specialised knowledge and skills they possessed, which were not simply reducible to experimental science. As Crichton-Browne put it, '[t]here is a *tactus eruditus* in handling the morbid mind that only personal practice can confer.'[320] The professional interests of asylum officers are clear, yet acknowledging this should not detract from the individual efforts made in the cause, or ignore the complexity of work done and opinions fostered as simply explicable by a single rationale. Crichton-Browne was one of the most vocal advocates of scientific asylum practice, but he was no materialist. Medical psychology was more than professional rhetoric: it was the foundation for a productive and wide-ranging programme of research, and one – as the first chapter of this thesis highlighted – with a strong paternal influence.

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[317] *Ibid.*, p. 35.
[318] Clark (1982) p. 227.
[319] Authors who have commented on the link between medical psychology and professional interests in the nineteenth century include: Bynum (1974); Clark (1981; 1982; 1988); Cooter (1981); Danziger (1982); Jacyna (1980; 1982); Scull (1993); R. Smith (1981a).
[320] Crichton-Browne (1920) p. 205.

Indeed, his family ties to the defence of medical psychology went further. One of the greatest challenges to the authority of such expertise came in the law courts, where the imprecise pathological descriptions of insanity given by medical men did not stand up to legal scrutiny.[321] Crichton-Browne's younger brother, John Hutton Balfour-Browne (1845-1921), was a prominent barrister who contributed to this field, most notably with his 1871 text on *The Medical Jurisprudence of Insanity*, which sought to 'explain, and therefore to reconcile, the differences which too frequently arise' between the lawyer and the medical man.[322] Indebted to his elder sibling for providing him with descriptions of the symptoms and pathology of insanity from Wakefield's patients, he presented a more sympathetic view of medical psychology than most of his legal colleagues. However, he was scathing of 'the popular science of materialism', and warned asylum men that 'a science of psychology which has for its basis a true metaphysics... is the only possible science of psychology'.[323] The Browne family's psychological views were well set.

After admission at Wakefield, case notes were added to intermittently by the medical officers, to note how the patient's condition had altered since the previous entry, or to record when significant attacks occurred and what treatments were administered. In Elizabeth Cobley's case, the medical notes covered a total of thirty-two pages and were spread over two volumes. This was well above the average: such a large amount of writing would have been difficult to carry out for every patient in an asylum holding nearly one and a half thousand patients – even those in for longer stays – and unnecessary for those quiet and unvarying cases (though as a one-off it made for a perfect article for publication). The continued, if irregular, assessment of a patient's psychological symptoms allowed officers judge the development of their illness, which might manifest itself in different ways over time. However, the specific content of their delusions was of secondary importance to the doctor's observations of their condition. The personal role of the individual physician in diagnosis, and the consequent variation in note recording between different asylums, supports the view that in the nineteenth century, '[f]ar from representing patients' impressions, case notes pre-eminently constitute the impressions of the medical officers who wrote them.'[324] Even by 1900, the psychiatrist A.H. Newth was still appealing to his fellow practitioners for 'some simple, uniform method of case-taking'.[325]

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[321] For more on the relationship between insanity and the law, see: R. Smith (1981a; 1981b; 1991).
[322] Balfour-Browne (1871) p. vii. The book was dedicated to his father, and acknowledged the 'kindness and assistance' he had received from his brother at Wakefield. He had also previously published on the subject in the *JMS*. See Balfour-Browne (1870).
[323] Balfour-Browne (1870) p. 247.
[324] Quote from Andrews (1998) p. 265. Andrews was discussing asylums specifically, but at a more general & theoretical level, several other authors have argued cogently for the difficulty, or even impossibility, of using case notes as a basis for establishing the 'clinical reality' of patient-doctor interactions. See for example: Armstrong (1984); Risse & Warner (1992); Warner (1999).
[325] Newth (1900) p. 255.

Indeed, in Wakefield and other asylums across Britain, the 1860s and 1870s saw a shift in asylum note-taking, from documenting what patients did and said, to a more evaluative medical commentary on their condition, as a new generation of scientifically-minded asylum officers placed increasing emphasis on clinical recording. Crichton-Browne brought such changes to Wakefield, as did superintendents in other asylums. At Gartnavel Royal Asylum in Glasgow, for example, Andrews has argued that '[c]ase notes became more impersonal, aloof from the patients, and the patient more objectivised as the organising principle of clinical enquiry.'[326] Some interactions and discussions with patients were recorded under Crichton-Browne, but these were only mediated through the hastily written notes of the doctor – only those things he thought relevant to the patient's condition were noted, thus case notes generally contained very little of the patients' own descriptions. Most of the patients' lives were thus not recorded. The daily schedule of early morning rises, afternoon medication and evening entertainments; the routine of meals in the dining hall, walks in the courtyard and employment in the workshops and gardens; the asylum walls, the locked wards and the constant supervision: these were not discussed in case notes.

There was a gap, therefore, between much of what was done, and what was subsequently written. In fact, many of the most novel researches carried out in the asylum were not mentioned in case books or post-mortem reports at all, but will have been chronicled in the personal journals and notebooks of the medical men conducting them, and only made available in their published works.[327] Medical records were intended not for public reading (or historical scrutiny), but for the benefit of asylum officers, so that they could keep track of individuals, teach new doctors from past experience, compare the effects of diseases and treatments, and prove their proper conduct to the local magistrates and visiting commissioners. They are less records of what was done, and more of what was attempted to be done, described by Ray as 'a discourse of practice', in which the insane were constructed according to professional ideals.[328]

Committed to a somatic view of insanity, the asylum's medical workers prioritised physical symptoms and were receptive to new experimental methods, as exemplified by their trials with instruments such as the ophthalmoscope, sphygmograph, and electric conductor. A conservative medical profession in Britain was generally resistant to new

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[326] Andrews (1998) p. 279. This was a turning point from an older tradition of recording patient testimony, of which his W.A.F. Browne was a prominent exponent. See also Berketkotter (2008) pp. 70-99.

[327] Crichton-Browne published several memoirs in later life, which were based on the 'jottings' he had made throughout his career in a 'commonplace book', indicating he kept his own notes separate to his asylum records. However, these memoirs contained little more than a few anecdotes or aphorisms he had collected on asylum life.

[328] Ray (1981) p. 230.

instruments replacing the experience and acumen of trained physicians.[329] Even Crichton-Browne, in later life, wrote that '[l]aboratory methods... can never, in clinical medicine, supplant the use of the unaided but trained senses', or 'yield that all-round information and pilotage which methods of observation, long in use, can'.[330] Yet under him at Wakefield, those who sought to develop new tools found an environment open to any novel scientific discoveries that aided the clinician's eye in the most obscure of afflictions. The ophthalmoscope was a prime example of this. First created and described by Helmholtz in 1851, it was an instrument that allowed one to see into the back of the eye, in particular revealing the optic disc, the point at which the optic nerve reaches the eye from the brain. It thus gave privileged access to the condition of the cerebral matter in a living patient, and the state of circulation in the brain.[331]

There were initially few British adherents, with Thomas Clifford Allbutt (1836-1925) complaining in 1871 that he could 'count upon the fingers of one hand' the number of physicians working with the ophthalmoscope in England.[332] Allbutt, the main proponent of ophthalmoscopy in nineteenth-century Britain, was physician and lecturer at the Leeds General Infirmary and conducted some of his work at the nearby West Riding Lunatic Asylum (patients under his care would occasionally make the same journey too).[333] In his classic monograph *On the Use of the Ophthalmoscope in Diseases of the Nervous System and of the Kidneys*, he thanked Crichton-Browne for having 'associated himself so thoroughly with [his] work... especially in the supply and description of pathological specimens'.[334] An appendix added to his book of two hundred and fourteen cases of insanity he had observed with an ophthalmoscope, chiefly from Wakefield, indicated the role that the asylum's patients and their case notes played in his work. 'Individually', he wrote, 'cases are only valuable when verified by autopsies', and in only ten of the cases he had seen was Crichton-Browne able to provide post-mortem descriptions. Yet he was able to observe changes in the eye in a large proportion of those diagnosed with old or organic cases of brain disease. The usefulness of the ophthalmoscope in the asylum was clear, as it

[329] On the reception of clinical tools into British medicine, see Lawrence (1985).
[330] Crichton-Browne (1920) p. 205.
[331] For background history, see Rosen (1944).
[332] Allbutt (1871) p. 9.
[333] There was a strong rumour, still perpetuated today, that Allbutt was the model for Dr Lydgate in George Eliot's *Middlemarch* (first published in serialised form between 1871 and 1872). Crichton-Browne later criticised this 'misconception', though he acknowledged that it probably came about as Eliot 'knew Clifford Allbutt intimately, visited him in Leeds in 1872, and must have been deeply impressed'. See Crichton-Browne (1930) p. 277. In fact, according to Eliot's correspondence, she visited Allbutt in September 1868, and wrote that he was a 'good, clever, graceful man, enough to enable one to be cheerful under the horrible smoke of ugly Leeds.' See Cross (1885) p. 43.
[334] Allbutt (1871) p. ix.

would help remove 'the metaphysical or transcendental habit of thought' and bring a 'more vigorous and more philosophical mode of investigation' to disorders of the brain.[335]

Allbutt's work was continued at the asylum by Charles Aldridge, a young doctor who spent four years in Wakefield, first as a clinical clerk, then as an assistant medical officer. He was concerned with investigating blood supply in the brain using the ophthalmoscope, a tool which was 'able to diagnose obscure cerebral affections through its instrumentality'.[336] Among alienists it had long been thought that blood flow, particularly an increased level leading to 'cerebral inflammation', was at the root of many instances of mental disease. As late as 1879, Bucknill and Tuke still argued that it 'is most probable that the inflammation is not the condition of insanity, but is the exciting cause of a secondary pathological state upon which the symptoms of insanity immediately depend'. The frequency with which inflammation, clots and congestion were found in post-mortem asylum cases was evidence of this. 'The one physiological principle upon which we have to build a system of cerebral pathology', they wrote, 'is that mental health is dependent upon the due nutrition, stimulation, and repose of the brain.'[337]

Physiological experiment had shown that blood flow – and the nutrients, oxygen, and poisons it might contain – was crucial to normal cerebral functioning, and thus its study provided a route for medical psychologists to describe and explain various mental conditions in living patients.[338] In three papers published in the annual *Medical Reports*, Aldridge presented his observations of cases of epilepsy, general paralysis and dementia using the ophthalmoscope. He concurred with Allbutt that general paralytics displayed atrophy of the optic disc, and further claimed that, in assessing the relative amount of atrophy, 'an estimate may be formed as to how long the disease has existed'. Epilepsy, he found, was concurrent with a state of 'passive hyperaemia', whereby venous blood flow away from the brain was impeded, creating cerebral pressure. By contrast, dementia, whose sufferers were characterised by paleness of the optic disc, probably had 'its origin in a like state of anaemia of the brain'.[339]

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[335] *Ibid.*, pp. 363, 2. Allbutt looked at cases of: insanity with epilepsy (43), mania (51), dementia (38), melancholia and monomania (17), idiocy (12), and general paralysis (53). Some of these cases were presented to him by Dr Christie, of the North Riding Lunatic Asylum in York, though no exact figure was indicated.

[336] C. Aldridge, 'Opthalmoscopic observations in general paralysis, after the administration of certain toxic agents', *WRLAMR*, 2 (1872) pp. 223-253 (223).

[337] Bucknill and Tuke (1879) pp. 500, 490.

[338] W.B. Carpenter, one of the most prominent mid-century proponents of mental physiology, argued that all nervous activity was immediately dependent on regulated blood flow, and agreed that the 'impairment of due nutrition of the cerebrum' was found in many cases of insanity. See Carpenter (1874) pp. 657-660.

[339] C. Aldridge, 'The Opthalmoscope in Mental and Cerebral Diseases', *WRLAMR*, 1 (1871) pp. 71-128; 'Opthalmoscopic observations in general paralysis, after the administration of certain toxic agents', *WRLAMR*, 2 (1872) pp. 223-253 (228); 'Ophthalmoscopic observations in acute dementia', *WRLAMR*, 4 (1874) pp. 291-304 (297). For more on Aldridge's work, see: Bucknill and Tuke (1879) pp. 298, 316; Gatehouse (1981) pp. 99-102.

Altered cerebral capillary blood flow appeared to match with disturbed mental conditions, but it was hard to say whether it caused, or was a consequence of, changes in the brain substance itself. The celebrated physician John Milner Fothergill (1841-1888), who contributed commentaries on cerebral anaemia and hyperaemia to the *Medical Reports*, noted this.

> We must admit that the cerebral cells possess the power of regulating their blood-supply according to their functional activity, as much, or perhaps more than other tissues; still we must equally admit that the alterations in the blood supply affect their functional activity.[340]

Altered blood flow in the encephalon was a condition 'which may be truly physiological, or which may be decidedly pathological, and even destructive to life.'[341] An expert on diseases of the heart, on one visit to Wakefield he conducted examinations on twenty-two patients suffering from general paralysis, to see 'if perchance' anything interesting might be found. A 'distinct accentuation of the aortic second sound' was heard in seventeen of them, which seemed more than a mere coincidence, but still he cautioned against those doctors who were too quick to link heart disease with the production of insanity.[342]

In the same volume of the *Reports* as Fothergill's paper, J. Wilkie Burman, Crichton-Browne's deputy in Wakefield, had also noticed a statistically higher rate of heart disease within asylums than in the general population. A more definite analysis of the cardiovascular system in insane patients could be provided by the sphygmograph, another new medical instrument – devised in 1860 by the Parisian doctor E.J. Marey – for tracing the wave of the pulse.[343] George Thompson, a clinical clerk and assistant medical officer in the West Riding from 1867 to 1871, spent his time developing and modifying his sphygmograph as 'an impartial and consistent witness', believing it was a 'vain hope' of the profession to try to build a classification of insanity on microscopical post-mortem examinations.[344] With Marey's instrument, Thompson claimed, he observed a clear and consistent variation from normal in the pulse forms of epileptics and general paralysis patients. In particular, in proposing that general paralysis was a condition of persistent spasm that led to wasting of the muscle and blood vessels and thus presented a different pulse trace, he argued that the sphygmograph allowed for the detection and treatment of the disease at an earlier stage than was otherwise possible. **[See Fig. 3.3]** Thompson sought an

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[340] J. Milner Fothergill, 'Cerebral anaemia', *WRLAMR*, 4 (1874) pp. 94-151 (108).
[341] J. Milner Fothergill, 'Cerebral hyperaemia', *WRLAMR*, 5 (1875) pp. 171-187 (171).
[342] J. Milner Fothergill, 'The heart sounds in general paralysis of the insane', *WRLAMR*, 3 (1873) pp. 113-128 (113). Fothergill's links with Wakefield came about when he was a resident medical officer at the nearby Leeds Public Dispensary between 1869 and 1871. He authored several medical texts, including *The Heart and its Diseases: with their treatment* (London: H.K. Lewis, 1872). See his *ODNB* entry.
[343] For background see Lawrence (1878-1879).
[344] G. Thompson, 'The Sphygmograph in Lunatic Asylum Practice', *WRLAMR*, 1 (1871) pp. 58-70 (59).

explanation not in the brains of the dead, but in the entire neuro-muscular system of the living.

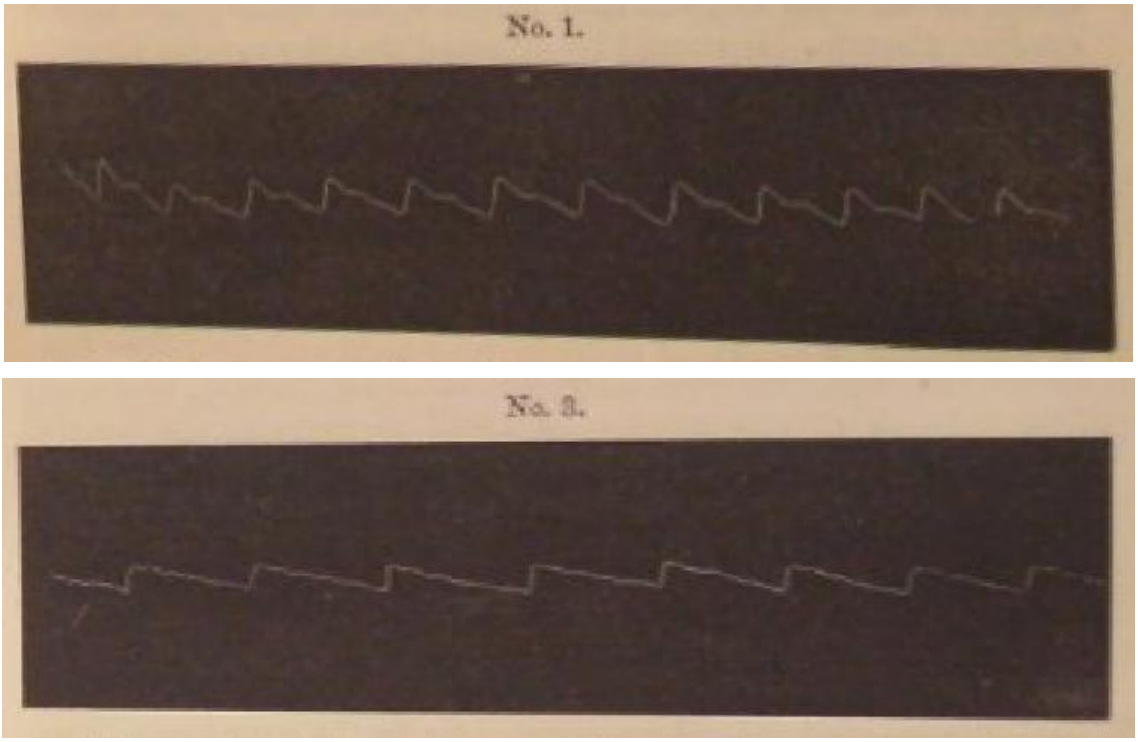

Figure 3.3: Sphygmograph pulse trace in a healthy individual, and in a case of general paralysis
The pulse of the general paralytic has a shorter, more slanted up-stroke, and a more gradual down-stroke, indicating less easily distensible vessels creating a reduced flow of blood.
[G. Thompson, 'The Sphygmograph in Lunatic Asylum Practice', *WRLAMR*, 1 (1871) pp. 61, 63.]

Given the apparent neuro-muscular basis of some forms of insanity, electricity also presented an opportunity in diagnosis. The use of electrical current to stimulate muscle contraction had been known about and practised since the eighteenth century, and in the nineteenth century it became an important tool of physiological research in the hands of investigators like Du Bois Reymond, Helmholtz, and Duchenne. In the 1850s, Duchenne – now famed for his studies of 'localised electrization' and descriptions of several diseases – had shown that muscle contractility was diminished in certain neurological and muscular conditions.[345] Working in this vein, the Wakefield clinical clerk John Lowe tested the diagnostic value of electricity in a range of mental conditions, to see if the excitability of muscle varied according to the disease.[346] His results were mostly unsuccessful, finding no more variation in the diseased than could be found within healthy individuals, except in the

[345] G.B. Duchenne, *A Treatise on Localized Electrization, and its Applications to Pathology and Therapeutics* (1871). For background, see: Licht (1944); Tibbits (1873).
[346] J. Lowe, 'On electro-excitability in mental and nervous diseases', *WRLAMR*, 3 (1873) pp. 196-215.

most obvious cases of general paralysis, locomotor ataxy and chronic disorganisation of the brain. Electrical stimulation was of little use in diagnosis, though through Ferrier's animal experiments it did come to play a significant role elsewhere in the asylum.

Older, more established methods of clinical examination were still used, however, to trace the development of a disease, showing how bodily symptoms mirrored mental disturbances, and presenting a history of the improvement or degradation of a patient's condition. Temperature, pulse and respiration were taken for individuals during periods of attack or acute disease, motions and urine samples could be observed, and monthly weighings were conducted for every patient to ensure the early detection and, if necessary, treatment, of phthisis. Such techniques allowed for quantitative data to be gathered, and presented in a graphic form that could be studied at a later date, as will be discussed in the following section of this chapter.

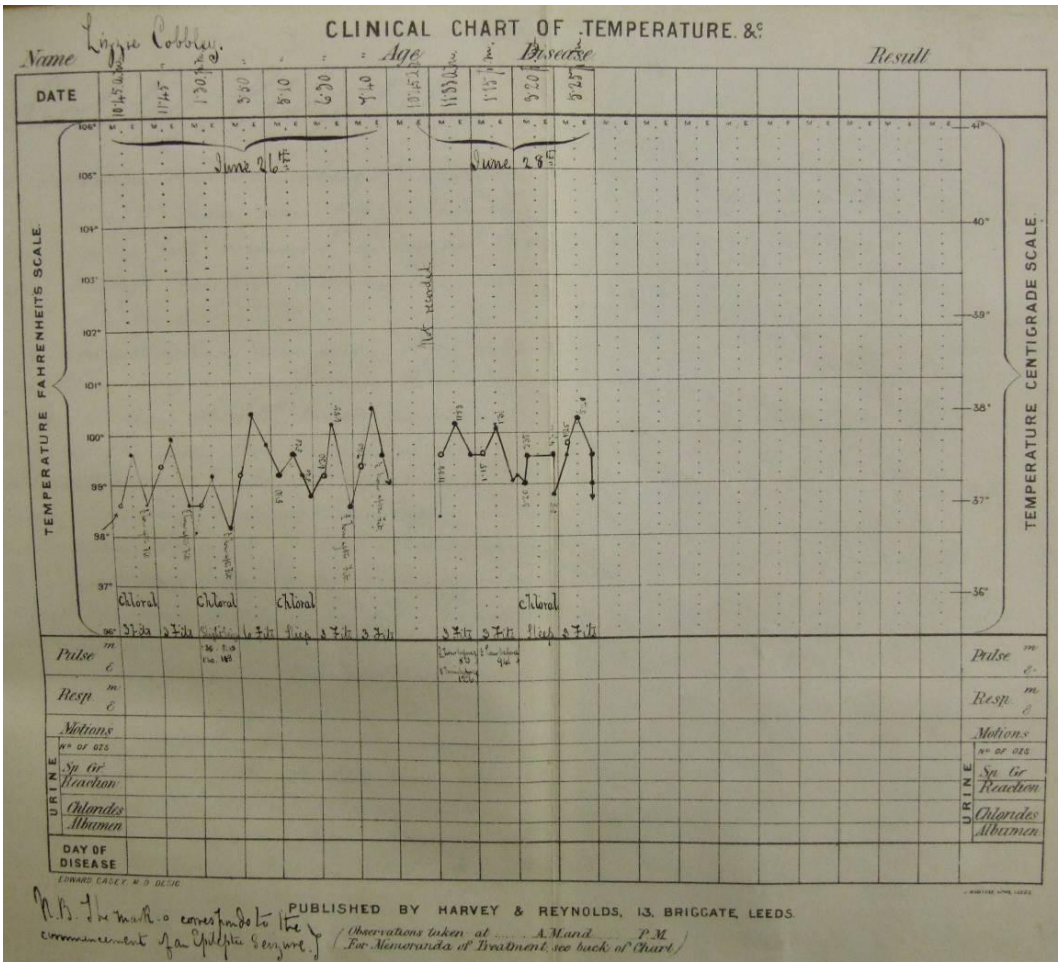

Figure 3.4: Temperature recordings of Elizabeth Cobley during a series of epileptic fits.

A mark was made each time there was fits commenced, and peaks in temperature seemed to follow from this, with temperature falling again after the fits had stopped. On several occasions, chloral hydrate was administered to try to stop the fits. The information was recorded on pre-printed clinical charts. [WYAS, C85/3/6/32]

Another method of studying patients, which fell somewhere between a physical and a psychological approach to diagnosis, came in the practice of physiognomy. Emotional, intellectual, and propensive expressions could be discerned by observing facial features – especially so in the exaggerated expressions of the insane – and characteristic appearances were seen in sufferers of mania, melancholia, delirium, dementia and paralysis. The importance of physiognomy in recognising madness had been acknowledged since the late eighteenth century, and Bucknill and Tuke remarked that every good mental physician must be a good physiognomist also, if he was to 'practise his art satisfactorily and successfully'.[347] Physiognomy was a clinical art not easily taught in texts, but its practice was aided by the introduction of photography into asylums during the middle decades of the century. In 1856, Hugh Diamond, a superintendent at the Surrey Asylum, photographed patients under his care and argued such images were the most reliable method of recording external symptoms, and a tool for assessing the effectiveness of treatments or the state of readmitted patients.[348] Indeed, photographs could even be a part of treatment which, when presented to a recovered patient, allowed them to identify themselves and the improvement in their own condition. Diamond's work was taken up by the famous alienist John Connolly, who used photographs in a series of essays outlining the characteristic features in twelve variations of insanity.[349] The photograph was seen as trustworthy and objective, representing the derangement and disorder of the body created by a diseased brain.

At Wakefield, Crichton-Browne was at the forefront of asylum camera-use, beginning to have patient photographs taken in 1868 in a makeshift studio set up in a courtyard, and constructing a purpose-built photographic studio and pathology museum in 1870. Most patients were not photographed – only around one in ten – but a space was often left in their case-books where a photograph could be attached.[350] Although Crichton-Browne probably did not use the camera much himself,[351] he was the driving force behind

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[347] Bucknill and Tuke (1879) pp. 418- 424 (424). Emotional expressions could show a general excitement or depression, intellectual expressions displayed the presence, or absence of intelligence, and propensive expressions reflected the unrestrained instincts of the individual.

[348] Diamond (1856-1857) p. 117. Descriptions of Diamond's work taken from Gilman (1982) pp. 164-178.

[349] Conolly published a series of articles entitled 'The Physiognomy of Insanity' in the *Medical Times & Gazette*, 16-17 (1858-1859). For further details see: Gilman (1982) pp. 164-178; Berkenkotter (2008) pp. 51-69.

[350] The appearance of photographs in the case-books was sporadic, usually coming in clusters, most likely indicating that they were taken on the same day, when the apparatus was set up or the designated photographer was available. See Fig. 3.2. It is not clear exactly who took the photographs.

[351] Though Crichton-Browne is often credited as an amateur photographer, as Pearn (2010) n. 21, points out, some photographs were taken outside of the Asylum by 'G & J Hall of 26 Westgate, Wakefield'. Crichton-Browne also credited George Bracey, the asylum's dispenser, as the photographer for several images. Furthermore, twelve photographs of patients from Wakefield held by the Wellcome Library (Wellcome Library, London: Iconographic and Images Collection) are attributed to 'Henry Clarke, ca. 1869'. Henry Clarke was an amateur photographer and House Surgeon at the Wakefield Prison, but did not begin work there until January 1876, so these are possibly mis-dated.

its introduction in Wakefield, and the most obvious and well-documented fruit of his labours in this area came through his correspondence and collaboration with Charles Darwin when the latter was conducting research towards his 1872 work, *Expressions of the Emotions in Man and Animals*.[352] Crichton-Browne provided forty-one photographs of patients at Wakefield, each accompanied with descriptions of diagnosis, symptoms and behaviour, which Darwin appreciated to such an extent that he commented his book ought to be described as 'by Darwin & Browne'.[353] The photographs were of value to Darwin in studying the link between emotions and physical expressions, and the continuum of such expressions between animals and humans. He wrote that 'the insane ought to be studied, as they are liable to the strongest passions, and give uncontrolled vent to them', and though none of Crichton-Browne's photographs appeared in Darwin's book, he relied heavily on the asylum man's interpretations.[354]

Crichton-Browne also sought Darwin's assistance in return, asking him in 1873 if he might contribute to some notes on a subject close to his own heart: general paralysis of the insane. He had already 'induced a number of able and distinguished friends to undertake its investigation in different aspects', the findings of which would, 'when collected together form a complete natural history of the disease and greatly elucidate its causes, course and treatment.'[355] He hoped Darwin could offer a paper on the physiognomy of the disease, but his friend demurred, writing: 'I am fully convinced that you could do *well* that which I could effect only in the most imperfect manner.'[356] Darwin was not just being evasive: Crichton-Browne had already sent him a full description of the general paralytic's physiognomy, which was quoted at length in the *Expressions*. It was well-known, Crichton-Browne told him, that '[c]onstant tremulous agitation of the inferior palpebral & great zygomatic muscles is pathognomic of the earlier stages of general paralysis.'[357] Such early signs – twitching at the outer margins of the lips and eyes – became known as 'Crichton-Browne's sign', perhaps as a result of Darwin's reference.[358] **[See Fig. 3.5]** They were

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[352] See Darwin (1998). Works which have studied the correspondence between Darwin and Crichton-Browne include: J. Browne (1985); Gilman (1979; 1982); Pearn (2010).

[353] C. Darwin to J. Crichton-Browne, 26 Mar. 1871 (DCP, 8253). J. Browne (1985) p. 160, wrote that '[s]uch an extravagant compliment is... unique in the history of Darwin's long writing career'.The correspondence between the two continued from 1869 to 1875. In the introduction to the *Expression*, Darwin also thanked – among many others – Mr. Patrick Nicol of the Sussex Lunatic Asylum, who was a former assistant at Wakefield.

[354] Darwin (1998) p. 20.

[355] J. Crichton-Browne to C. Darwin, 27 Dec. 1873 (DCP, 9190).

[356] C. Darwin to J. Crichton-Browne, 30 Dec. 1870 (DCP, 9193).

[357] J. Crichton-Browne to C. Darwin, 6 June 1870 (DCP, 7221), Quoted in Darwin (1998) pp. 204-205. For more on the history of diagnosing general paralysis, see Davis (2008), esp. pp. 83-124.

[358] Who Named It? A Dictionary of Medical Eponyms. 'Crichton-Browne's sign' (no date) [Online] www.whonamedit.com/synd.cfm/2160.html [Accessed 20 Jul. 2011]. Crichton-Browne had already mentioned these signs at a meeting of the Medico-Psychological Association in January 1871. See [Anon.] (1871) pp. 148-149.

interesting signs to Crichton-Browne as the trembling, obviously the result of a motor cause, was in the 'muscle of benevolence *par excellence*', indicating an 'intimate union of the mental and motor symptoms.'[359] This idea was to prove central in his studies in the mortuary.

Figure 3.5: Photograph of a woman suffering from general paralysis of the insane.
This photograph, taken in the West Riding Lunatic Asylum Photographic Studio, is attributed to James Crichton-Browne, circa 1869, though it is likely to have been taken by Henry Clarke at a later date. The original was 9cm x 5.5cm.
[Wellcome Library, London: Iconographic Collection 347834]

III. 'Therapeutic agents critically employed': Drugs, Degeneration, and Moral Treatment

The recording of asylum patients in case notes could thus take many forms, including psychological diagnosis, physical description, physiological measurement and physiognomic analysis. Case notes were also the place to record the medical treatments

[359] [Anon.] (1871) p. 149.

patients had been subjected to, and the effects they had. Indeed, the Medico-Psychological Association's efforts in 1869 to devise a standard form for case notes had been driven by Thomas Clouston's desire to create uniformity in recording the administration of drugs, so that the effectiveness of different remedies could be judged on trustworthy, nationwide generalisations. Clouston wanted all asylum men to become 'fellow workers after a fixed plan', and saw case notes as an opportunity to raise medical psychology as a scientific disciple, 'a noble reward for much hard work and self-denying drudgery.'[360] His aim was well-placed. The use and investigation of drugs was fundamental to the asylum officer's work, with the pages of case-books and medical journals across the country filled with attempts to utilise the medical pharmacopeia in the treatment of insanity. Given a somatic conception of insanity as a disease of the brain, drugs were seen as the primary agent through which a physical cure could be effected – 'psychiatry derived not just its mandate, but also its therapeutics from its metaphysical embrace of the body.'[361] The use of drugs was foundational to the very role of the asylum doctor, to control and cure the nation's lunatic population, with W.A.F. Browne arguing that if such therapeutic agents were cast aside, 'it will become the duty of the physician to give place to the divine or moralist'.[362]

Yet not all in the profession were enamoured with the value of such remedies. The mid-century growth of laboratory chemistry produced an array of new synthetic compounds and botanical extracts as potential medications, which Daniel Hack Tuke, writing in 1882, enumerated.

> Hypodermic injections of morphia, the administration of the bromides, chloral hydrate, hyoscyamine, physostigma, cannabis indica, amyl nitrate, conium, digitalis, ergot, pilocarpine, the application of electricity, the use of the Turkish bath and the wet pack, and other remedies too numerous to mention, have had their strenuous advocates during late years.[363]

Tuke was somewhat disparaging of such treatments, noting a lack of consensus on the value of pharmaceutical remedies, and the dangers of indiscriminate use. 'Psychological Medicine', he wrote, 'can boast, as yet, of no specifics, nor is it likely, perhaps, that such a boast will ever be made.'[364] Crichton-Browne did not share this sentiment, having overseen the employment of every one of those listed remedies (and more) in the West Riding. Drugs were necessary to alleviate and control the troubling symptoms encountered in the asylum,

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[360] Clouston (1870) pp. 26, 30.
[361] Scull (1993) pp. 232-244 (241).
[362] W.A.F. Browne (1864) p. 311.
[363] D.H. Tuke (1882) p. 485.
[364] *Ibid.*, p. 487.

he argued, and '[t]o dispose of the effects of narcotics in a sentence, is, as if we would teach a language in a quarter of an hour.'[365]

At Wakefield, traditional 'cures' – purgatives, emetics, opiates etc. – were administered alongside new substances in an experimental environment, and under Crichton-Browne's supervision, clinical clerks and assistants were directed to conduct research on specific topics. Nearly a quarter (eighteen) of the eighty articles published in the *Reports* were directly concerned with tests and trials of the dispensary's supplies, on both patients and animals, and many more passed comment on pharmaceutical treatment. For example, Samuel Mitchell investigated the stimulating actions of nitrous oxide and ether, Robert Lawson studied the therapeutic value of hyoscyamine, and John Wallis examined the effects of chloral hydrate.[366]

With only a limited understanding of how they operated, drugs were tested with certain questions in mind: what physiological action do they have on the body; do they operate on the mind, or on physical symptoms; how do they stimulate or antagonise various conditions of insanity; and how does their dosage alter their effect? Physicians debated the immediate causes of insanity, which could be a product of altered blood flow, toxic substances in the body, or disorder and damage originating in the cellular components of the cerebral matter. They debated the agonistic or antagonistic properties of drugs in relation to such causes. And they debated the value of drugs in various conditions, according to the physiological changes or long-term outcomes of administration. The experimental use of drugs at Wakefield was, in some sense, a tentative step towards the systematic, clinical trialling of pharmaceuticals that came to assume a dominant role in twentieth-century psychiatric practice.[367] Yet the often ad hoc dispensing and uncertain conclusions demonstrated the difficulties in medical psychology's treatments. 'We are too apt to demand a physiological passport of every proposed remedy', Crichton-Browne argued, when 'surely, in utter darkness, it is better to grope about... better to treat symptoms than to treat nothing.'[368]

Inside the Asylum, medical therapeutics were a part of daily life. Ordinary medicines were stored in the wards under the nurses' lock and key and, on the direction of the attending officer, special medicines were procured from the dispensary, in the basement of the main building, three times a day. Medicines served three main purposes: to alleviate urgent symptoms, to obviate general illness, and to remove the underlying disease of the

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[365] 'Report of the Medical Superintendent' 29th January 1868 (WYAS C85/1/12/2) p. 23.
[366] See Table 2.1 for a full list of articles published in the *Reports*.
[367] This view has been expressed by Adams (2010). For more on the development of psychopharmacology, see: Gatehouse (1981) esp. pp. 73-81, 105-115; Healy (1996; 2002); Shorter (1997) esp. pp. 190-325.
[368] J. Crichton-Browne, 'Notes on the Pathology of General Paralysis of the Insane', *WRLAMR*, 6 (1876) pp.170-231 (175).

brain. Treatment was, in principle, to be founded upon the primary diagnosis of the patient and the pathological condition from which their symptoms arose.[369] In practice, however, treatment was often reactive, and a multitude of remedies might be tested until a positive response was found. The previously mentioned case notes of Elizabeth Cobley, published in the *Reports*, are indicative of this. Indeed, in choosing to make public the therapeutic regime to which she was subjected, the asylum officers of Wakefield presented her case as a manifesto for their embrace of medical science, and the wide-scale, experimental use of drugs in asylums.

Having established a diagnosis of epilepsy, the officers prescribed Cobley triple daily doses of the 'special medicines' potassium bromide, a well-known sedative supposed to suppress epilepsy, and ergot, a plant extract thought to work by constricting blood vessels. Crichton-Browne had published articles on the actions of both these drugs, and one of his clerks, E. Churchill Fox, had suggested from trials that the two ought to be prescribed together in cases of epilepsy.[370] In addition to these, various common treatments, such as calumba, castor oil and syrup of ipecac were ordered for digestive ailments, whilst Cobley continued to be monitored. Within ten days of admission, however, the increasing severity of her fits led the officers to increase their treatments. At times she became violent and had to be restrained or placed in a padded cell, and she spoke of a ticking clock being wound up in her head before each seizure, with a voice telling her to kill someone.

The hypnotic and sedative chloral hydrate was tried first, a drug only introduced by Otto Liebreich of Berlin in 1869 yet which had quickly became so popular that by 1871 'a river of chloral has flowed through the land'.[371] It had little immediate effect at the height of the paroxysms, but a 'periodicity' was observed in Cobley's fits, which appeared to peak with her cycle of menstruation. She was next given nitrite of amyl, a vasodilator which Crichton-Browne had previously tested on patients and animals, and believed to be effective in diminishing the excitability in the brain and asphyxia which caused epilepsy.[372] Her condition became so critical that this soon had to be omitted: she became semi-comatose, feeble, and had to be fed through an oesophageal tube. Cobley then improved – it was believed her symptoms were at least partly hysterical – but the following month her seizures recurred at the same hours of the day as they had previously. To the bromine, chloral, ergot

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[369] Bucknill and Tuke (1879) p. 698.

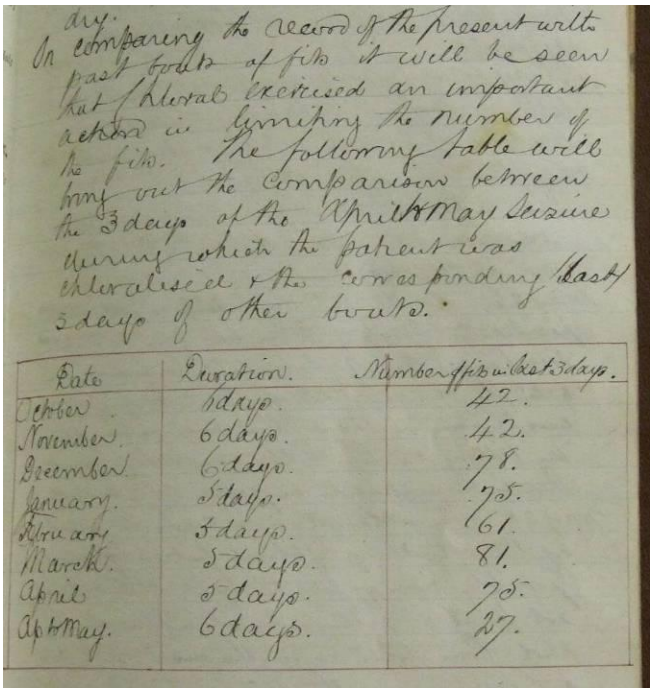
[370] Crichton-Browne had conducted studies in the use of potassium bromide at the Warwick County Asylum, and wrote on ergot after extensive studies in Wakefield. See 'The Actions of the Bromide of Potassium upon the Nervous System', *Edinburgh Medical Journal*, 10 (1865) pp. 1085-1104; 'Ergot of Rye in the Treatment of Mental Diseases', *The Practitoner*, 6 (1871) pp. 321-336. For Fox's paper, see 'Ergot of Rye in the Treatment of Mental Diseases', *WRLAMR*, 1 (1871) pp. 261-265.

[371] Crichton-Browne (1871a).

[372] J. Crichton-Browne, 'Nitrite of Amyl in Epilepsy', *WRLAMR*, 3 (1873) pp. 153-174; Crichton-Browne (1873).

and nitrite was added conium, an antispasmodic which made her fits 'decidedly less powerful', and hyoscyamine, a potent sedative.[373]

The cycle of fits continued during the first eight months of her stay, at which point – owing to the deterioration of her condition – chloral was increased up to its maximum 'safe' level. Her nightly episodes suddenly ceased, as it was realised that chloral warded off fits for a period of time in proportion to the amount given. Thus, when she became restless, or her breathing, pulse and temperature increased (signs of oncoming seizures), chloral was administered, and the epileptic attacks were abated. **[See Fig. 3.4]** The medical officers produced a table showing the change in her illness brought about by this discovery, and were happy to declare that with chloral, '[e]very separate attack could be thus warded off at pleasure'.[374] **[See Fig. 3.6]** Hyoscyamine was also found to work in the same way, and by



On comparing the record of the present with the past bouts of fits it will be seen that Chloral exercised an important action in limiting the number of the fits. The following table will bring out the comparison between the 3 days of the April/May Seizure during which the patient was chloralised & the corresponding last 3 days of other bouts.

Date	Duration.	Number of fits in last 3 days.
October.	9 days.	42.
November.	6 days.	42.
December.	6 days.	78.
January.	5 days.	75.
February.	5 days.	61.
March.	5 days.	81.
April.	5 days.	75.
Apr/May.	6 days.	27.

Figure 3.6: Passage from the case notes of Elizabeth Cobley.
"On comparing the record of the present with the past bouts of fits it will be seen that Chloral exercised an important action in limiting the number of the fits. The following table will bring out the comparison between the 3 days of the April/May Seizure during which the patient was chloralised & the corresponding last 3 days of the other bouts." The number of fits was brought down to a third of their previous maximum, and even this reduced figure, it was supposed, would have been lower had chloral been administered consistently.
[WYAS, C85/3/6/32]

[373] Conium had been investigated by J. Wilkie Burman, 'On Conia, and its use in subcutaneous injection', *WRLAMR*, 2 (1872) pp. 1-40. Hyoscyamine was studied by R. Lawson, 'On the Physiological Action of Hyoscyamine', *WRLAMR*, 5 (1875) pp. 40-84; 'Hyoscyamine in the treatment of some diseases of the insane', *WRLAMR*, 6 (1876) pp. 65-84. Lawson referred to Cobley in the second of these papers.
[374] Medical Officers of the West Riding Asylum, 'A Case of Epilepsy (Under the Care of Dr Crichton-Browne)', *WRLAMR*, 6 (1876) p. 248. Information also in medical case book (WYAS C85/3/6/32).

paying close attention to her symptoms they could predict an attack in advance: on the 22nd and 23rd of August 1875, observations were apparently made every five minutes during the day to confirm that physical changes preceded seizures. Between months eight and thirteen of Cobley's stay, her fits continued but became fewer and milder, to the point where they ended altogether. The officers noted that these epileptic episodes coincided with heavy or irregular menstruation, which had now become 'regular, and more natural in every way'. The conclusion was reached, therefore, that 'the attacks depend on the condition of the uterus.'[375]

For the final five months of her stay in West Riding, Elizabeth Cobley was given no more chloral or hyoscyamine – only iodide of potash was sparingly used, its strong physiological action presumed to maintain normal menstruation – and she suffered no more fits. With a cured patient and patently satisfied doctors, her case appeared in full as an article a few months after she and Crichton-Browne had left the asylum. Cobley's case illustrates how, committed to a somatic understanding of epilepsy but uncertain as to its exact nature, the medical officers were at times empirical and theoretical in employing treatments, considering blood flow, cerebral nervous activity, and bodily toxins as all potential causes of the disease. Every drug given to Cobley had appeared, at some point, in experimental or observational treatises in the *Reports*, so that the officers could refer to an account of the actions of a given chemical, and utilise this in combination with their observations.

The cumulative result of observation, treatment and recording was the creation of histories of patients within the case books, of two subtly different kinds: firstly, of the symptoms, remedies and responses seen by the doctor; and secondly, of the long-term developments in patients' conditions.[376] The first – recorded histories of medical supervision and intervention, as evinced by Cobley's case – represented the explicit optimism of the medical-scientific methods adopted at Wakefield. By contrast, the long-term histories of patients pointed towards a wide belief, shared by Crichton-Browne and many in his profession, that insanity was a problem of degeneration. Individuals degenerate, sinking interminably towards chronic dementia – 'the sequel of other forms of mental

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[375] *Ibid.*, p. 253. The link between menstruation and mental illness was widely acknowledged in the nineteenth century, but it was only with the work of the famous psychiatrist Richard von Krafft-Ebing, from 1878 onwards, that it became more closely studied. He introduced the term 'menstrual psychosis', to describe the condition, in 1902. To engage in a moment of retrospective diagnosis, it is now thought to be a self-limiting condition, so its disappearance from Cobley could well represent its natural course. However, it remains a rare condition suited to single patient trials, as in the report. Similarly, chloral is supposed now to have no effect in stopping the discharges that initiate epileptic fits, yet sedative drugs like it are still the best available method for arresting a patient suffering a similar attack. For more on the historical links between femininity and madness, see Showalter (1987).

[376] See Gillis (2006), who writes, 'The patient history became incorporated into the physician's examination as another set of observations and signs, thus producing two histories: a superficial, chaotic story presented by the patient, and a deep, "true" history revealed by the skill of the physician.'

disease' – if they were not soon diagnosed and treated in a proper environment; and the human stock degenerates, as the hereditary taint of insanity is passed on through generations.[377]

Describing the growth of the Asylum, he explained to his committee that

> [t]he etiology of brain disease is not so simple a matter. It is out of a flux of causes, physical and moral, often blended and inextricably commingled that insanity springs. The follies, vices and misfortunes of our ancestors, as well as the indiscretions, vicissitudes and privations of to-day, are all represented in its insanity[.][378]

Understanding insanity this way – in its historical perspective, as a somatic disease of multiple background causes which steadily impacted on the mental and physical functions of the individual – was, in large part, a product of the nineteenth-century asylum. As Hayward has written,

> [t]he long-term segregation of the insane turned them into a distinct population and made visible the developmental histories of their illnesses. Their conditions were no longer seen as an unhappy reaction to the vicissitudes of life, but as morbid processes with specific aetiologies.[379]

Through observing and recording patients, asylum men came to see insanity in terms of its history: the failures that led to it, and its consequences in the sufferer. Family history was questioned, since the occurrence of mental disease in a close relative could indicate a patient's predisposition to insanity; and 'diatheses' were looked for, these being peculiarities or weaknesses of constitution that made someone liable to mental disorder. The exciting causes of an attack – illness, grief, religious excitement or financial troubles, for example – were only the stimuli that revealed an underlying problem.[380]

Such an approach was well-supported by the theory of degeneration, as propounded by the French asylum physician Benedict Morel, in his 1857 *Traité des dégénérescences*.[381] Degeneration was a pathological process, whereby individuals or groups underwent such deterioration in their physical or psychological character that they constituted a lower, less adapted version of the species than their parents, and would pass on these diminished characteristics to their offspring. There was nothing new in linking insanity with heredity. Asylum doctors earlier in the century all agreed, according to Andrew Combe, 'that a

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[377] J. Crichton-Browne, 'Acute dementia', *WRLAMR*, 4 (1874) p. 265.
[378] 'Report of the Medical Superintendent' 29th January 1874 (WYAS C85/3/6/3) pp. 16-17.
[379] Hayward (2011) p. 530.
[380] See Bucknill and Tuke (1879) pp. 54-108. Crichton-Browne (1926) p. 293, wrote 'Man is born charged at birth with a series of hereditary tendencies, most of which are then potential, but which spring into activity on the occurrence of appropriate stimuli'.
[381] B.A. Morel, *Traité des dégénérescences* (Paris: J.B. Balliére, 1857). For background, see: Clark (1982) esp. pp. 130-172; Dowbiggin (1985); Pick (1989) esp. pp. 176-221; Liégeois (1991); Waller (2001).

condition of the brain, rendering it unusually susceptible to those diseases which are attended by mental derangement, is hereditary'.[382] The family taint of insanity was widely acknowledged before degeneration came along, so the real significance of degeneration for medical psychology, it has been said, 'lay rather in its unprecedented capacity to organise so many hitherto isolated and relatively unimportant medico-psychological and social facts into a single, global phenomenon vitally affecting the welfare of society as a whole.'[383]

As phrenology had been adopted by British alienists earlier in the century, degeneration was adopted by the profession of Crichton-Browne's generation. It was a scientific theory that explained and justified the practice of medical psychology and its somatic emphasis, and in recognising specific characteristics of degeneracy, it 'held out hopes of establishing unequivocal physical signs of mental illness, more tangible than the variable changes hitherto demonstrated in the brain'.[384] Furthermore, it aligned with the dominant biological theory of its day, Darwinian evolution, and that alignment occurred in part through Crichton-Browne's contributions to Darwin's work. As one recent article has it, '[t]he courtship between evolutionary theory and psychiatry goes back to the close collaboration between Darwin and the later doyen of British psychiatry, James Crichton-Browne.'[385]

The most prominent advocate of degeneration theory in mid-Victorian Britain was not, however, Crichton-Browne, but his friend and the man who introduced him to Darwin, Henry Maudsley (1835-1918).[386] **[See Fig. 3.7]** Physician to the private Lawn House Asylum, Maudsley, at the time Crichton-Browne took over in Wakefield, was also editor of the *JMS*, soon to be President of the Medico-Psychological Association, and the most influential medical psychologist in Britain. Variously described as a positivist, determinist, Lamarckian, materialist and pessimist, Maudsley was responsible more than any other individual for introducing the theory of degeneration into British medical discourse. The degenerate was an evolutionary throwback, whose higher powers of mental reasoning had decayed to leave the less evolved, more primitive functions of the brain in control. '[Why] should a human being deprived of his reason ever become so brutal in character as some do', Maudsley asked, 'unless he has the brute nature within him?'[387] It wasn't just a problem for the patient, however, but for his offspring too. Each lunatic, Maudsley wrote,

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[382] A. Combe (1831) p. 91.
[383] Clark (1981) p. 165.
[384] Ackerknecht (1968) p. 54. See: Clark (1982); Cooter (1981) for a comparison to phrenology.
[385] Adriaens and De Block (2010) p. 136.
[386] For more on Maudsley, see: Lewis (1951); Rollin (1991); Scull, MacKenzie and Hervey (1996) pp. 226-267; T. Turner (1988); Walk (1976). Darwin had been reading Maudsley's 1868 work, *The Physiology and Pathology of Mind*, and wrote to him in 1869 seeking his psychiatric expertise. Maudsley, lacking the opportunities to assist in this request, passed the letter on to his younger colleague in the West Riding. See H. Maudsley to C. Darwin, 20 May 1869 (DCP, 6752). See also Pearn (2010) pp. 164-165.
[387] Maudsley (1870) p. 51.

'represents the beginning of a degeneracy which, if not checked by favourable circumstances, will go on increasing from generation to generation and end finally in the extreme degeneracy of idiocy.'[388] Insanity was the product of evolution in reverse.

Fig. 3.7: Henry Maudsley. Photograph by G. Jerrard, 1881.
[Wellcome Library, London: ICV No. 27281]

Maudsley was scathing of asylums, of their forms of treatment and of the stock of knowledge they purported to hold. He viewed other alienists almost as pessimistically as he viewed insanity itself, and attacked the profession for its over-reliance on chemical restraints, using sedatives to silence troublesome patients when they were 'grievously in want of exact information' as to the actions of these drugs.[389] Asylums, he felt, frequently exacerbated the problems of insanity rather than helping them, and in any case he was deeply sceptical of the possibility of any cures as, being a hereditary disease, its cessation would be found only with the end of the ancestral line. The future was not bright. Seeing how varied the causes and phenomena of mental degeneracy were, and how little exact

[388] Maudlsey (1874) p. 46
[389] Maudsley (1871) p. 331. The overuse of drugs is a criticism Scull has also levelled against nineteenth-century psychiatry, and which has in turn gained him the ire of the psychiatric profession.

knowledge psychiatrists held of the conditions they purported to treat, Maudsley argued that the profession's task 'for some time to come must be to learn rather than to teach, to practice observation until it has acquired much more exact data than it is yet in possession of.'[390]

Crichton-Browne shared an agreement on the necessity of research, and an acceptance of degeneration with Maudsley, but did not share this extreme pessimism for his asylum. He genuinely believed that progress was being made in understanding of the physical causes of insanity in the cerebral matter. He held faith in the efficacy of the asylum's therapeutic regimen, which, as Chapter One argued, he was greatly invested in through his father. And he maintained strong Christian beliefs throughout his career, whereas Maudsley 'progressed into scientific materialism and agnosticism where [he] could not then follow him.'[391] With medical treatments, he believed it was 'indubitable that much might be done that is left undone in recent cases of mental disease, and that everything is still to be achieved for those of a more confirmed character.' This was, as Neve and Turner would describe it, 'the full force, some of it humane, some of it cruel, of Crichton-Browne's optimism.'[392]

Maudsley's scorn did not just cover contemporary physical treatments, but also the psychological environment, and the Christian morality that guided patient management in most asylums.[393] Since the second quarter of the century, 'moral treatment' had dominated as an approach to treating the mad. Originating in Paris with Pinel, moral treatment was built on an ideal of non-restraint, with patients treated like children in a family, learning to develop self-control, rationality, and morality from their leader. Born out of a reaction to the abuses of earlier asylums, it viewed insanity as a psychological disturbance, to be treated by psychological (moral) means. Given a distinctly Quaker (and avowedly non-medical) rationale at the York Retreat, it posed a challenge to the medical men running asylums, but, as Chapter One outlined, was adopted and interpreted as having a medical explanation by mid-century alienists like W.A.F. Browne.[394]

Whilst to an atheist like Maudsley its religious aspects were problematic, to Crichton-Browne, the Christian son of W.A.F. Browne, there was no such problem with moral treatment, and he was happy to maintain it as the basis of asylum practice. He

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[390] Maudsley (1871) p. 319.
[391] Crichton-Browne (1920) p. 213.
[392] 'Report of the Medical Superintendent' 29th January 1868 (WYAS C85/1/12/2) p. 24; Neve & Turner (1995) p. 400.
[393] Maudsley (1871) p. 323. See also Scull, MacKenzie and Hervey (1996) pp. 241-242.
[394] For more on moral treatment and the Retreat, see: Scull (1981; 1993) esp. pp. 175-231; Digby (1985); Cherry (1989).

informed his Committee that 'Medical and Moral Treatment have been diligently carried out with growing confidence in the efficacy of both.'[395]

> The moral treatment of insanity is almost as incapable of succinct consideration, as its medical regimen. Embracing, as this moral treatment does, every impression made upon the senses of the lunatic [...] It is only necessary to report that no pains have been spared in these respects [and the] most remarkable and beneficial results have accrued from all such efforts.[396]

Moral treatment, or 'moral management', which underlay the governance of the asylum's patients, was never discussed in individual case notes, though it was an implicit part of the system. If the breakdown of moral control, a key characteristic of the insane, could be both a cause and consequence of mental illness, then it was a key role of the alienist to maintain an orderly and sombre environment to assist in recovery. Diseased cerebral processes interrupted proper mental functions, but if the right mental processes could be imposed, then the underlying physical properties of the brain might be restored before they were permanently disordered.

At Wakefield, this meant the patients were well occupied. Crafts, farming, church, manual labour, gentle exercise and regular entertainments, all had their use not only in healing patients, but in the up-keep of the Asylum. Time and expense were also spent in improving the diet and hygiene of patients, ensuring the proper nutrition and prevention of disease that was so important to good mental health. Indeed, for those patients whose condition was difficult to diagnose, the physician had to 'avoid interference which may be mischievous, and be content to temporise; [...] retaining his patient in an atmosphere of physical and moral hygiene.' Moral treatment was the 'fall back' when physical treatments were not, or could not be, used.[397] 'While treating mainly to physiological methods', Crichton-Browne wrote, 'it is impossible for anyone who has long and truly studied the insane to deny that their malady may in some instances be reached and assuaged by psychological means.'[398]

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[395] 'Report of the Medical Superintendent', 26th January 1871 (WYAS C85/1/12/3) p. 26.
[396] 'Report of the Medical Superintendent' 29th January 1868 (WYAS C85/1/12/2) p. 24.
[397] Bucknill and Tuke (1879) p. 699.
[398] Crichton-Browne (1926) p. 105. While Crichton-Browne, and Bucknill and Tuke, stated this as a methodological position, Scull has claimed it was more an expression of the failure of medical remedies. See Scull (1993) p. 244.

IV. 'Post-Mortem examinations invariably and exhaustively performed': Matter over Mind in the Explanation of Insanity

Each year of Crichton-Browne's reign, around 40-50% of annual admissions left the asylum recovered. A similar amount remained unimproved, and either continued their stay in Wakefield or were moved on, to another institution or the care of family members. For the unlucky remainder, for whom neither physiological nor psychological means of treatment were effective, the ultimate study of their condition came in the mortuary. The 10-15% of patients who died inside the asylum's walls each year were dissected, examined, and recorded in post-mortem reports, the third main element in Crichton-Browne's grand plan. Only with death did the brain become accessible, when it could be removed from the body and studied in close detail as the clinical-pathological model necessitated. If patient impressions were minimal in the case books, they were (necessarily) entirely absent in the autopsy reports, where the view of the pathologist was paramount. Symptoms were no longer present – 'all traits of madness vanish from the insane at the touch of death' – but the pathological conditions which gave rise to the diseased mind could be seen.[399] With death, Crichton-Browne noted, the 'mysterious association' of mind and body is ended. 'A momentous change has taken place. Now moments of change are the opportunities of science. Analysis is only possible in decomposition, hence the importance of studying death.'[400]

Just as in life, where patients had no control over the treatments and conditions they were subjected to, so in death were pauper bodies made available for medical study unless expressly objected to by the family.[401] In practice this was a rare occurrence. Bodies were a valuable commodity, in demand by teaching hospitals and research laboratories, and asylums had a plentiful supply. Between 1832 and 1929, it is estimated that 'not less than thirty per cent of pauper lunatics who entered public asylums and died on the premises were sold on for dissection', contributing to a trade in 125,000 cadavers across England.[402] No evidence exists, however, that the West Riding Lunatic Asylum dealt in this business.

[399] Crichton-Browne (1926) p. 228.
[400] Crichton-Browne (1927) pp. 55-56.
[401] Wickham (1877) complained that post-mortem examinations in asylums stood in a legal grey area. Families were often written to, explaining that an autopsy would be conducted unless objected to, and only rarely did they reply. However, legally speaking, autopsies were not meant to be carried out without positive support, which would have been impractical to obtain. The Anatomy Act of 1832 had decreed that bodies that went unclaimed could be dissected for medical purposes. Families had six weeks to raise the funds for burial if they wished to claim the body, but burial would be paid for by the asylum in return for allowing dissection. In effect, 'dissection was the punishment for poverty'. See Richardson (2001) for background on the Anatomy Act 1832. A recent special edition, 'Lunacy's last rites: dying insane in Britain, c. 1629-1939', *History of Psychiatry*, 23 (2012) pp. 1-136, has provided a number of articles on the social, ethical and political aspects of death in asylums. Several of these are referred to in this chapter.
[402] Hurren (2012) pp. 66-67. For more information on the trade in Victorian bodies, see also Hurren (2011).

Besides, it had its own uses for them. On 11th May 1867, around ten months after Crichton-Browne took charge, the first entry was made in the first volume of post-mortem reports at the Asylum. It is almost certain that he had already been conducting autopsies before this date – his first annual report to the Committee discusses several causes of death amongst patients – but no archival evidence remains of these. The delay in commencing written reports was probably the result of his first settling into the new surroundings, though it is noteworthy that their appearance also coincided with the appointments of the first two clinical clerks in Wakefield, Dr Charles Fryer, & Dr W.P. Ledgard.

Before the post-mortem reports were initiated, only patients dying of unknown or suspicious causes were subjected to recorded study, with just forty-one conducted in the ten years prior to 1867, and even then only to confirm cause of death. A single book had been enough to contain all coroners' warrants at the asylum for the previous thirty-five years.[403] In the ten years after 1867, however, well over one thousand post-mortem examinations were made filling two volumes a year. 965 of the 2,344 pages of post-mortem notes completed whilst he was director were in Crichton-Browne's own distinctive handwriting, indicating a heavy personal involvement in the project.[404] **[See Fig. 3.10]** To ease this workload, as discussed in the previous chapter, the 'somewhat momentous step in the march of scientific progress' was taken in 1872 when Wakefield appointed Dr T.W. McDowall as full-time pathologist. Yet whilst the role of the pathologist was in the dead-house and laboratory, it could not be forgotten that the aim of this work was to better understand the insane mind. Thus 'in order to keep up his clinical acquaintance with disease, and to extend that medical inspection of the wards to which paramount importance is attached, [the pathologist] should make an evening visit, accompanied by the Clinical Clerks, and should guide their observations.'[405] The clinic and the mortuary were to inform each others work. Diagnosis without pathology was blind; pathology without diagnosis was empty.

When a patient died the local coroner was informed, and the body was transferred from the ward to the dead-house, in a building separated from all living quarters. **[See Fig 2.4 in previous chapter]** 'The stillness of the death chamber', Crichton-Browne wrote, 'is a stillness audible. You enter it softly with bated breath.'[406] Once the sheet had been turned down and the body prepared, the dissection and recording began. Such examinations 'do not consist in a cursory glance at one cavity,'

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[403] See 'Coroner's Warrants' (WYAS, C85/1117). It was a condition of the Lunacy Amendment Act (1862) that coroner's should be notified of every death. See Michael and Hirst (2012) p. 43. Crichton-Browne (1926) pp. 57-58, later noted his nervousness at his first coroner's inquest in 1866, which was eased when the jury requested he buy them some beer.

[404] 'Post Mortem Reports' (WYAS C85/1118-1123). Crichton-Browne had a distinctive backward-slanting handwriting style, always in a wide-nibbed pen, which identifies it apart from other physicians' entries. His last entry in the post-mortem reports was on 9th March 1876.

[405] 'Report of the Medical Superintendent', 30th January 1873 (WYAS C85/1/12/3) p. 28.

[406] Crichton-Browne (1926) p. 249.

> but in a minute inspection of all the viscera. They are exhaustive and complete, and it would seem to be especially requisite to give any value to them, in the case of the insane, that they should be so.[407]

A post-mortem was a substantial and time-consuming endeavour. Between thirty-six and seventy-two hours after death the head, thorax and abdomen were studied sequentially, and the condition of the organs contained within those sections was assessed. The brain, heart, lungs, liver and kidneys would be examined and weighed, and the muscles, skin and bones of the (decaying) body were analysed for signs of recent injury or malnutrition. Autopsies

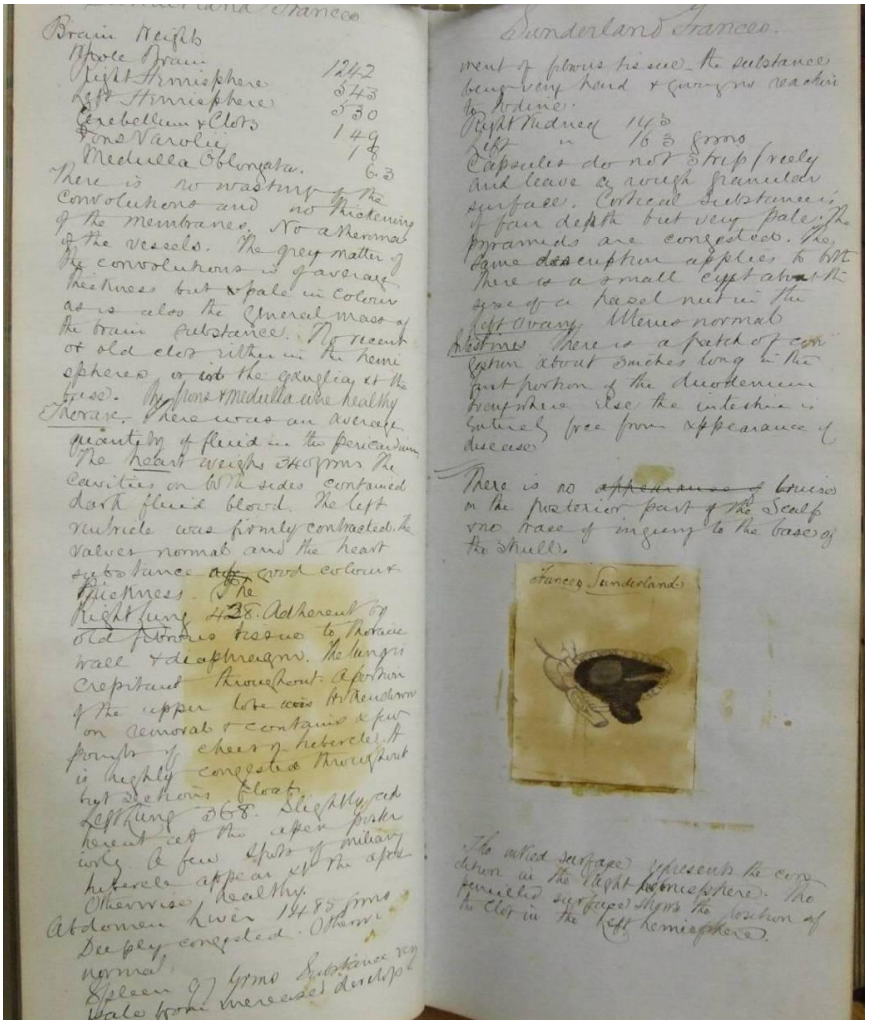

Fig. 3.8: Pages from an entry in the post-mortem reports. Unknown handwriting.
The layout of each report varied, but typically presented observations of the body working downwards from the head. In this entry, recording goes through observations and weighings of the brain, thorax, abdomen (including the liver, spleen, kidneys and reproductive organs), and an assessment of the intestines. The patient had suffered a clot in the left hemisphere and general wasting across the right hemisphere, represented by ink and pencil marking drawn on the attached image.
[WYAS, C85/1121]

[407] "Report of the Medical Superintendent", 29th January 1874 (WYAS, C85/1/12/3) p. 29.

were recorded in large, hard-bound volumes which, significantly, were kept separate to the case notes.[408] **[See Fig. 3.8]** This meant that for any doctor or clerk wishing to research the links between a patient's observed symptoms and their post-mortem appearance for purposes of research, they had to correlate two different volumes. That is, clinical-pathological correlation was not a process of assimilating symptoms with anatomical appearances, but one of connecting written case books with written post-mortem reports. The reason for this separation of recorded materials may well have been pragmatic, as the physical separation of the wards and the dead-house probably made it more convenient for each to maintain their own records.[409] It was an important distinction, however, as it meant the post-mortem reports assumed an organisation and rationale of their own. Their special purpose was indicated in the opening pages, where each volume began with an index entitled 'Special Cases (cerebral)'. When interesting things were seen in the brain – around one in seven were considered 'special – they were noted, and indexed according to both their appearance and location. Under 'C', for example, might be found 'Cavity in Left Hemisphere', 'Choroid Plexus Degeneration', 'Clot in 4th Ventricle', or 'Cyst under Dura Mater'. The whole body was studied, but it was the brain that really mattered. In conducting post-mortem examinations, and writing these up, the asylum's men were creating a catalogue of brain reports, which could be referred to at leisure as the starting point for research.[410]

Wakefield was not alone in attaching significance to the collection of pathological records, and Crichton-Browne had no claim to priority in the practice of large-scale post-mortem investigations. The fact was, asylum superintendents had long been convinced that a connection existed between the symptoms of insanity and the brains they observed. Dr Skae of Edinburgh, Dr Davey of Bristol, and Mr Arlidge of St. Lukes in London, for example, had been engaged in recording the cerebral pathology of the insane as early as the 1850s.[411] By the 1870s, several alienists, including Crichton-Browne, were promoting

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[408] Like the case books, the dimensions of the post-mortem reports was around 40cm (height) x 18cm (width), and around 700 pages in length. These were not pre-printed.

[409] This idea was suggested by Dr Adrian Wilson. It was often the case, where post-mortems were conducted, for these to be appended to case notes. For example, at Queen Square Hospital, London, where autopsies were an important element of research, separate post-mortem volumes were not begun until the early 1980s; and Andrews (1998) says separate pathological registers were only introduced at the Gartnavel Royal Asylum in Glasgow in 1889, though they may have been introduced at Edinburgh, under the previously mentioned Dr Skae, as early at the 1860s. See Andrews (2012).

[410] For example, Henry Sutherland, 'Arachnoid Cysts', *WRLAMR*, 1 (1871) pp. 218-232, looked at ten cases of arachnoid cysts from the Asylum's reports, an occurrence caused by extravasated blood gathering on the convolutions of the brain undergoing some unknown, morbid change. Sutherland noted from their case histories that the patients in whom these were found suffered pain in the head and a gradual loss of intellectual powers before death.

[411] See: Arlidge (1854); Davey (1853); Skae (1855). Even earlier, non-systematic post-mortem examinations were conducted in asylums, like W. Davidson, 'Cases with Dissections and Remarks', *Edinburgh Medical & Surgical Journal*, 36 (1831) pp. 35-44.

systematic post-mortem examinations for all asylums.[412] In 1871, some four years after the practice had been initiated in the West Riding, James Howden of the Montrose Asylum explained how an index of post-mortem appearances could be of great value in gathering statistical facts on insanity. Out of 235 brains examined, he had found 189 presented abnormalities. The following year J.B. Tuke of Fife and Kinross followed Howden's plan and began publishing tables of observed brain lesions as an appendix to his asylum's annual reports. **[See Fig. 3.9]** Then in 1873, Howden's former assistant W.G. Balfour collated these observations with even more collected at the Colney Hatch Asylum, to present the records of 700 insane brains.[413] Wakefield did not include such information in its annual asylum records, so neither Howden, Tuke or Balfour made any mention of it in their cumulative enterprise. Autopsies were emphatically not, as has been argued elsewhere, 'merely a way 'to minimize the amount of time they [medical officers] were forced to spend in the unpleasant and disturbing company of patients'.[414] Rather, they were the primary means by which asylum physicians attempted to link the condition of insanity with changes in the brain, the *raison d'être* of medical psychology. The view that physicians 'clung to the belief that madness was caused by physical changes in the brain tissue, despite their inability to locate such changes in post-mortem dissections', is demonstrably wrong.[415] Asylum doctors were reassured of the somatic basis of madness *because* of their post-mortem studies where, it was claimed, '[c]opious evidence exists as to the degenerations consequent upon brain changes'.[416]

One of the principal methods of analysing brains was by weighing. At Wakefield, from the moment the post-mortem reports were started in 1867, the whole brain was weighed like other bodily organs, with a separate measurement often taken of the cerebellum, a part known to be important in coordinating movement. By 1871, the medical officers weighed the medulla and pons Varolii (which comprise the brain stem) too, and around 1873 they began to weigh the two halves of the cerebral hemispheres. Given the common belief that brain size correlated approximately with intelligence, the brains of the insane were assumed to be smaller, on average, then the norm; their mass reduced by the degeneration of disease. These measurements were put to use in a series of three articles in the *Medical Reports* by William Clapham, a clinical assistant and fellow of the London Anthropological Society. Clapham categorised 1,200 brains from Wakefield to test the correlation of weight with insanity, as well as other characteristics like age or religious persuasion, and applied a 'conformateur' – an instrument used by hatters to obtain the form

[412] Andrews (2012) pp. 14-15.
[413] See: Howden (1871); Balfour (1874).
[414] Scull (1993) p. 263.
[415] Cook (1998) p. 93.
[416] W.A.F. Browne (1861) p. 75.

of the head – to ‘the crania of the insane as a means of discovering their prevailing shape’, and compared their measurements with inmates of the West Riding Prison. The conclusions were opaque, only hinting at some noticeable differences in the insane or criminal. Clapham’s presumptions were clearer: the brains (and skulls) of patients made for interesting anthropological study, as they fundamentally differed from normal individuals. The belief that insane brains were different meant they were weighed and compared.[417]

TABLE SHOWING THE NAKED-EYE APPEARANCES OBSERVED IN THE BRAINS OF SEVENTY PERSONS WHO HAVE DIED IN THE FIFE AND KINROSS DISTRICT ASYLUM.

NATURE OF LESION.	Idiophrenic Insanity.						Sympathetic Insanity.				Anæmic Insanity.				Toxic Insanity	Terminative Stage. *			
	Idiopathic Insanity.	General Paresis of the Insane.	Paralysis with Insanity.	Traumatic Insanity.	Senile Insanity.	Epileptic Insanity.	Insanity of Masturbation.	Climacteric Insanity.	Insanity of Pregnancy.	Puerperal Insanity.	Limopsoitos.	Post Febrile Insanity.	Insanity of Lactation.	Insanity of Tuberculosis.	Insanity of Alcoholism.	Dementia.	Chronic Mania.	Congenital Idiocy.	Total cases.
No. & Sex.	2 M. 5 F.	4 M. 1 F.	2 M. 5 F.	2 M.	2 M. 12 F.	6 M. 1 F.	1 M.	4 M. 5 F.	1 F.	1 F.	1 M.	1 M.	2 F.	1 M.	1 M. 2 F.	4 M. 4 F.	1 F.	3 M. 1 F.	70
Calvarium—Abnormally thickened,	2	2	1	1	8	2	..	4	..	..	..	..	..	..	1	4	..	2	27
„ „ thin,	2	..	..	..	3	1	..	..	..	..	..	..	1	..	1	4	..	1	13
„ „ dense,	2	1	..	1	..	2	..	..	..	..	..	..	..	..	1	2	..	..	9
„ „ loose in texture,	1	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	3
„ perforated by Pacchionian bodies,	..	2	..	..	2	..	..	1	..	..	..	1	..	..	..	..	..	..	6
„ Diploe atrophied,	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1
„ absorption of inner table of, softening of Diploe acicular spiculæ therefrom,	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
Membranes, *Dura Mater*, thickened,	2	4	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	8
„ firmly adherent to Calvarium.	2	..	4	1	5	3	..	4	..	..	..	..	..	..	1	2	..	..	22
„ calcareous deposits on lower surface of,	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	1
„ congested,	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	3
„ sanguineous effusion on,	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1
„ „ „ under,	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	2
„ suppuration of,	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Arachnoid, thickened and opacity of,	4	5	1	1	10	1	..	4	..	..	..	..	..	1	2	6	1	3	39
„ adherent,	3	1	..	..	1	4	..	1	..	..	..	..	..	..	..	4	..	1	5
„ Sanguineous effusion into sac of,	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1
„ „ „ under,	..	..	..	..	2	..	..	..	..	..	..	..	..	..	1	1	..	..	4
„ serous effusion into sac of,	1	..	4	..	4	2	..	4	..	..	..	..	..	..	1	1	..	1	18
„ sub-arachnoid effusion,	..	4	1	..	8	1	..	4	..	..	1	1	2	..	..	4	1	2	29
„ granulations, on,	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1
„ false membrane in,	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	2
Pia Mater, injection of,	1	1	..	..	..	4	..	1	..	..	..	..	..	..	..	1	..	..	8
Membranes matted together over right hemisphere only,	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Blood Vessels, arteries atheromatous,	..	..	2	..	10	..	..	2	..	..	..	..	..	..	..	2	..	..	16
embolus in left middle cerebral artery,	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Brain Substance, general atrophy of,	..	2	..	..	9	..	..	1	..	..	..	..	..	..	1	2	..	..	15
atrophy of right hemisphere only,	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1
generally soft,	..	2	3	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6
œdema of,	..	1	2	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	5
generally congested,	..	1	1	..	..	4	..	..	..	..	..	..	..	..	..	..	1	..	7
mottled appearance on section, (naked eye)	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Grey Matter—Flattening of convolutions,	1	..	..	..	1	1	..	..	..	..	..	..	..	..	1	..	..	1	4
Dark colour of,	..	2	..	..	..	4	..	..	..	..	..	..	..	..	..	..	..	1	7
Paleness of,	1	..	..	..	1	1	1	1	..	1	1	..	1	..	..	1	..	..	9
Thinness of,	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Inflammation (acute) of,	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	3
Apoplectic cyst destroying Brocas convolution,	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Granulations on surface of convolutions,	..	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
Local atrophies,	1	3	2	..	2	..	..	1	..	..	..	1	..	..	..	..	1	..	10
White Matter—Tumour in,	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1
Softening of,	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Old clot in centrum ovale,	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	2
Old apoplectic cyst in white matter,	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1
Sanguineous Effusion at Base of brain,	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1
„ in temporal and occipital fossæ,	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Ischæmia of right hemisphere & cerebellum,	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1
Cerebellum— Atrophy of one lobe of,	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1
Softening of,	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1
Clot in left lobe of,	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Optic Thalami and Corpora Striata—	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Local red softening in right corp. striatam,	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	1
Small capillary hœmorrhages in right C.S.,	..	1	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	4
Ventricles— Softening of floor of,	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	2
Granulations on floor of,	..	5	..	..	..	..	..	..	..	..	..	..	..	..	..	6	1	..	6
Effusion into,	4	2	4	1	4	..	1	1	1	1	1	..	..	..	1	2	1	..	28
Chroid plexus cystic,	4	..	..	..	1	3	1	..	..	..	..	..	..	..	..	..	..	..	12
Granulations on floor of 4th Ventricle,	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
Pons Varolii—Granulations on free surface of,	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
Small clots in,	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Corpora Quadrigemina—Softening of,	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Fissure of Rolando—Bridging of left,	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1

Fig. 3.9: Table showing the naked eye appearances observed in the brains of seventy persons who have died in the Fife and Kinross District Asylum (in 1872).

[*Annual Report of the Fife and Kinross District Board of Lunacy* (Fife: Fifeshire Journal Office, 1873).]

Different parts of the brain were weighed separately as it was recognised that each served a different function. The most important part was the cerebral cortex, the outer shell of the brain, as it was generally acknowledged by physiological and anatomical observation that ‘the seat not only of the intellectual, but also of the emotional functions of the brain, is in the convolutions of the cerebrum proper’. For this reason, Bucknill and Tuke clarified,

417 Stephen Jay Gould, when discussing Paul Broca’s cranial studies in *The Mismeasure of Man*, referred to such an approach as ‘the great circle route’, where presuppositions influence the interpretation of evidence. See Gould (1981).

> diseased conditions which affect the mental functions must have their seat in the grey matter of the cerebral convolutions; and in speaking of disease of the brain in relation to Insanity, we desire, therefore, to be understood as speaking of the cerebral convolutions alone'.[418]

The old phrenological doctrine, that the higher mental powers resided in the highest part of the brain, was well established, and only lesions here could be properly linked with the symptoms of insanity. As Patrick Nicol, an assistant in Wakefield, put it: 'the disposition is not altered, nor insanity produced as a consequence of a lesion in the brain not affecting the superficial grey matter.'[419]

One disease particularly amenable to post-mortem analysis of the cerebral grey matter was general paralysis, the effect of which was so striking that anyone familiar with asylum autopsies, Crichton-Browne wrote, 'ought to be able to pick out the fresh brain of a general paralytic from amongst a number of other brains' solely on appearance.[420] Yet, he complained, so easy was it to link any cerebral degeneration with general paralysis that several asylums had taken to listing it as the sole form of organic brain disease found in the dead. What was needed was a more complete study of the disease. For this, as mentioned earlier, Crichton-Browne asked a number of colleagues, including Darwin, to collaborate in a broad investigation of general paralysis. While Darwin turned down the invitation, there was an otherwise positive response to the call for papers. James Wilkie Burman, Charles Aldridge, John Milner Fothergill, John Lowe, Thomas Clifford Allbutt, John Merson, William Bevan-Lewis, Charles F. Newcombe, Lennox Browne and Robert Lawson all contributed articles describing, respectively, the statistics, ophthalmoscopic observations, heart sounds, electro-excitability, neuroses, urinology, histology, seizures, laryngoscopic examinations, and drug treatments of general paralysis.[421] The culmination of these researches was Crichton-Browne's own mammoth paper, 'Notes on the Pathology of General Paralysis of the Insane', published in the final volume of the *Reports*, just preceding the case notes of Elizabeth Cobley.

General paralysis of the insane was a disease frequently met with in the public asylums, accounting for around ten per cent of admissions and twenty per cent of deaths, and found in men more than women by a ratio of up to 8:1.[422]. Termed 'general' as it

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[418] Bucknill and Tuke (1879) pp. 493-494. The fact that the hemispheres were known to be the most important part of the brain in relation to insanity makes it peculiar that they were the last thing to be systematically weighed at the asylum. There is no particular explanation of this fact, though it may have been that these were the most difficult part to detach and weigh separately.

[419] P. Nicol, 'The Mental Symptoms of Ordinary Disease', *WRLAMR*, 2 (1872) pp. 175-202 (185).

[420] J. Crichton-Browne, 'Notes on the Pathology of General Paralysis of the Insane', *WRLAMR*, 6 (1876) p. 176.

[421] See Table 2.1, in the previous chapter, for a full list of articles published in the *Reports*.

[422] See J. Wilkie Burman, 'A Contribution to the Statistics of General Paralysis; with remarks', *WRLAMR*, 1 (1871) pp. 129-151. For a background on the disease, see: Bucknill and Tuke (1879) esp. pp. 312-332, 600-609; Davis (2008); Shorter (1997) esp. pp. 53-64.

affected both the mind and body, symptoms included grand delusions, memory loss, speech defects, depression, irritable temper, sleeplessness, muscular tremor and seizures, which progressively worsened through different stages of the disease. It had been well-described in the first third of the century by the Parisian alienists Esquirol, Calmeil and Bayle, who had attributed the disease to an inflammation of the cerebral membranes. A product of the vices and follies of modern living, by the 1870s a syphilitic origin had been proposed. Crichton-Browne was aware of this, but it was 'on correct personal observation, and not on dubious gossip', that he sought to base his study.[423] For him, this meant pathological study, and the pages of the asylum's post-mortem reports attest to his interest in the disease, as between 1875 and 1876, whilst he was gathering evidence for his paper, cases of general paralysis assumed a dominant place in the volumes; specially labelled, lengthier, and more detailed than all other post-mortem cases.

The brain of a general paralytic was softer than others, the arachnoid membrane notably opaque, the skull thickened, and the grey matter atrophied and watery. Such an array of appearances might indicate any number of diseases, but the one appearance 'very constant and very characteristic' of the condition was adhesion of the pia mater (the inner-most layer of the cerebral membrane) to the convolutions of the brain, as a result of inflammation. This appearance had been known about since the 1820s, but Crichton-Browne was the first to 'attempt to explain *all* of the leading symptoms of general paralysis in this way.'[424] From September 1875 he adopted a new technique of soaking brains in nitric acid for a week, which hardened the brain and eroded all membranous matter, making the 'puncta' – marks where the pia mater had adhered – very visible in the convolutions. Here, in clear view, were the much sought after lesions of the cerebrum. However, establishing that lesions existed was only one step: the ultimate aim was to localise those lesions within the convolutions. Since the work of the phrenologists earlier in the century, alienists had held out hope that cerebral pathology would succeed in matching the symptoms of insanity with specific regions of the cerebrum. 'To what extent,' Crichton-Browne asked about the lesions, 'can we trace out their distribution over the surface of the hemispheres, define regions for which they have special affinities, or draw boundaries that they never transgress?' His answer was 'to a large extent', as he was able to confirm a correspondence 'between the localisation of the adhesions and the psychical and motor

[423] J. Crichton-Browne, 'Notes on the Pathology of General Paralysis of the Insane', *WRLAMR*, 6 (1876) p. 172. As part of this larger project, he had asked Clifford Allbutt to write on 'the obscurer neuroses of syphilis', indicating he knew of the link with syphilis.
[424] [Anon.] (1877b) p. 384.

symptoms in general paralysis.'[425] The way he showed this was by illustration, providing readers with drawings of six brains seen in the asylum.

Starting in January 1875 – late in the period of Crichton-Browne's reign at Wakefield – he oversaw the addition of brain images to the post-mortem reports. Amongst the 'special cases' of cerebral disease, the pathologist began to include brain images to illustrate precisely where lesions or other effects were found on autopsy. In such cases, a small pre-printed image of the brain from above, below, the side or in cross-section was drawn upon by the pathologist to indicate where the damage was seen. **[See Fig. 3.10]** He took the images from a standard textbook, *Quain's Elements of Anatomy*, and then traced, reproduced and marked upon them.[426] As a consequence of this practice, Crichton-Browne was in possession of twelve brain drawings from general paralytics in total, and a further forty verbal descriptions, all from the post-mortem reports, which he utilised in his paper on general paralysis. The images were important, providing pathological maps of the appearances observed in the brains of the insane.

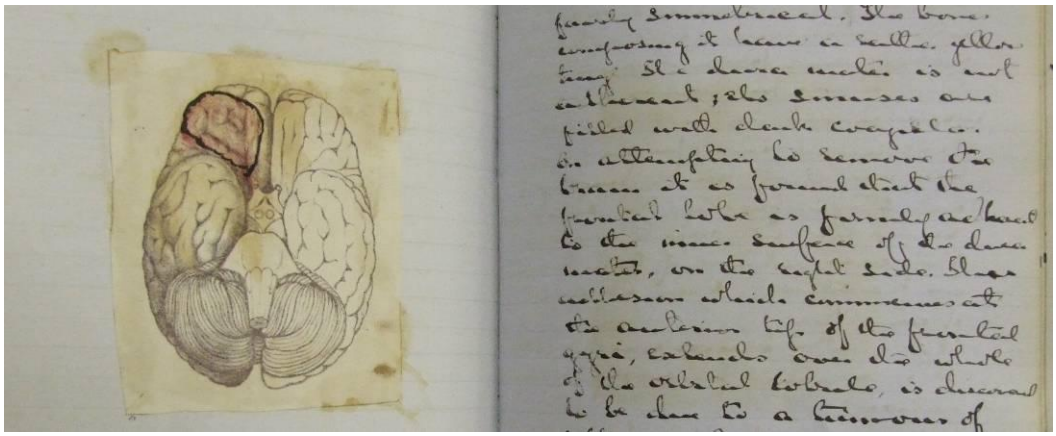

Fig. 3.10: Section from Post-Mortem Records. Handwriting on the right by J. Crichton-Browne. This post-mortem report, conducted on 2nd January 1875, was the first to include a pre-printed brain image to indicate a noteworthy condition. The patient had suffered from a large tumour in the orbital lobule of the right frontal lobe (this is a 'from below' image of the brain).
[WYAS, C85/1120]

Maps were a powerful tool in medicine. 'With the exception of geography, there is no science which has been so susceptible to the rhetorical appeal of cartography as the science of medicine', and diagrammatic representation served the late-nineteenth century

[425] J. Crichton-Browne, 'Notes on the Pathology of General Paralysis of the Insane', *WRLAMR*, 6 (1876) p. 218
[426] Sharpey, Thomson and Cleland (1867) pp. 530, 532, 537.

obsession with scientific objectivity.[427] As with recording ocular conditions with the ophthalmoscope, photographing the physiognomical characteristics of patients, or tabulating blood pressure, pulse or respiration, drawing brain lesions was an objective method for representing the appearance of insanity. Yet more than this, in the field of medical psychology, whose entire focus was on the relationship between mind and body, the drawing of brains was a solution to a problem; perhaps the only solution available, and one that remains with us today.[428] Indeed, it was a solution that was uniquely suited to the environment of an asylum, where a number of professional and theoretical concerns were in balance.

As has been made clear, nineteenth-century asylum doctors were convinced of the physical basis of mental disease: it was an orthodoxy few veered from to believe that ultimately, all insanity was caused by damage or disorganisation in the brain. Illustrating diseased brains fitted with this somatic stance, since it took as implicit that the brain – and the changes it underwent – were the concern of medical psychology, a profession which balanced both physical and psychological approaches in its diagnoses and treatments. A pathological drawing of the brain showed that the mental symptoms of insanity had a physical correlate, and it offered a way of more firmly linking the two. Yet the mind and the brain cannot be considered by the same methods, hence medical psychology relied on correlation between symptoms and causes, between life and death. A diagram of cerebral lesions mediates between mind and brain, creating a map that links mind and brain without commenting on the nature of that relationship. The question arises, therefore, given the utility of mapping cortical lesions, why did the asylum only start drawing brains in 1875? The answer comes from physiological experiment.

Crichton-Browne explained that the symptoms of general paralysis are both 'psychical and motor, and of these the psychical appear first in order of time.'[429] The experience of observing hundreds of patients supported this, with the case histories showing the symptoms of mental impairment, restlessness, and exaltation predictably followed by physical signs of tremor, inarticulacy and unsteadiness. The high mortality of sufferers meant there was also ample opportunity to study them post-mortem, and from this, he had 'long believed in the significance of adhesions of the pia mater in general paralysis' as being at the root of the disease. To understand the way these adhesions matched the

[427] Draaisma (2009) p. 230. See Daston & Galison (1992; 2007) for background on the nineteenth century preoccupation with objectivity through graphical representation.

[428] In the modern colour-coded 'neuro-image', used to explain everything from human emotions to political preference, many human activities are 'pathologised' by reference to active or damaged areas of the cortex. There is evidence that brain images are particularly persuasive in scientific arguments. See for example D.P. McCabe & A.D. Castel, 'Seeing is believing: the effect of brain images on judgements of scientific reasoning', *Cognition*, 107 (2008) pp. 343-352.

[429] J. Crichton-Browne, 'Notes on the Pathology of General Paralysis of the Insane', *WRLAMR*, 6 (1876) p. 223.

progress of the disease, therefore, needed 'first, an accurate record of the symptoms, and secondly, an accurate chart of the lesions.'[430] This was clinical-pathological correlation.

However, a third, theoretical ingredient, was also needed to make sense of the first two. This came from physiological investigation and, most importantly, the electrical stimulation studies conducted at Wakefield by David Ferrier, which will be considered in the next chapter. Ferrier showed, by electrical stimulation, how motor processes originated at specific points in the cerebral cortex, which he then mapped out. Crichton-Browne found lesions in general paralytics began at the frontal lobe and gradually spread backwards over the cerebrum, precisely where Ferrier placed the centres of motor control. This explained the stage-by-stage onset of symptoms, and the manifestation of both motor and psychical effects.

> In the general paralytic the higher centres are morbidly excited. He feels conscious of a sudden access of nervous power and is unassailed by fatigue, and the emotion of power which thus takes possession of him, and which is accompanied by outbursts of laughter, soon assumes the specific form of delusions connected with his own authority, wealth, rank, ascendency, or accomplishments.[431]

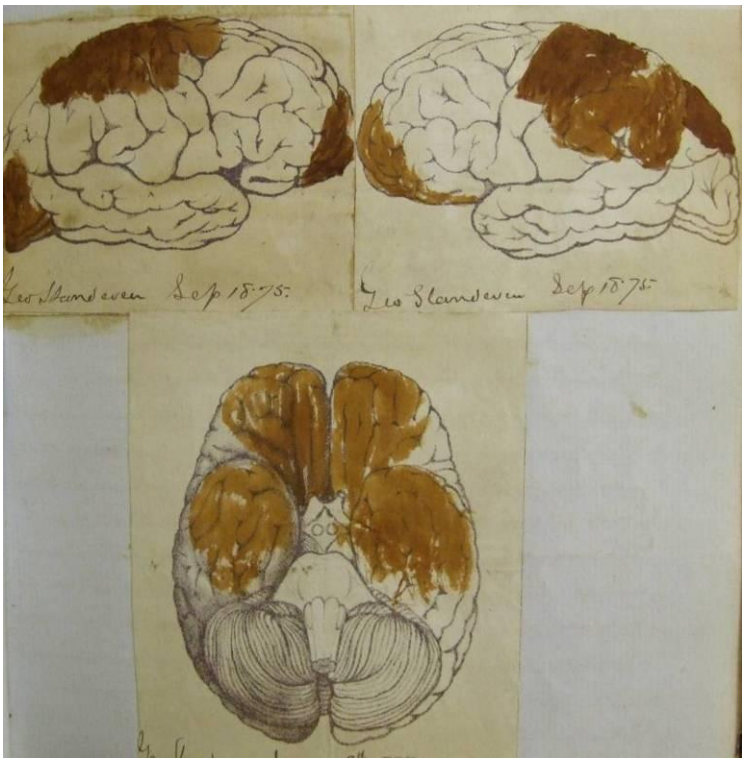

Figure 3.11: Brain images from post-mortem reports of a general paralytic. September 1875.
Considerable wasting acros the surface of the parietal and frontal regions. This shows the right side, left side, and from-below view of the brain.
[WYAS, C85/1121]

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[430] *Ibid.*, p. 202 .
[431] *Ibid.*, p. 227.

Ferrier's work made sense of the symptoms of the disease, but more than that, he showed that brains could, in principle, be mapped. Pathological maps of brain lesions became relevant only after physiological studies had proven that function were localised across the cortex. With the stimulus given by functional localisation, images were created to more accurately record what was seen; and they in turn were used, by Crichton-Browne, to support the claims he made for the specific localisation of lesions. **[See Figs. 3.11 and 3.12]** Though the experimental findings of Ferrier, as will be seen in the next chapter, were dependent on investigations with animals, they supported, and were supported by, studies of human brains. Indeed, probably the greatest significance of Ferrier's localization work came precisely from its ability to be transposed onto human brains: for obvious reasons, they were the most interesting to investigators.

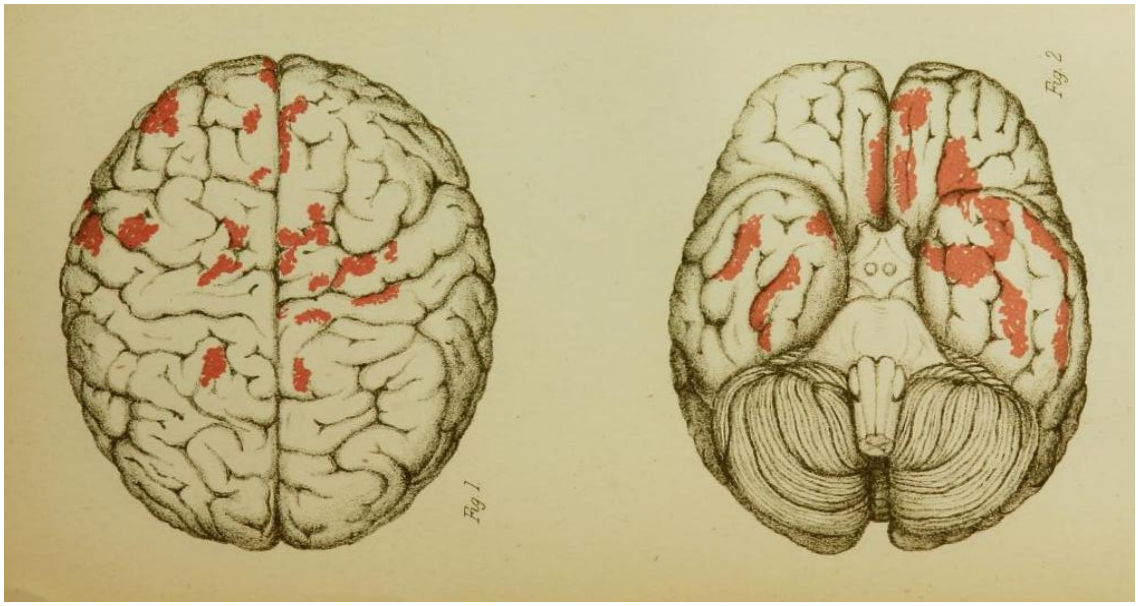

Figure 3.12: Published images of a general paralytic brain, from above and below, showing slight wasting of the frontal and parietal lobes.
[J. Crichton-Browne, 'Notes on the Pathology of General Paralysis of the Insane', *WRLAMR*, 6 (1876)]

V. Conclusion: The Visible Patient

Ultimately, post-mortem reports reduced the patient to a brain, a legacy that remains with us today in modern neuroscience. Mapping out brain lesions represented the culmination of the asylum's endeavours in medical psychology, and the coming together of specific theoretical and practical concerns. Patients were observed and recorded, as the medical officers sought to establish diagnoses of their mental and physical symptoms. In doing so, they utilised a

nosology based on psychological categories whilst maintaining a belief in the somatic aetiology of insanity, and looked to a mixture of moral and physical causes, including hereditary predisposition, as responsible for the illness. A variety of instruments and techniques were adopted to assess the development of insanity, and a plethora of drugs were prescribed to alleviate or cure it. And finally, convinced that insanity was a degenerative condition which physically altered the constitution of the brain, post-mortem examinations were conducted in search of the lesions that underlay the symptoms. From the background story on admission to the soaking of brains in nitric acid, an image of each lunatic patient was thus constructed according to pre-existing ideas on the nature of insanity and the research prerogatives of medical psychology.

The medical casebooks and post-mortem reports of the West Riding Lunatic Asylum provide an insight into the research programme conducted under James Crichton-Browne. But they are also a window onto the Victorian underclass, a documentation of men and women from the poorhouse who suffered poverty, insanity, and the ignominy of certification in the nineteenth century. In the eyes of the medical officers, these patients were a constant opportunity for research, and a representation of the social and hereditary ills present among the populace. They were both a problem and an opportunity. It is important to note, therefore, that whilst patients in Wakefield were carefully observed and examined, providing material evidence in an area of study that stimulated great academic and public interest, they were at the same time hidden away, deemed best catered for behind the closed doors of an institution. It is an irony worth remembering that the brains of the supposed idiots, insane and degenerates – the out-of-mind, out-of-sight, so to speak – were actually well viewed, and contributed more to scientific understanding than is perhaps realised. It was their brains, not just Crichton-Browne's and his fellow researchers', on which scientific research rested.

4. Local Functions

Cerebral Localisation in the West Riding Lunatic Asylum

I. Introduction: A Divisive Theory

Throughout this thesis, Wakefield has been presented as a research school: an institution geared towards the practice and publication of scientific work, celebrated in its own time and still remembered today for its contributions to neuroscientific understanding. Underlying the success of any research school are a variety socio-economic, institutional and intellectual factors. Chapter One considered the director at Wakefield, Crichton-Browne, and his particular motivations; Chapter Two then examined the way money, people and buildings were rearranged to make space for scientific research; and in Chapter Three, the apparently mundane activities of observing patients, administering drugs, and conducting post-mortem examinations were considered as the basis of research at the asylum. Though medical psychologists avowedly based their ideas on 'physiological principles', the medical approach of clinical-pathological correlation was the starting point for studying insanity and the brain, and the new discoveries of cerebral localisation built upon, and were incorporated into, the work already being performed in the asylum. With these practices, and their thorough recording, it was argued that the daily routines of asylum life were made into the foundation for scientific investigation.

Having looked at these foundational practices, this chapter now turns to the most famous scientific work of the asylum, the electrical localisation experiments conducted by David Ferrier. Though the concept of localisation was being widely discussed and studied before Crichton-Browne even arrived at Wakefield, the theory was, in the worlds of the asylum and of scientific research, still 'counter to orthodox physiological and psychological accounts of the functions of the brain and nervous system'.[432] Crichton-Browne made the brain the centre of the asylum's work while he was there, and built a programme of research that attempted to link the mental and physical conditions of insanity with the specific appearances of the brain. He wrote that 'it was the structure of the brain and nervous system, their histology, their responses to electrical stimulation, their degenerative changes, their abridgment of function by destruction of parts, that mainly occupied our attention.'[433] The 'ancestor problem' of phrenology was being explored through the new methods of scientific investigation.

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[432] Clark (1982) p. 62.
[433] [Anon.] (1931) p. 659.

Ferrier did not conduct his initial experiments in provincial isolation. At Wakefield, he arrived at an institution already committed to investigating brains and the specific changes they underwent in lunatic patients, and this chapter shows he utilised this established body of knowledge in defending his findings and extending them from animal to human subjects. In turn, his newly-produced maps of motor and sensory function influenced the way the condition of insanity was observed and understood by other medical men at the asylum, who were engaged in a project to enhance and expand cerebral localisation as part of medical psychology. The *BMJ*, linking Ferrier and others associated with the asylum back to Bell and Marshall Hall as 'benefactors of mankind', noted that Wakefield,

> under the initiative of its present most able director, was affording facilities for the furtherance of the studies of these men, and for the application of their work to the treatment of mental disease; and in doing so, with the hearty concurrence of the visiting magistrates... was setting a high example, which could not but be fruitful in great results, and might well be widely imitated.[434]

The asylum was seen as the home to the leading edge of neurological research.

Yet when Crichton-Browne's previously mentioned article on the pathology of general paralysis was reviewed in the *JMS*, the commentator thought it displayed 'rather too great a tendency to accept the conclusions of recent experimenters as to the real bearing of their observations on the effects of excitation and destruction of the cerebral cortices of the lower animals'.[435] Chief among the 'recent experimenters' they were referring to was Ferrier, and Crichton-Browne's error, as they saw it, was in attempting to link the varied appearances of pathological specimens with specific mental and physical symptoms by reference to Ferrier's physiological studies of the brain's motor and sensory centres. The reviewer's own post-mortem observations contradicted Crichton-Browne, and other alienists too were sceptical of the value of the new experimental researches, which they felt had little import to the more complex and nuanced business of understanding insanity. Even Maudsley, who stressed the view that all mental disorders were nervous disorders, was opposed to the idea that mental functions could be understood by such physiological means. 'Neither in health nor in disease is the mind imprisoned in one corner of the body', he argued. Mental function, or dysfunction, needed to be understood in patients as a whole and their relationship with the external world, not just in their cortical matter.[436]

Yet Crichton-Browne was certainly not alone in attaching significance to Ferrier's findings. Bucknill and Tuke noted that Ferrier 'does not regard one part of the brain as the organ of the mind, and another part as the organ of motion, &c., but the same parts as

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[434] [Anon.] (1875c) p. 680.
[435] [Anon.] (1877b) p. 385.
[436] Maudsley (1874) p. 41. Maudsley furthered these ideas in *Body and Mind* (1883). For more on Maudsley's views, and other criticisms of localisation from alienists, see Clark (1982) pp. 178-196.

having both a subjective and objective function'. '[T]he endeavour to reduce mental phenomena, in the last analysis, to their motor and sensory physiological equivalents', they argued, would lead the way to 'a localisation of mental function, and therefore the correlation of morbid cerebral and morbid mental conditions, out of which a classification [of insanity] may be possible.'[437] Cerebral localisation mattered in the asylum, where it raised the potential for a new, scientifically-based understanding of insanity, with conditions divided into motor or sensory psychoses associated with certain regions of the brain. This was, as the previous chapter outlined, how Crichton-Browne attempted to explain the symptoms of general paralytics.

Cerebral localisation was, and still is, an important theory. Writing in 1926, Sir Henry Head declared that the 'evolution of our knowledge of cerebral localisation is one of the most astonishing stories in the history of medicine.'[438] It is perhaps because it is so astonishing, therefore, that it is also one of the most studied and written about histories in medicine, almost 'at the expense of broader controversies about the brain'.[439] Among those texts that have examined the topic, Young's classic text *Mind, Brain and Adaptation* stands out, and is still frequently used as the authoritative basis from which other historians build their own studies. Tracing the concept of localisation from the phrenology of Franz Joseph Gall in the 1810s, through the work of several mid-century psychologists across Europe, to the stimulation experiments of Ferrier in the 1870s, Young presented Ferrier as (literally) the final chapter of the story, a logical conclusion to sixty years' worth of work on the brain. Yet while this is still probably the best analysis of Ferrier's researches to date, it pays scant attention to the work going on around him at the time, particularly the contributions of the asylum, which formed a unique setting for such scientific studies.

Wakefield greatly influenced the outcome and reception of Ferrier's work, and in turn cerebral localisation impacted on the asylum's practices. The asylum made scientific study of the brain more systematic, more extensive, and more significant than it had been before. It achieved such results because – in addition to the efforts and investigative skills of its members – of its particular research programme around the brain and, specifically, its focus on the localisation of cerebral function. This chapter explores the asylum's programme of research by considering the physiological studies conducted in the West Riding, the effort that went into publicising and supporting them, and the ways in which the new experimental findings of cerebral localisation fed back into the asylum's work. It

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[437] Bucknill & Tuke (1879) p. 34.
[438] Head (1926) p. 1. Clarke and Jacyna (1987) p.212.
[439] Quote from E.H. Price (2006) p.45; For some select examples of cerebral localisation in historical texts see: Clark (1981); Clarke and Dewhurst (1972); Clarke & Jacyna (1987); Finger (1994; 2000); Harrington (1987); Millett (1998); Young (1970); and the pages of the *Journal of the History of the Neurosciences* (1992-present).

provides a new and fuller account of Ferrier's original stimulation experiments, looking at the early reception and spread of cerebral localisation outside of the asylum and the ways in which the theory was absorbed back into asylum research, to such an extent that the asylum became associated with the campaigns directed against Ferrier by the anti-vivisection movement.

II. Laboratory Life: David Ferrier's 'Experimental Researches'

After Gall and his phrenological followers had celebrated the idea in the 1820s, localisation suffered a lull in popularity in the middle decades of the century; largely discredited as a result of Jean Pierre Flourens' researches at the Académie des Sciences in Paris. Interest in the localisation of cortical functions was, however, revived in the 1860s, beginning with the aphasia studies of another Parisian, Pierre Paul Broca. As Chapter One of this thesis discussed, the methods and assumptions of the phrenologists informed the renewed debates on aphasia in the 1860s and 1870s. This was made clear by W.A.F. Browne when he contributed a paper to his son's *Reports* in 1872. His essay 'Impairment of language, the result of cerebral disease', showed the reflections of one of phrenology's early proponents living to see this revival of cerebral localisation, still faithfully adherent to the old discipline and convinced of its real explanatory power. Thus whilst proposing to 'regard aphasia from a somewhat new point of view', he actually situated contemporary work in the light of Gall's phrenology, which 'gave an impulse to the cerebral localization of our faculties, the effect of which is especially visible in our own days'.[440] Browne's report, which relied heavily on Frederic Bateman's large book *On Aphasia* (1870), rejected any modern approaches to cerebral localisation in favour of phrenological organology, even if physiological and pathological evidence as to the localization of an organ for such a faculty [language] was as yet incomplete or contradictory.[441] His paper was a useful reminder of the debt that contemporary psychology owed to phrenology, and that Crichton-Browne's work at the asylum owed to familial influence.

At the time of Browne's paper, discussion of aphasia was at its most advanced in the debate between Broca and the British neurologist John Hughlings Jackson, who himself contributed five papers to the *Reports*. Whilst Broca maintained that he had localised the function of articulate language at a specific site within the human brain, Jackson argued that all Broca and other corroborating experimenters had proved was that damage to 'Broca's area' of the cortex affected normal speech. It was just as likely to him that this area was

[440] W.A.F. Browne, 'Impairment of language, the result of cerebral disease', *WRLAMR*, 2 (1872) pp.278-279. This was the article Dr Horniblow referred his guest to in 'My Friend the Mad-doctor'.
[441] Browne also refers to works by Maudsley and a recent paper by W.R. Sanders.

merely an important point of connection between various parts of the cerebral hemispheres, all of which might contribute to human language.[442] Jackson's ideas came from his own studies of epilepsy, which he explained as 'occasional, sudden, excessive, rapid and local discharges of grey matter', and which were to be viewed as 'experiments on the brain made by disease'.[443] Initially regarded as ingenious but rather fanciful speculations devoid of experimental corroboration, Jackson's hypothesis of unilateral epilepsy provided evidence against the faculty psychology of Broca and the phrenologists, whilst also contradicting the mainstream by arguing that the operations of the brain did not rely on every part of the cortex at every time. He thus represented an alternative approach to localisation. Having been based on anatomy and cranioscopy in the practices of phrenologists, cerebral localisation was greatly advanced by the introduction of clinical and pathological methods of Broca and Jackson, but it was only with the introduction of new experimental laboratory techniques in the 1870s that the theory gained widespread acceptance and orthodoxy as a canon of biological science.

Though the mid-nineteenth century was 'period of very active exploration of the nervous system with electrical stimulation', no new experiments had changed the physiological understanding of the brain cortex.[444] In 1870, however, the anatomist Gustav Fritsch and psychiatrist Eduard Hitzig, both of Germany, brought to an end the mid-century hiatus of positive experimental advances in the brain, comprehensively refuting theories of the brain that had stood since Flourens in a few decisive tests.[445] They confirmed that the cerebral cortex could be electrically stimulated, they showed that it is directly involved in the process of bodily movements, and they proved the doctrine of cerebral localisation, demonstrating how certain distinct sites within the cortex gave specific muscular responses when stimulated, and that these specific movements could be impaired if the associated site in the cortex was removed. They achieved what all previous experimenters had signally failed to do, producing a paper whose results constituted 'a truly epoch-making classical experiment in the sense that all subsequent work in cerebral physiology was done with reference to this single publication.'[446] These were exciting results, and Fritsch and Hitzig had concluded their paper in a way that 'encouraged other researchers to try to confirm their findings and to search for other cortical areas'.[447]

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[442] Harrington (1987) pp. 206-213; Lorch (2008).
[443] J.H. Jackson (1958) p. 77; Critchley and Critchley (1998) p. 63.
[444] C.G. Gross (2007) p. 328.
[445] G. Fritsch & E. Hitzig, 'Über die elektrische Erregbarkeit des Grosshirns', *Archiv für Anatomie und Physiologie* (1870) pp. 300–332. See also Young (1970) p. 229.
[446] Young (1970) p. 224.
[447] Finger (1994) p. 40.

At Wakefield, Crichton-Browne was meanwhile engaged in his own quest to turn his provincial asylum into a school of scientific research on insanity and the brain. At that time, he later noted,

> Gratiolet had just identified the cerebral convolutions, Broca had localized aphasia; Brown-Sequard had produced artificial epilepsy; Gowers had demonstrated the syphilitic origin of locomotor ataxia; Duchenne had traced muscular atrophy to the motor tract; Darwin was dominant; George Lewes, Herbert Spencer and, above all, Maudsley had just entered the field; [and] Lockart Clarke had begun his microscopical examinations[.][448]

These were exciting times, and Fritsch and Hitzig's work represented the next important step, though it took a little while for their findings to spread around Europe, reaching Crichton-Browne's table only at a later date, presumably as a consequence of its limited distribution, foreign language, and origin in a competitor nation.

Late in 1872, when Crichton-Browne's good friend and fellow Scotsman Ferrier visited Wakefield for the annual conversazione, the two talked about many things, and Fritsch and Hitzig's results were chief among them. The experiments had caused something of a stir, but the overwhelming reaction was scepticism, with critics unsure of the validity of their results.[449] Crichton-Browne, seeing the potential that further study in this area had for his own school of research, and motivated by the concern that, in those 'regions of psychological inquiry, which are in such close contact with our own field [medical psychology], the work is again being carried on by those who are unconnected with us', thus invited Ferrier back in March to conduct more electrical experiments in rooms of the asylum.[450] Ferrier accepted, and had placed at his disposal 'the resources of the Pathological Laboratory of the West Riding Lunatic Asylum, with a liberal supply of pigeons, fowls, guinea-pigs, rabbits, cats and dogs for the purposes of... research.'[451]

Ferrier realised not only the implications of Fritsch and Hitzig's work, but also its shortcomings, noting that their 'researches in this direction were not carried very far, nor do they... clearly define the nature and signification of the results at which they arrived.'[452] He had earlier intended to study cortical functions with the technique of Nothnagel – damaging portions of the brain with chromic acid – but found that methods of ablation, 'however well they may be carried out and accurately circumscribed, involve the observation of negative phenomena, which, in a subject like cerebral physiology, is necessarily surrounded by great

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[448] [Anon.] (1931) p. 659.
[449] Finger (2000) p. 162; Also see Young (1970) pp. 234–236.
[450] Crichton-Browne (1878) p. 354.
[451] D. Ferrier, 'Experimental Researches in Cerebral Physiology and Pathology', *WRLAMR*, 3 (1873) pp. 30-96(30).
[452] *Ibid.*, pp. 31–32.

and often insurmountable difficulties.'[453] So instead, he took on Fritsch and Hitzig's method, and importantly adapted it by abandoning the use of 'galvanic' stimulation (direct current) in favour of an induction or 'Faradic' current. With electrical induction, Ferrier produced sustained and deliberate movements in the animals under investigation, leading to the results presented in his seminal paper in the third volume of the *Reports*, 'Experimental Researches in Cerebral Physiology and Pathology'.

Fig. 4.1: Photograph of David Ferrier as a young man. Unknown date.
[Taken from Millett (1998) p. 285]

Rather than taking something away to understand what it did, Ferrier shaped an artificial normality, recreating the natural workings of the brain in a laboratory setting – this was not the vexing of nature, but stimulating it into its normal actions. His developed methods were precise, and meant that the experimenter was, in a very real sense, controlling the cerebral workings of the narcotised animal on his laboratory bench with just a simple inductorium and copper wires. As Ferrier wrote a short while after his investigations at the asylum, with electrical stimulation

[453] *Ibid.*, p .31.

> [we] can begin at the outworks, at the organs of sense and motion, with which the nervous system communicates; we can study their operations during life, we can experimentally vary their circumstances; we can find how they act upon the brain and how the brain reacts upon them.[454]

Such a position of power over another being, to dictate not merely what it *can* do but what it *will* do, was seemingly without precedent, and was to stir both excitement and apprehension in popular culture as well as the scientific community.

Ferrier himself was spurred on by the success of his work at Wakefield in 1873, as he returned to his London roles as Professor of Forensic Medicine at King's College, Professor of Practical Physiology at University College, and consultant to the National Hospital at Queen Square. He carried out many more examinations, especially on the brains of macaques – at least thirteen between June and September of that year, paid for by the Royal Society and conducted at the newly built Brown Animal Sanatory Institution – as he continued gathering evidence for cerebral localisation.[455] By February 1874 he had compiled a 160-page manuscript from his experiments, which was read before the Royal Society a month later.[456]

He put great value on the meaning of his results because of their regularity upon repetition: in his 1873 paper for the *Reports* he constantly reiterated to his audience that he had replicated all tests ('these experiments on rabbits I have repeated many times, and always with the same results'), and his notebooks attest to his systematic and thorough experimenting.[457] He was also mindful of making sure that his observations were verified by others, hence all the major original findings in the West Riding Lunatic Asylum laboratory had been confirmed 'in the presence of my undermentioned friends', and when he demonstrated some experiments to members of the British Medical Association, he noted the fifteen medical specialists that were present, their standing in the field an indication of the interest he attracted soon after the Spring of 1873.[458] The macabre nature of what such viewers would have seen is also revealed in Ferrier's notebooks, where the great number of animals that 'expired' under his watch are detailed, whilst the paper he wrote his pencilled notes on is splattered with blood throughout, particularly the glued-in annotated cerebral diagrams. Blood spilled in other places further indicated the spread of his experiments: on Leeds University Library's copy of the 1873 *Reports* there are traces of blood on the pages

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[454] Ferrier quoted in Sherrington (1928) p. xiii.
[455] Ferrier's notebooks, which document this work, are held in the archives of the Royal College of Physicians, London.
[456] See Ferrier (1873-1874) for his paper read before the Royal Society. On the development of Ferrier's experiments in London, see Millett (1998) esp. pp. 288-291.
[457] D. Ferrier, 'Experimental researches in cerebral physiology and pathology', *WRLAMR*, 3 (1873) p. 64.
[458] *Ibid.*, p. 40; 'Ferrier Notebooks', 8th August 1873 (Library of the Royal College of Physicians, London, MS. 246/3).

of Ferrier's seminal paper, caused, perhaps, by another researcher taking Ferrier's work with him (or her) into the lab when recreating his experiments. **[See Figs. 4.2 and 4.3]**

Ferrier's research was widely discussed and repeated because it suggested more definitive answers to questions that had long troubled those interested in the human brain. C.S. Sherrington commented that after 1873, '[t]he next decade saw a flowing tide of research setting toward localisation... A localisation vogue reigned for nearly a quarter of a century, and became in due course tedious and relatively infertile. But the importance of the work which ushered it in cannot be forgotten.'[459] Whilst his comment that localisation experiments became 'tedious' is a subjective one, indicating a later outlook, it also reflects just how copied Ferrier's methods were. Indeed, what seems to be described here is something akin to a Kuhnian 'paradigm', with all researchers following the same problems and answers to cerebral localisation as Ferrier had done.

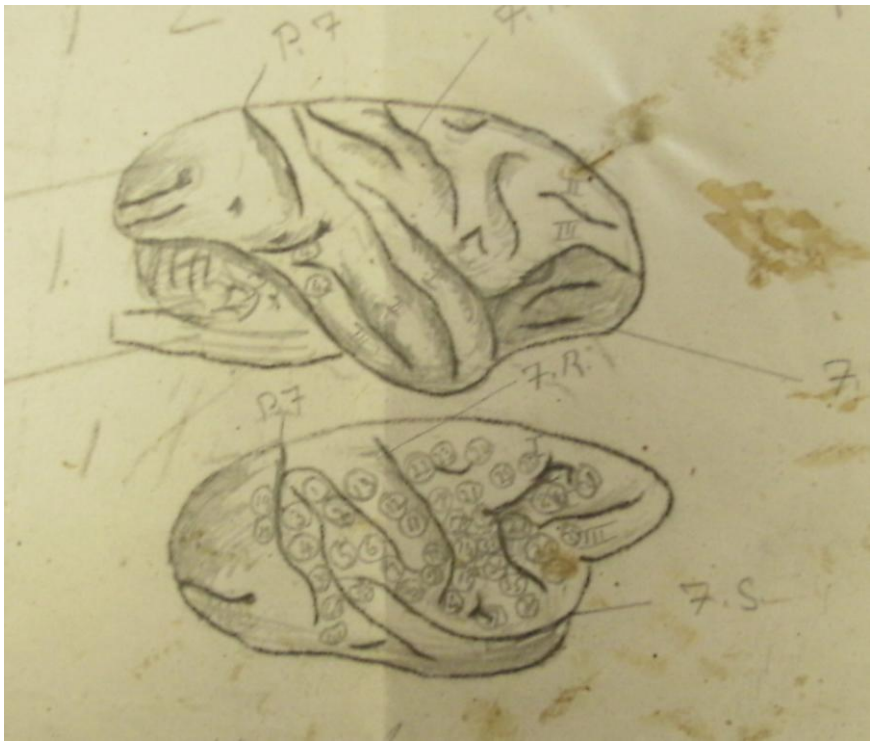
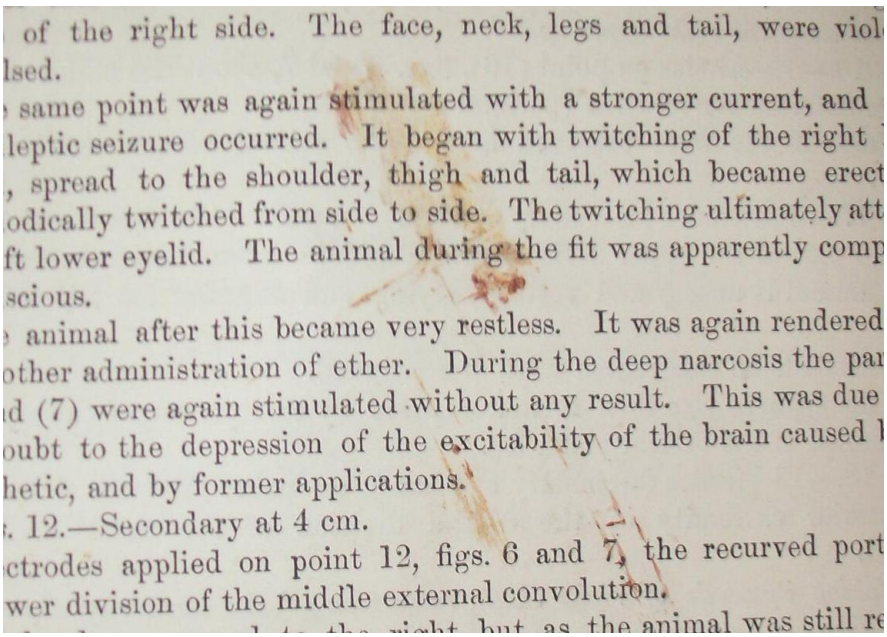


Fig. 4.2: Excerpt from Ferrier's notebooks, showing a diagram of a macaque brain, 14th June 1873
[Archives of the Royal College of Physicians, London, MS. 246/2]

[459] Sherrington (1928) p. xiv.



of the right side. The face, neck, legs and tail, were viol
lsed.
same point was again stimulated with a stronger current, and
leptic seizure occurred. It began with twitching of the right
, spread to the shoulder, thigh and tail, which became erect
odically twitched from side to side. The twitching ultimately att
ft lower eyelid. The animal during the fit was apparently comp
scious.
animal after this became very restless. It was again rendered
other administration of ether. During the deep narcosis the pa
d (7) were again stimulated without any result. This was due
oubt to the depression of the excitability of the brain caused
hetic, and by former applications.
. 12.—Secondary at 4 cm.
ctrodes applied on point 12, figs. 6 and 7, the recurved port
wer division of the middle external convolution.

Fig. 4.3: Page from Ferrier's 1873 article in the *Medical Reports*
[Held by Special Collections, University of Leeds Library.]

Yet it should have been in the names of Fritsch and Hitzig that such researches were carried out: it was they who broke new ground with their advanced methods. This should be no Ferrerian paradigm, but Ferrier was the man who was seen as the leader of the new band of 'localisers', who became the main target of their critics, and whose monograph, *The Functions of the Brain* (1876), became the classical text on cerebral localisation. In a remarkably short space of time, what was once an idea dismissed out of hand, and which had remained the unorthodox speculation of certain groups of medical men, had rapidly become a secure doctrine of biology. Though debates continued as to the wider implications of cerebral localisation, the basic tenet – that the highest centre of the brain had direct and localised control over the body, and that motor and sensory functions were specifically situated within the brain – became an almost incontrovertible part of the biological canon. It was 'black boxed', and ceased to be a point of contention: the very thing that had been debated for decades now became the one indubitable truth from which new controversies departed.[460] This process owed something to the inherent quality and practicality of the work involved. However, other factors were in play that drove and shaped the reaction to, and acceptance of, the idea that the functions of the brain cortex are localised: public displays, rivalries, philosophical and religious beliefs, and the West Riding Lunatic Asylum which supported, spread and furthered cerebral localisation.

[460] Sociological historians of science talk of scientific theories and technologies becoming 'black boxed' or made 'matters of fact' as they become embedded and agreed upon by practitioners, such that the working that went into these theories or technologies is forgotten.

III. An Idea Exported: Localisation beyond Wakefield

Crichton-Browne certainly had immediately high hopes for the work, writing excitedly to Darwin in April 1873 that Ferrier 'has discovered that every convolution of the brain is in direct relation with certain groups of muscles, and controls their actions', adding that the results will 'constitute the most important advances yet made in cerebral physiology' – such results, he believed, could not fail to interest Darwin. He was right, as Darwin replied immediately to request a copy of the published paper, noting

> Prof. Ferrier's researches sound most wonderful and interesting... I shall be very curious to learn whether he believes that he excites an idea and that this leads to the movements, or that he acts directly on the motor nerves.

Later in the year, having read Ferrier's paper, Darwin wrote again to thank and congratulate him on the latest issue of the *Reports*. 'I have been profoundly interested', he declared. 'It seems clear that the physiology of the brain will soon be largely understood. What a step it is. You have reason to be very proud of the volume.'[461]

Ferrier had published an abbreviated list of his twelve main conclusions in the *BMJ* on 26th April, several weeks before his main article in the *Reports*, perhaps to stir interest in the extended paper soon to be published.[462] It certainly made waves in the scientific world. In a review of 1873, the President of the Royal Society George Airy said that '[i]n Anatomy, the most striking subject appears to be Professor Ferrier's experimental discussion of the actions of different parts of the brain'[463], and in the following year Professor Rutherford of the British Association wrote:

> These researches mark the commencement of a new era in our knowledge of brain function. Of all the studies in comparative physiology there will be none more interesting, and few so important... A new, but this time a true, system of phrenology will probably be founded upon them... these investigations constitute the most important work which has been accomplished in physiology for a very considerable time past.[464]

The British Association was largely responsible for the early exposure and acclaim that Ferrier's researches at West Riding received. When the annual meeting, in September 1873, visited nearby Bradford, Ferrier's work reached a large and interested audience. An extended article on the meeting in the *Times* claimed there was 'nothing which has excited

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[461] J. Crichton-Browne to C. Darwin, 16 Apr. 1873; C. Darwin to J. Crichton-Browne, 17 Apr. 1873; C. Darwin to J. Crichton-Browne, 7 Sep. 1873 (DCP, 8861; 8865; 9045).
[462] See Ferrier (1873).
[463] Airy (1873-74) p. 9.
[464] W. Rutherford, quoted in (1873f) pp. 981-984.

so much interest as the recital by Professor Ferrier of his experiments upon animals, which indicate the localization of functions of the brain.'[465]

His work had been stimulating in every sense, and consequently two days later the *Times* ran another article devoted entirely to his paper before the British Association, explaining in rather more plain English to its readers the full efforts and implications of cerebral localisation. They explained the 'mock-scientific' elaborations of the earlier phrenologists; how recent work in this area had stemmed from clinical observations; and how many medical men, such as W.B. Carpenter, would now have to abandon their view that the hemispheres as a whole were the organs of thought. Ferrier's paper, they claimed, 'points towards the realization of a hope which men of science have long cherished, and which many with no pretence to science have shared.'[466] Cerebral localisation had re-entered the public consciousness. The desire to learn more was evident, for example, when Huxley's 'Sunday Lecture Society', which met weekly at St. George's Hall in London, requested Carpenter to present two lectures to them on the functions of the brain and the recent light shed upon them by experimentation.[467] Carpenter, who had only recently retired as President of the British Association, had plenty of time on his hands, and as one of the most authoritative figures in cerebral physiology, was in demand.

The irony would not have been lost on Crichton-Browne when on 25th November 1873, he invited Carpenter – the man who had claimed to ring the death-knell for phrenology in 1846 – to speak at the asylum's annual conversazione on the subject of Ferrier's findings. Conversaziones, traditionally social gatherings of polite erudition, education and entertainment which were very popular in the Victorian period – often held with the aim of attracting financial support for the host – were utilised in an original and effective way by Crichton-Browne.[468] The audience were presented with the results of the experimental, scientific and above all, progressive medicine that was practiced at the asylum, with musical interludes and viewings of various related specimens, instruments and preparations fitting around the main lecture of the evening. In the four held between 1872 and 1875, lectures were given on 'the convolutions of the cerebrum', 'responsibility for homicide', 'construction of the nervous system' and, on the Tuesday evening when Carpenter spoke, 'Recent Advances in the Physiology of the Brain'.

Crichton-Browne used the conversazione to advertise his asylum, and by displaying the evidence of its achievements and outlook, he sought to garner both the private support

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[465] *Times* (Sep. 22, 1873) p. 7.
[466] *Times* (Sep. 24, 1873) p. 9.
[467] Meetings of the Sunday Lecture Society on 9th and 16th November, 1873.
[468] For more on conversaziones see Alberti (2003). In 1872 the guest speaker had been Professor Turner of Edinburgh University, who spent three days visiting the Asylum before delivering his lecture on the convolutions of the cerebral hemispheres. See Crichton-Browne (1926) p. 111.

of committee members, and the backing of a viewing public who were increasingly sceptical of asylums at this time. Indeed, Carpenter remarked that Crichton-Browne had asked him to comment upon the 'scientific import' of the research, indicating how Crichton-Browne was keen for the crowd to understand what had been achieved, and furthermore how significant the discoveries from his laboratory could yet prove to be. **[See Fig. 4.4]** The gathering of 1873 were treated to a repeat of several of Ferrier's experiments by the man himself who, according to one reporter, told his audience to 'hold onto the truth of experiment in the face of ignorance and superstition', before asking everyone 'to give Dr. Carpenter a most respectful hearing':[469] a strange request, unless perhaps Ferrier was aware that Carpenter's views would be in contradiction to his own, even if Carpenter seemed oblivious to this fact himself. Carpenter's speech, usefully recorded in the following year's edition of the *Reports*, was a fascinating attempt from a prominent proponent of mid-century mental physiology to reconcile new findings with his own established principles.

Carpenter had addressed the editor of the *Times* to distance himself from the view – which he claimed they had wrongly attributed to him – that the cerebral hemispheres 'do not act in isolated portions, but as a whole'. On the defensive, he had written 'the results of Dr. Ferrier's admirable experiments... will be found, if I mistake not, conformable in every particular to the general doctrines I have long maintained'.[470] In elaborating, however, he showed how he diverged from Ferrier's understanding in holding onto older ideas. He wrote:

> I am disposed to believe that it is the augmented activity of the re-action between the Blood and the Nerve-substance, producing an excessive tension like that of an overcharged Leyden jar, rather than the direct stimulation of the nerve-substance itself, which causes the discharge of Nerve-force that produces movement.[471]

Carpenter did not think that the cerebral cortex directly stimulated the motor nerves, but that, in his words, it 'plays downwards on the motor centres contained within the Axial Cord; from which, and not from the Cerebral convolutions, the motor nerves take their real departure'.[472] Stimulation merely excited a state of hyperaemia within a specific region of the cortex, which then acted upon the lower centres of the brain already known to be linked to muscular movements: his evidence was that when stimulated, some of Ferrier's dogs continued their purposive movements after the electrodes had been removed, but hyperaemia remained. As he put it, 'this could scarcely be the case if the stimulus acted

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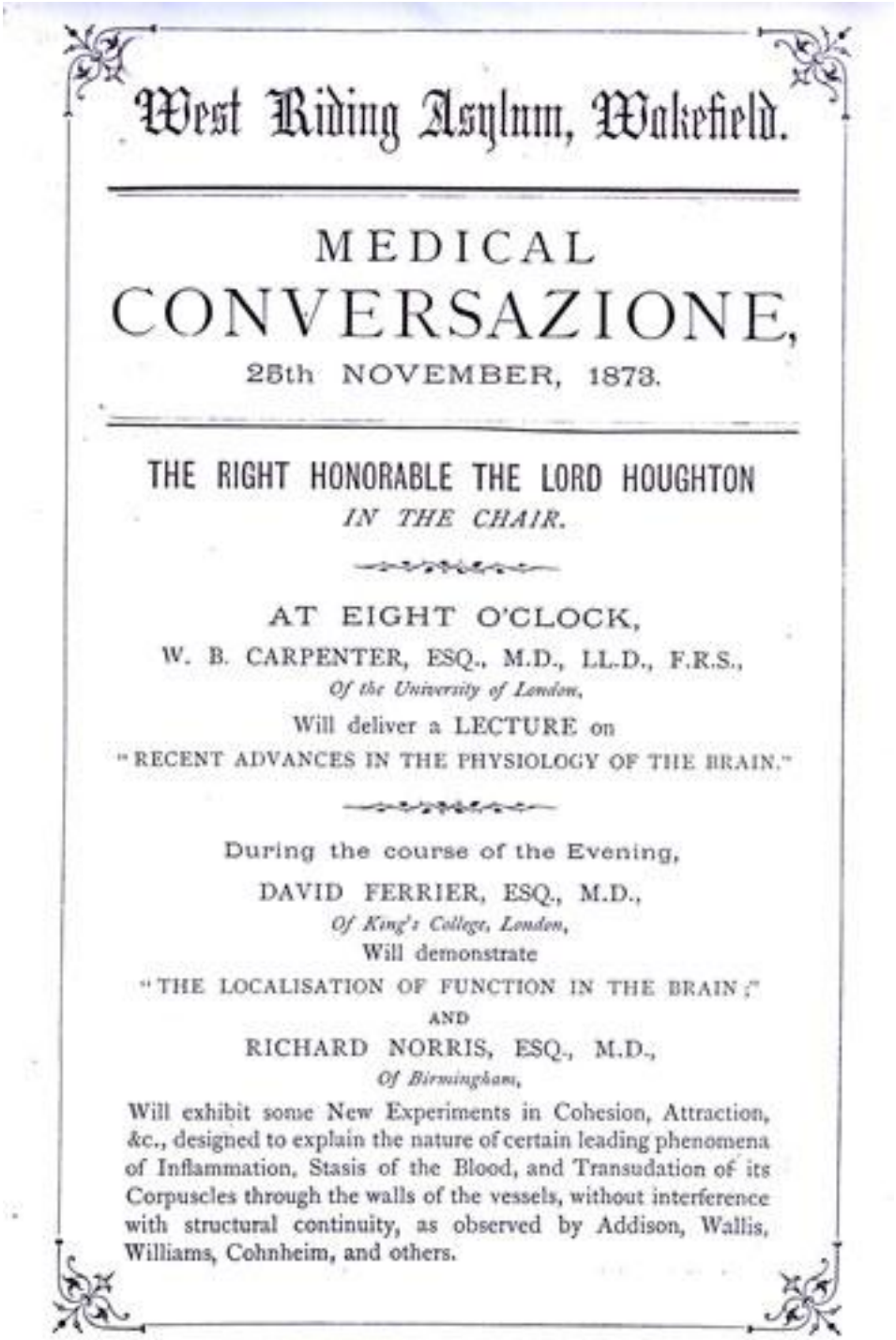
[469] *Times* (Nov. 26, 1873) p. 9.
[470] 'Letters to the Editor', *Times* (Sep. 27, 1873) p. 5.
[471] W.B. Carpenter, 'On the physiological import of Dr Ferrier's Experimental Investigations into the Functions of the Brain', *WRLAMR*, 4 (1874) pp. 1-23 (10-11).
[472] *Ibid.* p. 20.



West Riding Asylum, Wakefield.

MEDICAL
CONVERSAZIONE,
25th NOVEMBER, 1873.

THE RIGHT HONORABLE THE LORD HOUGHTON
IN THE CHAIR.

AT EIGHT O'CLOCK,
W. B. CARPENTER, ESQ., M.D., LL.D., F.R.S.,
Of the University of London,
Will deliver a LECTURE on
"RECENT ADVANCES IN THE PHYSIOLOGY OF THE BRAIN."

During the course of the Evening,
DAVID FERRIER, ESQ., M.D.,
Of King's College, London,
Will demonstrate
"THE LOCALISATION OF FUNCTION IN THE BRAIN;"
AND
RICHARD NORRIS, ESQ., M.D.,
Of Birmingham,
Will exhibit some New Experiments in Cohesion, Attraction, &c., designed to explain the nature of certain leading phenomena of Inflammation, Stasis of the Blood, and Transudation of its Corpuscles through the walls of the vessels, without interference with structural continuity, as observed by Addison, Wallis, Williams, Cohnheim, and others.

Fig. 4.4: Programme cover of the 1873 Conversazione, Wakefield.
[Courtesy of the Stephen Beaumont Museum, Wakefield]

directly on the nerve-substance'.[473] Whether the audience of the conversazione were convinced by his analysis is unknown, but Carpenter included it in revised versions of his *Principles of Mental Physiology* – originally published in 1852 – with post-1874 editions

[473] *Ibid.* p. 12.

including a 14-page appendix that almost directly replicated his conversazione speech.[474] Carpenter certainly believed Ferrier's results were important enough to impact all future work on the brain, although he did not find anything to change his own established conclusions.

If Carpenter questioned the novelty of Ferrier's findings, he was in no way uncertain of their validity, arguing that

> the fact that other experimenters have not obtained the positive results which Dr. Ferrier has over and over again publicly exhibited, merely shows, in my opinion, that they have not succeeded in obtaining the precise conditions which are essential to the success of the experiments.[475]

Yet most early criticisms were technical, coming first from France, initially from Eugene Dupuy, then soon again from Carville & Duret, the latter providing evidence that animals with large areas of the cortex removed still showed voluntary movement, and that electrical current can be detected in the hemispheres when another part is being stimulated.[476] As Ferrier wrote, it was 'contended that the electric currents employed by me for irritation are conducted from the surface of the brain to the basal ganglia', stimulating the lower motor centres of the brain as had been achieved by Flourens earlier in the century.[477]

Édouard Brown-Séquard, international man of neurology, maintained his complaints that cerebral localisation's advocates paid insufficient attention to contradictory evidence, whilst the Vice-President of the Royal Society for 1874-75, physiologist John Scott Burdon-Sanderson, demonstrated an experiment to specifically provide evidence against the presence of motor centres in the cerebral cortex. He wrote that 'although Dr. Dupuy has failed to prove that the movements he described are of the same nature with those described by Dr. Ferrier, the latter has not proved that they are different'.[478] In front of the Royal Society, he displayed experiments that appeared to prove that electrical stimulation of the cortex simply diffused to the lower centres, and that this was the cause of the motor movements Ferrier was able to display. Further work was thus needed both to counter the criticisms, and to corroborate, or make sense of, cerebral localisation. Over the course of the next few decades support came from several avenues, including electrophysiological recordings, chemical analysis, clinical observations, brain-mapping, and cell studies, each of which provided evidence in defence of cerebral localisation.

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[474] Carpenter (1876) pp. 709-722.
[475] W.B. Carpenter, 'On the physiological import of Dr Ferrier's experimental investigations into the functions of the brain', *WRLAMR*, 4 (1874) p. 2.
[476] E. Dupuy, *Examen de quelques points de la physique du cerveau* (Paris, 1873); C. Carville & H. Duret, 'Sur les Fonctions des Hémisphères Cérébraux', in *Archives de Phsyiologie*, 2 (1875) pp. 352-491. See Millett (1998) for further details on these criticisms of Ferrier.
[477] D. Ferrier, 'Pathological Illustrations of Brain Function', *WRLAMR*, 4 (1874) pp. 30-62 (46).
[478] J.B. Sanderson (1873–1874) p. 369.

To gauge how the West Riding Lunatic Asylum may have helped in establishing the doctrine of localisation, it is illustrative to look at two other cases of cerebral researchers acting at the same time as Ferrier whose work was not well received. The examples of Richard Caton (1842-1926) and John Ludwig Wilhelm Thundichum (1829-1901) show that being relevant to contemporary debate, being an addition to what was already known, even being heard and read, did not necessarily mean that such researches would be recognised and incorporated into the corpus. Even though these two studies contributed original ideas to cerebral localisation, one of the most significant debates of the time, their value went unnoticed by most, if not all, of those who were involved.

Early verification of Ferrier's ideas came from Richard Caton, who had been a medical student in Edinburgh at the same time as Ferrier, and operated in another provincial northern institution, the Royal Infirmary at Liverpool. After reading Ferrier's work he was inspired to carry out his own investigations to support the results of cerebral stimulation, by reversing the experimental technique.[479] Operating with primitive apparatus, Caton managed to detect electrical currents in the brains of rabbits and monkeys when certain actions or senses were in operation, in exactly those areas of the cortex that Ferrier's conclusions supposed. He presented his electrophysiological recordings to the annual meeting of the British Medical Association in 1875, and had communicated them to the Royal Society for possible publication.[480] Ironically, his letter to the Royal Society was received by Burdon-Sanderson, who had already objected to Ferrier's findings, and who responded to Caton that

> there can be no objection to your making a preliminary communication to the Royal Society as to the results of your experiments […] I am very glad that you have got such important results. Theoretically the subject is a very difficult one and wants many additional observations to bring it into clearness. […] PS Ferrier's (co-medallist) new experiments are to be read at next meeting May 13.[481]

Caton did not follow up the invitation to present his work, however, and in fact virtually left it alone until 1891 when he became embroiled in a priority dispute with two new experimenters, both of whom thought they were the first to demonstrate the localisation of function with electrical recordings. When he died in 1926, obituarists still effectively ignored his electrophysiological work, and it was only when the famed experimenter Hans Berger cited Caton in his first papers on the human electroencephalograph (EEG) in 1929, that Caton was properly reinstated as an important figure in the history of brain

[479] Lord Cohen of Birkenhead (1959) pp. 645-651.
[480] [Anon.] (1875e) pp. 277-278.
[481] J.B. Sanderson to R. Caton, n.d., post-marked 5th May 1875 (Special Collections, University of Liverpool Library, D308/2/5).

experimenting: his work is now seen as part of a line traced back to Du Bois-Reymond's studies. It seems likely that Ferrier would have been aware of Caton's results at the time, though he never utilised them in defence of his own ideas.[482]

At the same time as Caton was detecting brain activity in Liverpool, the German-born British chemist Wilhelm Thundichum was in London, beginning researches into the chemical constituents of the human brain, which, as he saw it, were of fundamental importance in understanding the physical nature of the cerebral substance. Isolating separate compounds from the apparently homogenous matter of the brain, his work showed that it was not made up of a single substance ('protagon'), but a mixture of several: he published his results throughout the 1870s and released a major book on the subject, *A Treatise on the Chemical Constitution of the Brain*, in 1884, making what he believed were great advances in the field of neurochemistry.[483]

Like Caton, his work was not fully appreciated until after his death; unlike Caton, this was not because it had been ignored in his life-time, but rather because it had been almost universally ridiculed by the scientific and medical community. Thundichum's early work in 1874 had been sponsored, to the sum of £500, with money from the Treasury as part of John Simon's project of disease research. This funding had been withdrawn, however, when Simon was advised by none other than John Burdon Sanderson that Thundichum's assertions were 'without sufficient foundation and therefore ought not to be made'.[484] Thundichum's 'chemical neurology' was dismissed as the elaborations of an isolated eccentric, who provided mere 'dilettantisms' and gave only 'new names for old facts'. That his results were an inherent support for cerebral localisation, by proving the brain was chemically differentiated, was unremarked.[485]

In contrast to Caton and Thundichum, David Ferrier's researches were immediately picked up by interested observers, and even reached wide lay audiences. This was at least partly a consequence of the publicity and prestige that the West Riding Lunatic Asylum helped lend to them: the conversazione; the *Reports*; attention from the worlds of both medical psychology and experimental physiology – all these factors meant Ferrier's work was given a full and fair hearing, and hefty institutional support as a result of the respected research already conducted at the asylum. It is not possible to claim that Ferrier's success was solely due its beginnings in the asylum – the positive response of the *Times* and the British Association, and his continued efforts in London contributed to this – but it is clear that the asylum helped support his cause. In any case, Wakefield did not just provide

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[482] Thomas Lauder-Brunton spoke on behalf of Caton at the 1875 BMA meeting, saying Caton 'could confirm Dr Ferrier's statements', see [Anon.] (1875e) p. 278.
[483] See Spillane (1981) pp. 401-405.
[484] John Burdon Sanderson to John Simon, 17 December 1874, quoted by Romano (2002) p. 73.
[485] Spillane (1981) pp. 401-403; Marshall and Magoun (1998) pp. 157-159.

support for cerebral localisation by association; in its research output and working practices, it institutionalised the doctrine, incorporating and representing it as a functioning, operational idea. And it provided the sources on which Ferrier was able to apply his findings to the human brain too.

IV. An Idea Institutionalised: Localisation in the Asylum

Whilst he had extended his initial researches with experiments on macaques, Ferrier's first reply to his critics came in the 1874 edition of the *Reports*, in a paper whose significance has escaped the attention of historians. Returning to the asylum, with its unique pathology set-up, allowed him to provide further evidence in support of his work. In 'Pathological Illustrations of Brain Function', he presented

> clinical bearings of the experimental researches on the Functions of the Brain, published in the last number of these Reports, by short commentaries on several cases extracted from the case-books and pathological record of the West Riding Lunatic Asylum[486]

The paper was a direct response to those who questioned his experimental methods. Not only were their criticisms incorrect, but together they were contradictory. He wrote that 'there is no haphazard conduction' from the cortex, but rather direct neural control: 'the mode of explaining away the phenomena adopted by Dupuy, Carville, &c., seems altogether incompatible with these facts'. More than this, however, Ferrier set out to show that his experimental findings explained not only the motor and sensory functions of the brain, but also its psychological functions, writing that

> there is every reason to believe that the union of physiological experimentation with pathological observation will ultimately succeed in unravelling even this obscure subject, and establishing mental physiology and pathology on a more tangible basis.[487]

All psychological functions, he believed, could be explained by motor and sensory operations of the brain combined.

Ferrier presented five clinical case studies to reinforce his conclusions, obtaining corroborating evidence in records of patient with epileptic dementia, epileptic mania, dementia, aphasia with right hemiplegia, and melancholia. His object was to trace 'the relation between the symptoms during life and the lesions of the hemispheres which were revealed after death'. In doing so, he relied entirely on Wakefield's case books and post-mortem reports, quoting from them 'almost verbatim', even though they were not intended

[486] D. Ferrier, 'Pathological Illustrations of Brain Function', *WRLAMR*, 4 (1874) p. 30.
[487] *Ibid.*, pp. 47, 61-62.

for publication. 'One special feature in them', he noted, 'is the accuracy with which *post-mortem* appearances of the brain are given. [...] It is only by accurate records of this nature that our knowledge of the localisation of function in the human brain can be advanced.'[488] This was clinical-pathological correlation, and was only possible due to the methodical and detailed reporting that was done, as the previous chapter outlined, under Crichton-Browne's direction. Though he was privy to the medical records at Queen Square in London – Britain's only specialist hospital for nervous diseases – Ferrier could not rely on these, as the recording of systematic post-mortem records did not begin there until the mid-1890s.[489] Ferrier even suggested that the brain charts produced by Tuke and Howden might form a general guide for pathologists. **[See Fig. 3.9]** It was only in asylums that pathological studies of brain lesions were systematically conducted, and only in Wakefield that they were done with sufficient accuracy to be of value in the cause of cerebral localisation.

In each of the five cases Ferrier studied, lesions or tumours were found to match closely with the symptoms he expected from his animal studies, constituting 'numerous confirmations of the conclusions which physiological experiment seemed to warrant'.[490] For example, comparing the patients with epileptic dementia and epileptic mania, he found that the former always remained conscious during fits, whilst the latter always became unconscious. On dissection, the former had lesions in the parietal region of the brain – which he had delineated as motor in function – but the second patient suffered lesions in the angular gyrus, the first annectent and the uncinate gyri, all of which were centres of sensation. Since consciousness, he argued, relied on the constant activity of the sensory regions, this explained the difference in their conditions. Moreover, the second patient had seen visions, which Ferrier proposed was a consequence of the centres of visual perception being irritated.

Ferrier was also happy to draw attention to the harmony between his own physiological investigations and 'the results of Dr. Hughlings Jackson's clinical observations'.[491] Jackson viewed the brain as a hierarchical system, which becomes more complex – due to later evolutionary development – as one progresses upwards. Under normal conditions, the highest centre (the hemispheres), inhibited the lower centres; but when damaged, the higher functions were lost whilst the operations of the lower centres were released. Furthermore, Jackson's observations on epilepsy led to him proposing epileptic fits as a 'march' of symptoms, beginning in a specific, localised site, often within the cerebral cortex. It was by noting where patients first felt the sensation of an attack commencing that Jackson could match bodily motor functions with localised lesions of the

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[488] *Ibid.*, pp. 61, 30-31.
[489] See Queen Square Archives, The National Hospital for Neurology and Neurosurgery, London.
[490] D. Ferrier, 'Pathological Illustrations of Brain Function', *WRLAMR*, 4 (1874) p. 61.
[491] *Ibid.*, p. 49.

brain. Jackson refined and extended the localization agenda, not only by providing new evidence but also by explaining the functions of the brain as entirely produced by sensory and motor activity combined.

Ferrier was certainly justified in claiming Jackson as an ally at this point, as Jackson had been one of the very earliest to comment favourably upon Ferrier's findings, contributing to the same *Reports* volume as Ferrier's first article in 1873 with a paper which neatly summed up his own ideas developed at Queen Square in relation to Ferrier's recent advances. Indeed, he even replied to the *BMJ* just two weeks after Ferrier's initial twelve conclusions had been published there, writing:

> [it] is very satisfactory to me to find that the results he [Ferrier] has obtained from the new method of investigation... agree with the general conclusions I have come to from observing cases of paralysis, convulsion, chorea, etc., in man… for what is called the *pathology* of convulsions in man, they have a remarkable value.[492]

Ferrier's findings had been a confirmation of the idea Jackson had been developing since the mid-to-late 1860s, and he even dedicated his 1876 book to Jackson, 'who from a clinical and pathological standpoint anticipated many of the more important results of recent experimental investigation into the functions of the cerebral hemispheres'.[493]

From the universal maps of motor and sensory function in monkeys that he had produced, Ferrier explained the physical and psychological conditions of human patients. In turn, the pathological records of the asylum's patients provided corroborating for those monkey brain maps. Further corroborating evidence also came from across the Atlantic, where the American physician Roberts Bartholow had, in April 1874, electrically stimulated the brain of a human patient, and had elicited muscular contractions similar to those Ferrier had induced in monkeys. With this, Ferrier had proof enough that the 'brain of man is constructed on the same type as that of the monkey', and in his 1876 book he transposed his monkey maps onto diagrams of the human cerebral convolutions produced by the German anatomist Alexander Ecker.[494]

Meanwhile, though they did not use Ecker's diagrams (instead using older images taken from a standard textbook), from early in 1875 the medical officers at Wakefield had also started to use brain diagrams in the asylum's post-mortem reports, as discussed in the previous chapter. Ferrier's brain maps, and his confirmation that the human cortex was functionally localised, encouraged even greater attention to detail in the pathological work of the asylum. This did not just mean recording images, however, but also looking closer at

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[492] J.H. Jackson (1873) pp. 531-533.
[493] Ferrier (1876) Dedication page.
[494] Ferrier (1876) p. 470. On Bartholow, See Harris and Almerigi (2009).

pathological specimens. The degeneration of cerebral matter upon which insanity was presumed to be consequent was not always visible to the naked eye, as Crichton-Browne observed in 1871:

> derangement of the mental powers may depend upon modifications in the polar molecules of the nervous element, upon changes in the temperature, chemical composition or reproduction of the nervous tissues, which even aided by scientific instruments we are unequal to discover.[495]

The instrument upon which scientists had began to focus their attention was the microscope, which – in large part through the researches of the German biologist Rudolf Virchow (1821-1902) – had opened up the new field of 'cellular pathology'.

Crichton-Browne found a capable and concurring colleague in cellular pathology in Herbert Coddington Major, who joined the asylum as a clinical assistant in 1871, quickly rising to the position of assistant medical officer before taking the role of medical director in 1876 when Crichton-Browne departed. Major was the first to introduce microscopy to Wakefield, and in his first contribution to the *Reports* in 1872, he began by introducing a theme that was to prove central to his work.

> Almost every organ and tissue of the body has, either in part or as a whole, some definite structural arrangement, which in health does not vary… With the brain it is far otherwise, and he who so reasoning, would here proceed to pronounce on what is normal and abnormal in structure, would fall into the error which I now seek to expose, in order to fully guard against it.[496]

Major argued that what constituted normal could in fact vary greatly, and 'urged very earnestly the study and record of every histological structure or peculiarity which may be found in the brains of persons dying *sane*', because experience had taught him that brains which appeared unaffected on gross inspection may show deterioration under the microscope, whilst conversely the brain cortex 'may be morbidly affected without an appreciable mental impairment'.[497] All of this, in his view, impressed 'the necessity of the utmost caution in connecting cellular changes in the brain after death with mental phenomena manifested during life'.[498] His argument, that the pathologist must take care when associating any visible lesions in the brain, or lack thereof, with specific mental conditions, was original at the time, showing a level of sophistication in the mortuary that had not previously been seen there. Compared to other asylums too, his work was advanced. In 1874, when Balfour of the Hampstead Asylum reported that 640 of the 700 post-mortems

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[495] J. Crichton-Browne, 'Cranial Injuries and Mental Diseases', *WRLAMR*, 1 (1871) p. 21.
[496] H.C. Major, 'On the minute structure of the cortical substance of the brain, in a case of chronic brain wasting', *WRLAMR*, 2 (1872) p. 41.
[497] Major (1875) pp. 276–277.
[498] *Ibid.*, p. 277.

he had conducted on deceased insane patients had shown brain lesions, he had argued that it was likely only the limitations of his apparatus and procedures prevented him finding some in the other 60. This was because, as he put it, an 'unhealthy idea, however generated, will surely produce in the nerve cells through which it passes, an unhealthy condition'.[499] Before Major, any deviation from the example of a perfectly healthy brain was assumed by asylum men to be unhealthy: he pointed out, however, that 'the difficulty is to distinguish between the insane brain and that of an individual sane; but in whom the brain is (as in time it may be) anaemic, wasted, or even with tracts of softening.'[500]

Major, in analysing the post-mortem records of the asylum, found that 83% of autopsies – excluding cases of general paralysis – did show apparent morbid change. He was not, however, willing to directly link post-mortem appearances with living symptoms until greater evidence was available, since he could not confirm they were the root of the illness.[501] Cerebral localisation, or at least its adherents, had matured since the phrenological days when any evidence was corroborating evidence. The asylum, which imported the idea of cerebral localisation into its working practices, was then able to export through its *Reports* evidence that supported that doctrine. By sheer accumulation of cases, it contributed to the localisers' cause by documenting details of where in the cortex unusual appearances had been noted, and with what living symptoms these had been accompanied.

Major contributed further to the work of the localisers in his studies of the fine anatomy of the cortex, differentiating areas of the cortex on the basis of their distinct cellular composition. Such studies had begun with Jules Baillarger, a psychiatrist sympathetic to localisation working at the Salpêtrière in Paris, who in 1840 had first argued that the cortex was divided into six layers in the human brain. By Major's time there was little agreement on exactly how many layers existed, with famous names like Broca, Charcot and Meynert all providing alternative answers. Major agreed with Baillarger, that the cortex is six-layered (a view agreed on today), but again, rather than his final conclusion it was Major's methods that were most significant. He wrote,

> much of the uncertainty and confusion on the subject… would have been avoided if authors had more frequently delineated the objects which they desired to describe. In so complex a study as the structure of the brain, long descriptions, unaided by actual demonstration or by plates, are in reality of little value.[502]

To this end, he thus used plates to illustrate his findings, and presented his conclusions with strict measurements of millimeter precision. He was aided in this by the tephrylometer, an

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[499] Balfour (1874) pp. 49-60.
[500] Quoted in D.H. Tuke (1881) p. 328.
[501] *Ibid.*, p. 328.
[502] H.C. Major, 'The Histology of the Island of Reil', *WRLAMR*, Vol. 6 (1876) p. 4.

instrument somewhat like a straw which he had invented to accurately measure the depths of the cerebral convolutions, and allowed him also to 'open up new fields of comparative neurohistological knowledge', comparing precisely the cortical structure of humans with other animals.[503]

Maps of the brain, begun by Ferrier to identify different functions, became the primary tool and resource of localisation researchers, and were greatly enhanced by advances in microscopy and staining techniques during the course of the nineteenth century. Since Theodor Schwann's early cell theory in1839, understanding of the individual neurone had progressed and was at its most advanced in the 1870s in the work of Italian pathologist Camillo Golgi, who in 1873 discovered a new method of silver nitrate staining that allowed the full cell body, axon and dendrites, to be viewed.[504] As with neurochemistry, the identification of individual nerve cells countered the notion that the cerebral cortex was a unified material, which in turn served to support the idea that its functions are split and specifically located. Similarly, in showing that the brain cortex is divided into distinct areas, microscopy provided evidence for the view that functions might also be divided into distinct areas. As is seen in the workings of the West Riding Lunatic Asylum, and also illustrated in the journal *Brain,* from Ferrier's time onwards there were a great number of observational and experimental advances that, whilst not as celebrated or integrated in the history of cerebral localisation, were of fundamental importance in embedding the doctrine and making sense of its conclusions in medical practice.

Interestingly, another significant figure who had disagreed with Major on the number of layers in the human cortex was William Bevan-Lewis, Major's histological protégé at Wakefield and the man who eventually took over from him as medical director in the asylum. Having joined the asylum in 1875 – he was one of the last appointments made by Crichton-Browne – Bevan-Lewis's contributed his first paper in the that year's *Reports* following Major's directive to observe changes in the great sciatic nerve in paralysed patients.[505] Declaring that most of those studying nervous diseases at the time were too concerned with peripheral nerves, his researches soon turned to the cortex, and in 1877, with Major now head of the Asylum, Bevan-Lewis collaborated with Henry Clarke, medical officer at the nearby West Riding Prison, in research that provided histological confirmation that the motor regions of the cortex that Ferrier had defined were structurally equipped for the role they had been assigned. By this point the asylum's *Report* had been discontinued as a result of Crichton-Browne's departure, so the first public viewing of the research came at

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[503] Todd & Ashworth (1985) p. 164. Henry Maudsley included Major's researches in his popular book, *The Physiology of Mind* (1876).
[504] See E.G. Jones (1999) pp. 170-178.
[505] W. Bevan-Lewis, 'On the Histology of the Great Sciatic Nerve in General Paralysis of the Insane', *WRLAMR,* 5 (1875) pp. 85-104.

the Royal Society, where it was presented by Ferrier himself (only members were allowed to present).

It had long been known that pyramidal cells ran as a continuum from the spinal cord to the lower centres of the brain, and these 'ganglionic cells' had been studied in closer detail by the Russian histologist Betz in 1874, who had proposed that they were motor in function. Bevan-Lewis and Clarke thus decided 'to make a critical examination of the relationship which these ganglionic cells bear to the extensive area defined as the motor area by Ferrier.'[506] They found that 'groupings of [ganglionic] cells are thus distributed over certain areas of the cortex closely corresponding to several of the motor centres of Ferrier', results which must surely have pleased Ferrier reading them.[507] Indeed, in a more comprehensive paper on the topic published five months later they were able to confirm that these 'great elements are constituents of the fourth cortical layer' and that 'examinations tend to convince us that these cells have a motor significance'. Bevan-Lewis could prove that there was a direct path of motor cells from the cortex to the lower centres, and that these paths coincided with the areas where Ferrier had been able to excite motion by stimulation.[508] The research was gradually accepted, and again a member of the West Riding Lunatic Asylum had helped support cerebral localisation. **[See Fig. 4.5]**

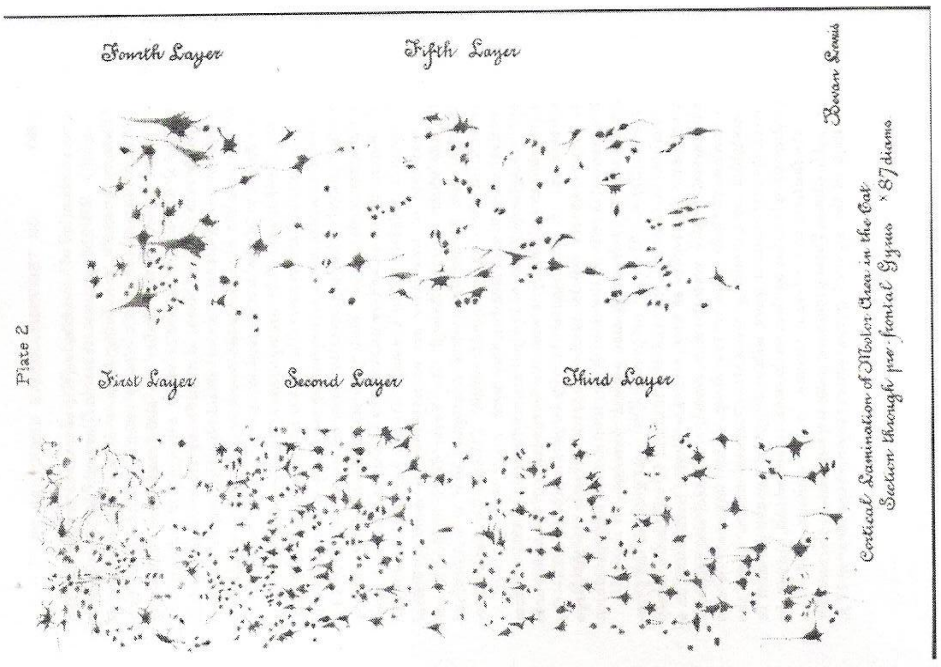

Fig. 4.5: Diagram of the five layers of the cortex identified by Bevan-Lewis, showing ganglionic cells beginning in the fourth layer
[Bevan-Lewis (1878) Plate 2]

[506] Bevan-Lewis and Clarke (1878) p. 44.
[507] *Ibid.* p. 48.
[508] Bevan-Lewis (1878) p. 80.

Whilst early criticisms of Ferrier's work challenged the validity of his scientific methods and provided evidence to counter his claims, cerebral localisation was soon attacked on its principles too. To some, cerebral localisation was not just reductive of empirical explanation, but reductive of the human soul, and just as phrenology's supporters in the first half of the century had been accused of propagating materialist psychology, Ferrier's 'new phrenology' – as it was termed by its critics – was seen by some as an attempt to remove God from the human mind. Physiological researches fed into scientific and religious debates in Victorian Britain, and became evidence in the arguments over materialism which followed John Tyndall's 1874 Belfast Address.[509] Ferrier's investigations crossed those two constructs of modernity, science and society, and this was especially clear in his influence upon the direction of early anti-vivisection campaigners. What is also clear is the link that had been forged between Ferrier, cerebral localisation and the West Riding Lunatic Asylum in the minds of the public, who saw danger not just in the materialism of physiological brain research, but also in the fact that asylum patients might become part of the experiments.

In an 1875 article entitled 'The moral aspects of vivisection', Frances Power Cobbe, wrote that '[t]he common passion for science in general and for physiology in particular, and the prevalent materialistic belief that the secrets of the Mind can be best explored in matter, undoubtedly account in no small matter for the vehemence of the new pursuit of original physiological investigations.'[510] Cobbe, who founded the prominent Victoria Street Society and was the single most influential figure of the anti-vivisection movement in Britain, saw experimental brain studies as unquestionably linked with materialism and a driving force behind the recent rise of animal experimentation. Her understanding is important, as it formed part of her underlying motives in the anti-vivisection campaigns she led in the late-nineteenth century, which in turn represented the fiercest opposition to the work of Ferrier and the cerebral localisers for around thirty years. She was, according to Huxley, 'the Lion in the path of "vivisection".'[511]

Earlier in the decade Cobbe had contributed two complementary articles to *Macmillan's Magazine* on the subject of psychology. In the first of these, 'Unconscious Cerebration: A Psychological Study,' she argued that

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[509] See: Hearnshaw (1964) pp. 120-131, on the links between physiology, psychology and materialism debates in the 1870s. Ferrier's work had been the most talked about item at the 1873 BAAS meeting in Bradford, the year before Tyndall's famous Belfast address to the BAAS in 1874. For background see: F. Turner (1978). For a critical review of materialism at the time, see: [Anon.], 'Modern Scientific Materialism', *Blackwood's Edinburgh Magazine*, 116 (1874) pp. 519-539.
[510] Cobbe (1875) p. 228.
[511] T.H. Huxley to Michael Foster, 16 April 1875, in Bynum and Overy (2009) p. 61.

> should physiology establish the fact that the brain, by its automatic action, performs all the functions which we have been wont to attribute to 'Mind,' that great discovery will stand alone, and will not determine, as supposed, the further steps of the argument; namely, that our conscious selves are nothing more than the sum of the action of our brains during life, and that there is no room to hope that they may survive their dissolution.[512]

Cobbe took the idea of unconscious cerebration – then a fairly orthodox theory in British science – from W.B. Carpenter, to show that though it explained much, there was a great deal that it failed to account for.[513] In her words, 'the limitations and failures of unconscious cerebration would supply us with as large a study as its marvellous powers and achievements."[514] Her trust in the ability of ordinary people to be able to engage in true scientific thinking was central, and apparent in both papers was an approach to psychology that was completely undermined by Ferrier and his studies of cerebral localisation. Both Carpenter's 'unconscious cerebration,' and the notion that non-scientific members could contribute towards understanding of the brain, were dismissed by the new physiological studies. Ferrier demonstrated in the most macabre fashion that volitional acts were not reliant on a conscious immaterial mind, making cats claw and macaques kick simply by stimulating a small region of the animals' cerebral hemispheres. Only investigations resting on observation and experimentation with actual brains could contribute to this version of scientific progress. The reading public could only be passive in the uptake of knowledge, even when that knowledge challenged their personal belief in the separation of mind and brain. The public did not have to remain passive, however, with regards to the methods by which scientists produced such knowledge.

Following the passage of the Cruelty to Animals Act 1876 through Parliament, anti-vivisection campaigners were indignant at what they saw as a concession to the scientific lobby in allowing vivisection to continue. Thus, after two aborted attempts, in 1881 they finally prosecuted an individual for breaking the laws regarding vivisection: David Ferrier. In a well-documented session of the 1881 International Medical Congress in London, Ferrier debated the theory of localisation with his German holist opponent, Friedrich Goltz.[515] Both Goltz and Ferrier argued in support of their own theories of brain function, and each had a test animal to be sacrificed and studied as their crucial experiment. For Goltz, a dog with much of its frontal lobes removed yet which showed no loss of motor or sensory function; for Ferrier, a monkey with no voluntary control of its right-sided limbs

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[512] Cobbe (1870b) p. 24.
[513] Carpenter too was critical of the use of vivisection. Cobbe was a close friend of Carpenter's sister Mary, herself an active campaigner for social reform. For more on Cobbe, see: S. Mitchell, *Frances Power Cobbe: Victorian feminist, journalist, reformer* (Charlottesville; London: University of Virginia Press, 2004).
[514] Cobbe (1870b) p. 25.
[515] See Finger (2004) pp. 155-175; Otis (2007).

after having had its left motor cortex removed months earlier. When both animals were sacrificed it was observed that the monkey's brain was as Ferrier described, but Goltz's dog had much more of its cortex intact than had been anticipated. Ferrier's monkey won the day, but around three months later he was summoned to court for operating on animals without an appropriate license. The case was soon thrown out, however, when it was revealed that Ferrier's assistant, fellow physiologist Gerald Yeo, had actually conducted all the experiments, and was in possession of a full licence. Cobbe's prosecution failed, and the scientific community breathed a collective sigh of relief.

Support for Ferrier from across the country was evident in the letters received by newspapers and medical journals after the case, with the *Times* and *BMJ* in particular siding with him. The day after the trial the *BMJ* led with a 3-page article espousing the benefits and necessity of Ferrier's research, whilst printing another seven pages dedicated to reporting the case in full at the back of the issue. Comparing Ferrier with Galileo, Galvani and Pasteur, they argued that in pressing charges '[i]t would hardly have been possible to select a physician whose researches have done so much as his to throw light on the nature of the most important functions of the human race, those of the brain.'[516] Ferrier's defenders made reference to the possibility, or indeed the actuality, of surgery using his maps of the brain, and the untold benefits his work could have: there was no doubt in their minds as to the weight of his accomplishments. Anti-vivisection campaigners turned to reflect on their movement, and to repeat to their audiences the potential tragedies that lurked in a country that did not seriously resist animal experimentation. The incidence of such operations would undoubtedly continue to rise, and scientists would push the boundaries of decency further, yet without contributing towards the 'progress' of society that was meant to be their aim. Indeed, in a society openly tolerant of testing on animals, surely it was only a matter of time before scientists turned to other humans as their test material?

Writing in 1882, one anti-vivisection campaigner noted how

> [t]he German physiologists ... rapturously rush to the torture-trough, and the French and Italian physiologists out-rival each other in their relations of their wanton and exultant ingenuity in producing unnatural agony and watching its helpless struggles. That these men do not immediately give themselves the greater luxury of human victims is due only to their timidity before public opinion ... Why shall not the physiologist claim the cripple, the mute, the idiot, the convict, the pauper, to enhance the "interest" of his experiments?[517]

This sentiment genuinely chimed with certain members of the public who were fearful of modern scientific medicine and the claims it made over their bodies, whether alive or dead. The early anti-vaccination movement, and the bitter campaigns that followed the passing of

[516] [Anon.] (1881a) pp. 822.
[517] Ouida (1882) pp. 422-423.

the Contagious Diseases Acts, were two significant manifestations of this general concern with the creeping power of scientific and medical authority.[518] The worry of potentially being experimented upon like vivisected animals also had a resonance with criticisms of asylums in the mid-to-late nineteenth century. Asylums were remote, forebidding and obscure institutions, whose working practices were mostly misunderstood and often dreaded, as foreign to most as were the grotesque experimental practices of Continental science. There was public concern at the restraint and mistreatment of asylum patients, who might be treated like brutish animals by their attendants. As the asylums grew, so did criticisms of them, particularly of the legislative power of the asylum to commit insane or even sane individuals.[519] Out of this worry came the Alleged Lunatics' Friend Society (1845-63), forerunner to the Lunacy Law Reform Association (1873-85) – both groups whose arguments and agitations were eventually successful in leading to significant changes in English Lunacy Laws.

David Ferrier had conducted his first investigations at the West Riding Lunatic Asylum, cementing the links between the institution, experimentation and vivisection. Here was a medical institution not just using experimental science, but actually testing it on its fifteen hundred patients; paupers unlikely or even unable to contest their treatments.[520] Cobbe voiced a terrifying possibility: '[s]hall we have our hospitals employed in ingeniously proving Professor Ferrier's cerebral investigations and painful experiments on the brain of a dying patient who sought the shelter of that 'Good Samaritan' institution?' She had a precedent to refer to: the Ohio physician Roberts Bartholow had already replicated Ferrier's electrical stimulations on Mary Rafferty, a young cancer patient under his care at the Medical College, evidence of which Ferrier used in support of his own findings.[521] Though he had spent only one month testing animals in Wakefield, Ferrier, cerebral localisation and the asylum became conflated in anti-vivisection literature in the last quarter of the century.

The concern, that patients might be treated as little more than a body of working parts for live experiments, was presented most forcefully by the anti-vivisectionists. When the 1876 Act had passed through its second reading in the commons, the MP James Maden Holt argued against Ferrier's researches.

> They manifest a refinement of cruelty which renders the operator, in my opinion, quite unfit to be trusted with the care of an animal, much less of a human being. When it comes to the knowledge

[518] French (1975). Miller (2009) also highlights how the procedure of force-feeding was entangled with the activities of vivisectors.
[519] See: Hervey (1986); K. Jones (1960) pp. 7-28.
[520] Post-mortem dissections became common in Wakefield and elsewhere, though there was still strong resistance to them, as discussed by Andrews (2012).
[521] Cobbe (1875) p. 235. For Bartholow's case, see Harris and Almerigi (2009).

> of the public that these are the practices of a medical man who has free access to the lunatic asylums of the West Riding, public indignation will know no bounds.[522]

Pamphlets were produced by the anti-vivisectors attacking Ferrier directly, criticising his role in the 1881 trial and highlighting problems with his experimental findings. Not only were the actions of vivisection ghastly, but 'the most distressing feature of these experiments is... there is no finality in them.'[523] The 'cold, proud, atheistic spirit that distinguishes modern investigators' had not, and would not, succeed in localizing all mental functions.[524]

Ferrier, localisation and vivisection also became topics for several prominent novels of the time. In *Heart and Science* (1883), Wilkie Collins had Ferrier in mind when writing explicitly in support of the anti-vivisectionist cause.[525] Collins 'contrived to make use of Professor Ferrier – writing on the "Localisation [*sic*] of Cerebral Disease,"' and sought to 'drag the scientific English Savage from his shelter behind the medical interests of humanity.'[526] H.G. Wells' *The Island of Dr. Moreau* (1896) placed Ferrier as the theoretical background underpinning Moreau's attempts to manipulate the mental structure in animals, so as to think and communicate like humans.[527] The vivisected animals, which jabber and are kept in conditions similar to asylum patients (at least in the imagination of the public), eventually turn on Moreau. Furthermore, in *Dracula* (1897), Bram Stoker drew attention to the way modern psychology, in acquiring a more physiological basis, construed humans as automata devoid of a soul. Dr Seward, an asylum superintendent in the novel, exclaimed: 'Had I even the secret of one such mind – did I hold the key to the fancy of even one lunatic – I might advance my own branch of science to a pitch compared with which Burdon-Sanderson's physiology or Ferrier's brain knowledge would be as nothing.'[528] The anti-vivisection movement, as Star has argued, provided the strongest opposition to the nascent doctrine of localisation, and actually worked to unite its supporters in defence of the theory and the necessity of vivisection.[529]

The charge of materialism was an easy and common one from those against the scientific method of the localisers, being an instant tag to denigrate the work they sought to

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[522] H.C. Deb, 9 August 1876, vol. 231, 914.
[523] J. Clarke, "Monkeys' brains once more: Schaefer v. Ferrier", Panphlet (London: Victoria Street Society united with the International Association for the Protection of Animals from Vivisection, 1888) pp. 2-3.
[524] Ibid., pp. 6-7.
[525] Otis (2007) suggests that Collins and Stoker "re-tried" Ferrier through literature after the failed 1881 case.
[526] W. Collins, *Heart and Science: A Story of the Present Time* (London, 1883), To Readers in Particular, Ch. 32. *The Woman in White* (1860), one of Collins' earlier and more famous novels, had also presented asylums in a negative light, contributing to public distaste for such institutions. See Pedlar (2003) p. 172.
[527] Otis (2007) pp. 42-47.
[528] Stoker, *Dracula*, quoted in Pedlar (2003) p. 169. Stiles (2006) p. 147.
[529] Star (1989).

attack. Journals and newspapers regularly included conservative contributions criticising 'materialist' work, of which those men who studied and localised functions of the brain were prime examples.[530] But it was not just religious or conservative campaigners who were troubled by localisation – even some of its strongest supporters recoiled at the direction that *Brain* and the band of localisers were taking, with both Jackson and Crichton-Browne speaking out specifically at their materialist conclusions. In 1887 Crichton-Browne left the Neurological Society he had helped found, such was his dismay at their latest findings; and in his last contribution to *Brain*, he expressed his discomfort at Ferrier's latest theories on our 'thought-material'.[531] He wrote:

> to relegate our whole thought-material to sensory centres, for that is what it comes to, according to Ferrier's most recent theory – is to degrade a large region of the cerebrum from its high estate, and leave it a mere superfluous intrusion in the brain mass.[532]

Crichton-Browne could not entertain the diminished authority Ferrier's psychology attributed to the will, as despite his scientific aims he was still firmly set in the Victorian ideals of a rational 'self-directed autonomy of individual behaviour'[533].

V. Conclusion: Loss of Will

That Crichton-Browne felt compelled to abandon the work of the localisers little over ten years after leaving the Asylum which had done so much to push their agenda tells us something about what was achieved, and why, under his direction at the West Riding Lunatic Asylum. Whilst he supported cerebral localisation, his initial grounding in this was from the background of phrenology, not a strictly experimental or reductivist outlook. Thus, he was not comfortable with the ultimate conclusions of Ferrier and the localisers, whom he saw as over-riding key elements of human nature. He encouraged an experimental, scientific approach to the study of the brain and insanity whilst he was in Wakefield, but he himself did not lead this research; rather, his achievements were as an organiser and facilitator, creating the circumstances under which scientific research could be conducted. Moreover, he was adept at understanding where there existed room for new significant developments to be made: where new apparatus, techniques or theories had the potential for greatly improving the stock of scientific and medical knowledge. The asylum, under his leadership, did more than any other institution previously had to raise the importance and prominence of cerebral research. It was thus at this time a unique place for studying the

[530] R. Smith (2004); see also F. Turner (1978).
[531] Oppenheim (1991) p. 75.
[532] Crichton-Browne (1887) pp. 103–106.
[533] Oppenheim (1991) p.75

brain: it incorporated both the background of cerebral localisation and general brain studies from the disciplines of both alienism and psychology, and spoke to audiences from both, as well as to the wider public. In the necessarily pragmatic setting of an asylum, practical solutions for studying the brain were achieved: the 1860s and 1870s were a key moment in the development of the doctrine of cerebral localisation, and the West Riding Lunatic Asylum was, during this key period, the most important place for its study.

5. Divided Practice

The legacy of Crichton-Browne's reign

I. Introduction: the Rise and Fall of Neurology and Psychiatry after Wakefield

ON DECEMBER 31ST 1875, nearly ten years after his arrival, James Crichton-Browne announced to the Committee of Visitors that he had been offered a role as one of the Lord Chancellor's Visitors in Lunacy, and was resigning his post at the asylum. Proud of his achievements in Wakefield, he wrote:

> I think I may, without impropriety, assert that your Asylum is not inferior in reputation to any establishment of the like kind in Europe, that it is accomplishing much useful work, and that its organisation is approved by those who are entitled to speak with on authority on such a subject.[534]

The Committee were extremely sorry to lose his valuable services, 'fully sensible that the high position which the asylum now holds in the country is mainly due to his exertions'.[535] He moved to London in the New Year, and so, it is generally regarded, did the locus of brain research in Britain.[536]

With his departure the research programme ended, the experiment was complete, and, as Scull has it, after the final publication of the *Reports* 'the asylum slid gradually back into the torpor that characterized the rest of the system.'[537] Crichton-Browne's Wakefield is seen as a local, ten-year blip in an otherwise consistent story of decline in the standing of asylums during the latter decades of the nineteenth century; an event of small consequence in the bigger picture of otherwise stultifying and ineffectual asylum practice.[538] The visible activity and output which characterised the Crichton-Browne years subsided after his departure, and those associated with the asylum came to preach the same gloomy line as the rest of the profession: that patient numbers were rising inexorably and the current system of detainment and treatment was not fit to solve the problem. Even Crichton-Browne himself lost some of the optimistic outlook that had defined his work in the West Riding. Looking back on his own achievements, in his final journal entry for the Committee, he argued it is

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[534] 'Committee of Visitors Minute Book', 31st December 1875 (WYAS C85/1/1/3).
[535] *Ibid.*
[536] See: Bynum (1985); Star (1989).
[537] Scull (1993) p. 254.
[538] Besides Scull, this view of late-nineteenth century British psychiatry has also been shared by: Clark (1982); Oppenheim (1991); Shorter (1997); Showalter (1987).

> not only vain but dangerous to disguise the fact that there is an actual increase in the prevalence of mental diseases amongst us, altogether out of proportion of the population [and] must I think shortly attract the attention of the legislature and of the public, to many unfortunate questions connected with our methods of dealing with the insane fever. The mere multifabrications and extensions of Asylums, does not meet the difficulty, and it seems to me that a demand will arise before long for more accurate information than is now available as to the origin and causes of cerebral diseases and as to the means by which they may be more effectively controlled.[539]

His gloomy view was an early indication of where his ideas would lead him, eventually becoming a leading voice in the eugenics movement, as will be discussed in the conclusion to this thesis. Pessimistic hereditarianism, viewing insanity as a problem of modern civilisation caused by moral and physical degeneration in the population, was in common currency amongst medical psychologists until the end of the century. A hereditary view of madness bred a therapeutic nihilism within much asylum practice, as the role of medical men came more and more to be one of custodianship and policing, as guardians of the nation's mental health, and less one of seeking cures for individual patients. The role accorded to experimental investigations was subordinated to practical matters, and British asylums remained scientific backwaters, in 'a formless static inertia that was difficult to understand' and from which they would not awake until the Great War, according to one American visitor.[540] Given this depressing view of later-Victorian psychiatry, it seems that Crichton-Browne's original appeal, to make asylums 'hospitals more and more', and to 'subordinate safe custody and comfortable lodging, to cure and scientific exploration', went unheeded. Which leads us to ask: did the work at Wakefield actually have any lasting influence on psychiatric theory or practice? Or more bluntly, was the project a failure?

It will be argued here that the work of the asylum did have a profound effect on the development not only of psychiatry, but also of neurology, in Britain during the final third of the nineteenth century. In fact, so successful was the project Crichton-Browne began at Wakefield that it effectively led to the separation of those two disciplines. This was an era of scientific and medical specialisation, when the 'common context' of Victorian culture began to break down and separate disciplines took on their own form, conducted in different settings, by different people, and published in different places.[541] In particular, this period saw 'the emergence of a critical and mature neurological profession', as neurology became a specialty of its own, distinct from general medicine on the one hand, and psychology (whether medical or not) on the other.[542] Though the West Riding Lunatic Asylum has

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[539] 'Medical Director's Journal', 27th January 1876 (WYAS C85/1/13/3).
[540] Jelliffe (1922) p. 247.
[541] R.M. Young (1985) p. 159. See Weisz (2006) for an overview of medical specialisation in the nineteenth century.
[542] Bynum (1985) p. 96. For more on the development of the neurological profession in Britain, see Casper (2006). For the American context, see Blustein (1981).

previously been seen as a precursor to this process, no serious attempt has been made to explain exactly how the roots at Wakefield are supposed to be connected to the flowering in London, and certainly no work has explored the influence of the Asylum on psychiatric practice.[543] Specifically, it is argued here that the project of research based around the brain, the doctrine of cerebral localisation, and the methods of experimental and pathological investigation – all of which pre-existed but crystallised in Wakefield – provided the core theory and approach around which the nascent neurological profession grew. This new programme of brain research, as was considered in the previous chapter, appeared to achieve rapid and spectacular results and a large legion of followers, and soon cleaved away from asylum-based practice, mostly ending up in Queen Square, London.[544] Furthermore, in doing so it took with it the study of many of the illnesses, and patients, that had been central to asylum research.

The search for localised functions and organic lesions in the brain, so long a guiding motif of medical psychology, came instead to be associated with the neurological profession, leaving asylums to deal with the chronic, awkward and less clear-cut illnesses that affected the brain. Within neurology, the same division between functional and organic diseases that Bucknill and Tuke had presented – illnesses of an unknown origin versus those created by a knowable lesion – was assumed.[545] In her book on the development of localisation theory at the National Hospital, Star briefly suggests that functional illnesses such as hysteria or neurasthenia were used as 'garbage categories' by neurological researchers to at once classify and ignore those patients whose symptoms did not match new localisation models.[546] Stretching this, I propose that, in a broader sense, the development of neurology at this time made psychiatry in Britain itself a 'garbage category', left behind to treat and explain those diseases which the new positive methods of neurological research did not engage with. Though there was still much overlap between the two fields, psychiatry essentially lost its authority over the methods and patients that were now deemed neurological. Diagnostic concerns that had long been the province of asylum men – epilepsy, ataxia and paralysis, for example, which were well-represented in the *Medical Reports* – became a primary concern for neurology's specialists. The term is well-chosen, moreover, as whilst asylum practice became a garbage category, it is also clear that

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[543] Bynum (1985); Star (1989).

[544] The National Hospital for Diseases of the Nervous System including Paralysis and Epilepsy, founded in 1859, is frequently referred to as 'Queen Square', given its location in central London.

[545] Bucknill and Tuke (1879). See Casper (2006) p. 65. Casper refers to both psychiatry and neurology, as well as even structural psychology and Freudian analysis, as fields for 'nerve specialists'. The point is that some psychiatrists were also nerve specialists, but not all nerve specialists were psychiatrists.

[546] Star (1989) pp. 173-174. A 'garbage', or 'sink' category, is a sociological term given to a loose classification that appears to be formed solely to accommodate any cases that do not fit other given categories. It's particularly relevant in medical diagnoses, but can be used to explain many social categories.

so too the patients under its custody came more and more to be seen as a form of social garbage. In the latter decades of the century, the ever-increasing and incurable cohort of insane patients across Britain were seen to be ‘piling up’ and ‘silting’ the nation’s institutions, which had become ‘dumping grounds’ for many untreatable individuals.

This is not to say that -Browne’s project had no positive influence in asylums, and this chapter will assess what became of the Wakefield experiment and its participants in psychiatry as well as in neurology. Throughout this thesis it has been emphasised that the asylum can be thought of as a ‘research school’, comparable to Giessen’s chemistry factory, Foster’s school of physiology, or Wundt’s psychology lab. Previous chapters have therefore studied those elements considered fundamental to a proto-typical research school: the director, his style, money, students, the research programme, laboratory techniques, and publication. In the chapter we return to these elements, as a guide to help us understand in what direction the different parts of the school went after Crichton-Browne left. It is through students, specially trained before taking their work to new pastures, that the ideas and practices of a research school are transmitted beyond their original location. Wakefield trained men for asylum work; thus for all its contributions to the development of neurology, it was in asylums that most of its recruits actually continued.

The chapter begins with the Asylum itself, asking what became of the institution after Crichton-Browne left. Section II considers the practices and output from Wakefield in the final quarter of the century, during which time it remained under the directorship of two men who had trained under Crichton-Browne, Herbert C. Major and William Bevan-Lewis. They continued the asylum’s work, contributing to new developments in cerebral localisation, but the pressures of economy and increasing patient numbers continued to bear down, as they did across all asylums. In Section III attention is turned to all the men who had fulfilled the lower positions of clinical clerks or medical assistants in the period 1866-76, to ask what became of them and what, if any, influence they had beyond the West Riding. This prosopographical study shows how the research school was successful, at least, in training young men for asylum work. Finally Section IV returns to cerebral localisation, the idea around which the research programme and techniques of the asylum were built. The chapter follows its development in closing decades of the century through the new journal *Brain*, founded in 1878, which can be understood as a successor to the in-house journal, the *West Riding Lunatic Asylum Medical Reports*.

II. Continued Function: Brain Research in the Asylum after 1876

In the summer before he left Wakefield, Crichton-Browne had been 'allowed sixty days of leave of absence in the months of April May and June... he providing for his duties.'[547] Whether it was taken as a break from his tiring role, or an indication that other interests had begun to occupy his time, it gave Herbert C. Major an experience of running the Asylum, and consequently the Committee had no qualms in appointing him on a full-time basis when Crichton-Browne resigned, they seeing no need to advertise the job externally. Major had originally joined the Asylum in 1872, having graduated from Edinburgh, and went on to earn his M.D. from the same university in 1875, gaining a gold medal for his thesis *Histology of the Brain in Apes* with research conducted whilst he was in employment in the West Riding. Soon after Major took control, and in accordance with his recommendation, William Bevan-Lewis was promoted to third assistant medical officer and pathologist at the Asylum, and eight years later, he in turn was elected to replace Major without a single dissenting voice. Bevan-Lewis, a Welshman who had trained in London, had spent two years at the Buckingham County Asylum, then a few years in private practice, before heading to Wakefield in 1875 to take advantage of the research opportunities Crichton-Browne's institution afforded. There was stability in the Committee of Visitors too, with Colonel Walter Spencer Stanhope – the chairman who oversaw much of Crichton-Browne's endeavours – remaining head of the Committee until the early years of the twentieth century. In the collection of information in records, which Chapter Three argued was central to the research school, there were both continuities and breaks between Crichton-Browne and his successors. All three men continued to use the records, as upon Crichton-Browne's resignation, the Committee resolved that he,

> after his direct connection with this asylum shall have ceased, be allowed access to and the use of the medical records kept here during his superintendence at all reasonable times.[548]

This resolution, presumably requested by Crichton-Browne himself, was evidence of the value of the Asylum's records, and an indication that they were utilised by him in his later publications. The medical case books and post-mortem reports continued in the same volumes and the same manner into the new century, but there were subtle changes which reflected a difference of approach under the different men, and also new imperatives in research.

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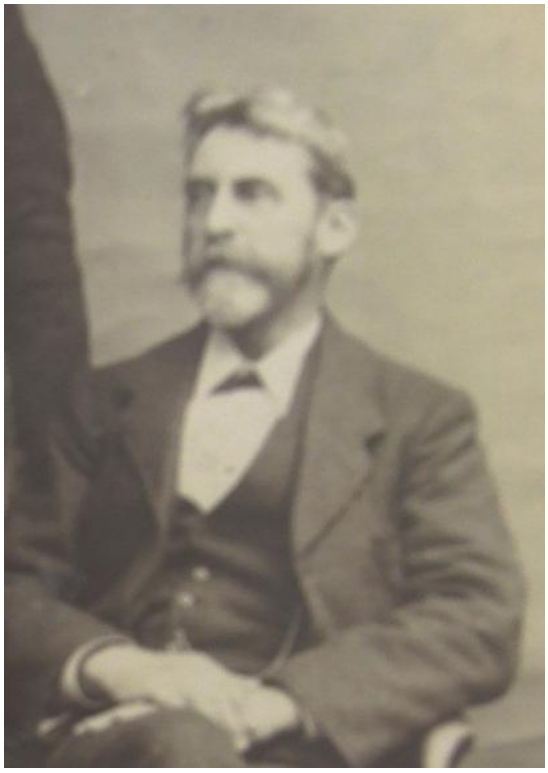
[547] 'Committee of Visitors Minute Book', 17th March 1875 (WYAS, C85/1/1/3).
[548] 'Committee of Visitors Minute Book', 27th January 1876 (WYAS C85/1/1/3).



Figs. 5.1 and 5.2: Herbert Coddington Major (left) and William Bevan-Lewis (right)
[WYAS, C85/1385]

The brain remained of central concern, with Major and Bevan-Lewis as committed to a somatic understanding of mental disease as was Crichton-Browne. The indexing of special cases of brain disease in the post-mortem records, however, ceased after 1880. This practice had reflected the research activities of the Asylum, allowing medical men there to quickly scan and compare all patients with similar lesions or defects in brain condition for special study. The change in practice appears to have occurred when Bevan-Lewis passed on pathological duties to John Hunter Arbuckle, a man whose interests were more surgical (both before and after Wakefield he fulfilled roles as a hospital surgeon). Indeed, in 1884, when the role of pathologist needed to be filled again, the Committee requested Bevan-Lewis 'to prepare a statement of the duties of the pathologist which at present are not clearly defined.'[549] The appointment of a pathologist at Wakefield had been an innovation, one which Crichton-Browne had argued was important for all asylums if they were to deepen their understanding of the nature and causes of insanity. It had also been a rather open category: since the role was a new one in the 1860s, it had never been defined, even though it was a central cog in the mechanism of the research school. By the 1880s specialist pathologists had become more common in many county asylums, and the responsibilities of

[549] 'Committee of Visitors Minute Book', 22nd November 1884 (WYAS C85/1/1/3). Dr William Dudley was appointed to the role.

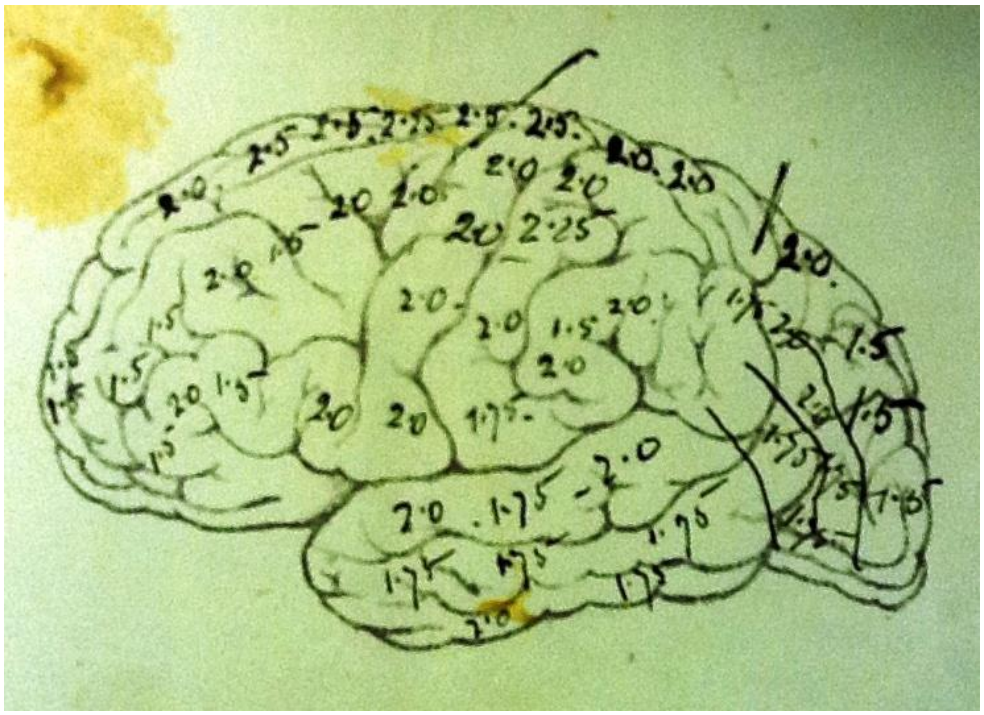
the job became more formalised. Wakefield men continued to lead these discussions. F. St. John Bullen, pathologist to the West Riding in the 1880s, spoke to the British Medical Association on the 'means by which the personal element in recording may be negatived', and Francis O. Simpson, who took on pathological duties in Wakefield in the 1890s, wrote on a scheme by which the macroscopical examination of every brain should be recorded and published by asylums.[550] Both were led in this direction by Bevan-Lewis, who, it will be seen, was a leading figure in cerebral pathology.

Images of brains continued to appear in post-mortem reports and, as it was becoming cheaper and easier to conduct, photography was utilised more frequently in capturing those brain images. Pencilled-on diagrams of brain lesions were still used in special cases, and a thorough observation and weighing of each brain adorned every report, although it must be noted, they were not quite as thorough as they had once been, with less detail on the specific appearance of the various parts and more on its general condition. From the mid-1880s, however, a new development in brain recording was seen in the reports. On occasion – around 10% of reports – detailed measurements of the sizes of the different regions of the cerebral cortex were taken. Working from the first frontal lobe at the front of one of the hemispheres, and moving all the way to the occipital lobe at the rear of the brain, each region was systematically measured in distance. It is not immediately obvious to what end these measurements were taken – there does not appear to be any obvious attempt to link these sizes with the living patient's symptoms – but they do reflect developments in understanding of the brain in the period, and particularly the microscopical interests of both Major and Bevan-Lewis.

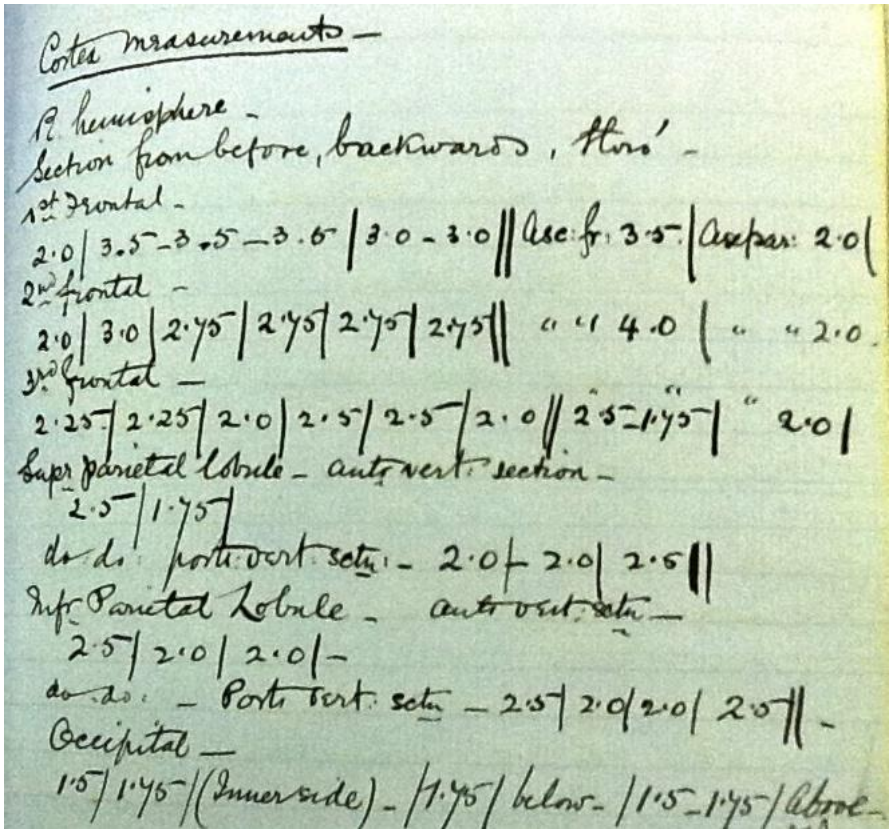
Both men were pioneers in cytoarchitectonics, the comparative study of the cellular appearance of different areas of the brain, which was a meeting point between anatomy, histology and cytology. The field of cytoarchitectonics is now seen as having come of age in the later work of the German histologist Korbinian Brodmann and his 1909 text *Comparative Localization Studies in the Brain Cortex,* which presented a topography of the human cortex that divided the brain into 47 different areas (a classification that is still generally adopted today.) The neuro-histological works of Major and Bevan-Lewis at Wakefield should be seen as of fundamental importance in the early development of such studies. Unlike most other work conducted in Wakefield, studies in the developing field cytoarchitectonics were not strictly pathological – they were not dependent on the observation of lesions or any particular diseases of the brain. Instead, as the measurements from the post-mortem reports demonstrate, they relied on precise and systematic recording

[550] Bullen (1889); Simpson (1898).

of individual cases, which would then later be analysed and compared to many other samples.



Figs 5.3 and 5.4: measurements (in inches) of various regions of the cerebral cortex
[WYAS, C85/1113]



Major had presented a very brief but intriguing case to the *JMS* in 1874, whilst he was still assistant to Crichton-Browne. He had been given the brain of a man who had died of a compound fracture to the leg at the Leeds General Infirmary, a patient of no known mental deficiencies. However, as a result of his attention to detail, Major found that whilst the brain appeared perfectly normal on first inspection, 'the fact was established beyond a doubt that, in many instances, the pyramidal nerve cells of the cortex were morbidly affected.'[551] His conclusions from this work were that cerebral damage needn't always be consistent, nor lead to impairment, and that microscopy might reveal details that usual inspections miss. The paper is even more relevant in the light of discoveries that Bevan-Lewis was to make just a few years later, when he confirmed that the pyramidal cells formed a continuum from the motor cortex to the lowest centres of the brain. Abnormal pyramidal cells could well lead to impaired motor control, and even explain the man's accident in the first place.

Bevan-Lewis was the histological protégé to Major at West Riding, as well as being his successor. In one of his obituaries, his successor as Wakefield, J.S. Bolton, wrote of Ferrier and Bevan-Lewis that

> for many years the former overshadowed the latter as regards public recognition. It is nevertheless true that these two workers were equally instrumental by their separate methods of approach in laying the foundations of our knowledge of cortical localization, and that the histological descriptions of Bevan-Lewis, both in precision and general accuracy of detail, are as true to-day [1930] as when published over forty years ago.[552]

Such high praise can at least partly be understood by the position Bolton was writing from (a fellow histologist, and successor to Bevan-Lewis), but should not lead us to think Bevan-Lewis's achievements were entirely ignored. Indeed, he was deemed far more important in his own time than he has subsequently been seen by scientists and historians since.

It was less for his novel researches, and more for the textbooks he authored, that Bevan-Lewis will have been familiar to medical men in the late-nineteenth and early-twentieth century. In 1882 he published *The Human Brain: Histological and Coarse Methods of Research – A Manual for Students and Asylum Medical Officers*, a 160-page book which gave a step-by step guide to examining human brains and conducting measurements and observations on them. The book was an explicit acknowledgement of the fact that observation of brains had now become a regular practice in asylums, and it is little surprise that someone from the West Riding should produce a guiding text. The *Manual* adhered to Major's principles of thorough and minute investigation, from broad analysis to

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[551] Major (1875) pp. 276-277.
[552] Bolton (1930) pp. 383-388.

microscopical study, and represented the developments that had been made in cerebral study in recent years, including those which emanated from the laboratory at Wakefield.

Bevan-Lewis truly cemented his position as an authority in psychiatry with his second major work, *A Text-book of Mental Diseases: with special reference to the pathological aspects of insanity* (1889; 2nd end. 1899). This book, which Crichton-Browne referred to as Bevan-Lewis's 'magnum opus', bore the hallmarks of the programme of research that had been instituted at the Asylum. It was even dedicated to Crichton-Browne,

> [in] admiration of the vigorous intellect, commanding eloquence, and untiring energy brought to bear on the scientific aspects of psychological medicine during his directorate of the West Riding Asylum; and in keen appreciation of his wide-spread sympathies and generous impulses.[553]

What really gave Bevan-Lewis's work a distinctly Wakefield flavour was its absolute emphasis on the physical side of mental diseases. He wrote that it was his

> special object to present a *resumé* of our knowledge of the structure and connections of the cerebro-spinal nervous system, of the architecture of the cerebral hemispheres, and more especially of the cortical envelope as the essential organ – the material substratum – of Mind; and to afford a concise account of the morbid changes found in the brain of the insane, as viewed in the light of recent research.[554]

His reason for doing so was that a 'disproportionate amount of attention has been paid in former text-books to the clinical aspects of Insanity,' so his book dealt 'more fully with the organisation of the material substratum of the mind, and with the evidences of morbid change to which it is prone.'[555] This set it apart from Bucknill and Tuke's much more famous *Manual of Psychological Medicine* (1858-1879) – the standard text for British psychiatrists mid-century – and even Tuke's later edited *Dictionary of Psychological Medicine* (1892), which itself became a standard text in the immediate years after its publication. Though they had been guided by the 'great principle that mental disease depends solely upon cerebral conditions', Bucknill and Tuke built upon this principle only in a general sense, discussing, for example, how inflammation or blockages in parts of the cerebral matter could lead to mental derangements. The point made by Bevan-Lewis was clear: other works by Bucknill and Tuke, or from Bristowe, Sankey, Clouston and Savage, all paid too much attention to the clinical observation and diagnosis of mental illnesses, without clearly delineating how any particular form of insanity was correlated to, and caused by, specific changes in the cortical structure. All mental illness was, after all, the

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[553] Bevan-Lewis (1889).
[554] *Ibid.*, 'Preface'.
[555] *Ibid.*, 'Preface'.

result of changes in the cerebral matter, and it had been the aim of the programme started by Crichton-Browne to prove and describe this relationship.

At a little over 600 pages, the book was of an impressive length, and all the more impressive given that it was authored alone. Beginning with around 140 pages of anatomical and histological descriptions of the central nervous system, only then did it get to the definitions and diagnoses of the various forms of insanity. Over half the book was filled by this section, before a third and final part on the pathological appearances of mentally ill patients, where specific cellular damage was equated with particular conditions such as epilepsy, general paralysis and alcoholism. As a histologist whose work had contributed to the theory of cerebral localisation, the approach taken by Bevan-Lewis is unsurprising, and it stands in contrast to the more holistic descriptions given in the popular work of Tuke, who had argued that pathological classifications alone were inadequate in psychiatry, since 'our knowledge is too limited to allow of this principle being adopted.'[556] Both, however, along with the rest of British psychiatric theory, were countered by the ideas of Emil Kraepelin, which took precedence throughout European psychiatry from the mid-1890s. With the rise of Kraepelinian diagnoses, which necessitated paying close attention to the physical symptoms and outcomes of patients, the version of psychiatry which made explicit links to brain anatomy and pathology – of which Bevan-Lewis's was a most strident example – was usurped. Bevan-Lewis's *Textbook* was perhaps the final flourish of the West Riding's Research School, as the vision of an experimentally-informed but pathologically based account of mental illness. Scull has argued that

> The links between physicalist theorizing and alienists' practice were tenuous in the extreme, with their pathological theories bearing little discernible relationship to the therapeutic techniques they employed. [...] What masqueraded as inferences from the latest developments in neurology were in fact simply the restatement of 'old doctrines in a novel idiom'.[557]

In Wakefield at least, this was not true: rather, their inferences underscored, and were a part of, the latest developments in neurology.

The population of the Asylum remained constant during Major's reign, at around 1,400 patients. The associated Wadsley Asylum – a satellite of the Wakefield institution that had opened in 1872 – continued to grow and take on many of those cases which would otherwise have been directed to Wakefield, though this was an arrangement which immediately caused concern to Major. He noted in April 1876 that

> the accommodation at Wadsley as it now stands must shortly be filled up, and as from the unfavourable nature of most of the cases admitted, in the male department, I can hardly expect the

[556] D.H. Tuke (1892) p. 47.
[557] Scull (1991) p. 239.

> rate of our recoveries to continue as high as I have stated it to be, it appears inevitable that something will have shortly to be done to meet the difficulty.[558]

His suggested solution was two-fold. Firstly, 'to limit the admission to such cases as are of a severe present and dangerous character', having milder cases taken directly to their respective workhouses or finding temporary accommodation in other asylums; and second, to actively remove chronic and apparently harmless patients from the asylum, and taken to the workhouses or to the custody of their relative when it could satisfactorily be arranged.[559] Such tactics were employed at other asylums too, in response to the ever-growing numbers being committed as lunatics. This growth was largely attributed to the funding of pauper lunatics who, following the introduction of a Capitation Grant in 1875, could be transferred from workhouse to asylum at virtually no extra cost to the Unions.[560] Major remarked that the Grant 'had at least much to do with bringing about this result', writing a sternly-worded letter to the Lunacy Commission in 1882. However, he thought it 'doubtless also [that] the prolonged depression of trade and subsequent reduction of wages have played their part' in chronic patients being admitted who would once have been cared for at home.[561]

Parish overseers may have become more willing to send their paupers to the asylum, but the men running the establishments struggled to accommodate them. The situation in Wakefield was perhaps even worse than most, as in providing for such a large and well populated area of the country, Major complained that

> the Wards have remained occupied with chronic cases, the infirm, the imbecile, the epileptic, to a degree beyond what is found, I have reason to think, in the majority of County Asylums, and which indeed would hardly be credited by those who have not actually witnessed what is described.[562]

His attempts to move many of the chronic, infirm, imbecile and epileptic patients out of the asylum and back to the workhouses or to their families met with a measure of success, and out-houses were constructed in nearby grounds to provide for those harmless patients who needed only minimal medical supervision. However, after several of their visits the Commissioners in Lunacy still commented on the over-crowding in Wakefield, noting that there were 'many patients here, as in most Asylums, who are suitable cases for treatment in a well-managed Workhouse.'[563]

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[558] 'Medical Director's Journal', Wakefield, 27th April 1876 (C85/1/13/3).
[559] *Ibid.*
[560] See Bartlett (2002).
[561] 'Report of Medical Superintendent', Wakefield, May 1881 (WYAS C85/1/12/4) pp. 13-14.
[562] 'Report of the Medical Superintendent', April 1884 (WYAS C85/1/12/4) pp. 14-21.
[563] 'Report of the Commissioners in Lunacy', 30th April 1882 (WYAS, C85/1/12/4).

According to Todd and Ashworth, Major had 'undoubtedly been feeling the strain of directing the Asylum during a particularly difficult period', and it is perhaps in this light that his departure from the Asylum should be seen. Like Crichton-Browne, he also took a two month leave of absence shortly before he resigned his position, in October 1884. Major cited grounds of ill health for his departure, though the following year he was appointed Honorary Physician to the nearby Bradford Infirmary, and remained there until 1897. This represented a significant step-down in career terms, and is probably the main reason for his relative obscurity today. The problems of the Asylum's management thus passed on to Bevan-Lewis who, in 36 years as Superintendent achieved a far greater status in the profession than his predecessor. The Asylum itself also continued to grow. The population at Wakefield swelled to over 1,500 by 1890, while further new satellite institutions were created in Menston (1888), Stanley Hall (1901), and Storthes Hall (1904), as well as several more out-houses, together all operating under the title of West Riding Lunatic Asylum. The institution at Menston became a significant location in its own right, growing to accommodate over 1,000 patients in the twentieth century, whilst the acute ward at Stanley Hall was notable as the first British institution specifically aimed at dealing with children. Since Crichton-Browne's administration the mixing of child idiots with adult patients had concerned the Committee and Commissioners alike, but it was only in Bevan-Lewis's reign that a separate establishment for such long-term 'incurables' was devised.

Throughout Major's and Bevan-Lewis's time, as in former years, 'drugs were extensively used and nervine sedatives freely prescribed,' in the belief that, 'given judiciously, their effects in a large class of cases are distinctly beneficial.'[564] Outsider criticisms of drug use, which had existed since the middle of the nineteenth century, did not deter its proponents in Wakefield, although there were no significant developments in the chemical regimen during this period.[565] There was, though, a break from Crichton-Browne's strictures with regards to alcohol, as these two successive Superintendents gradually reduced the supply of beer to patients to minimal levels.[566] In 1878, Major had been authorised in his discretion to discontinue for one quarter the supply of beer in two wards of non working patients on each side of the institution, his belief being – as he repeated in every one of his annual reports – that there was a strong relationship between alcoholic excess and insanity. His own statistics showing that around 15% of cases were in some way

[564] 'Report of the Medical Superintendent', 30th May 1879 (WYAS C85/1/12/4) pp. 15-17.
[565] The same basic drugs, such as bromides, chloral hydrate etc continued to be used – it is generally regarded that therapeutic use of drugs did not really change until the introduction of barbiturates around the time of the First World War. See Shorter (1997).
[566] Crichton-Browne (1930) p. 237, wrote of alcohol: 'To say nothing of its efficacy in the medical treatment of many morbid conditions – as that is in dispute – it cannot be denied that, with all its risks, it has, as an anodyne, to an inestimable amount alleviated human sufferings, mental and bodily, while it has also conduced to social enjoyment and stimulated the fancy of the poet.'

attributable to drinking.[567] Undoubtedly, such an apparent correlation between alcohol and insanity would have suggested the removal of beer, especially at a time when the Asylum's therapeutic armoury was struggling with the great number of patients; and moreover this was a time when the temperance movement in Britain was gaining traction in spreading its message of the dangers of alcohol. In his *Textbook*, Bevan-Lewis also devoted a large section to the topic, declaring that 'no poison, except the virus of syphilis, plays so extensive a role in the morbid affections and degeneration of the tissues.'[568] However, the minutes of the Asylum Committee suggest that cost was an over-riding factor in their decision, with authorisation being given to Major to continue his experiment after the 'attention of the committee [had] been called to the price of the beer purchased for use in the asylum.'[569] The Commissioners in Lunacy remained quiet on this development.[570]

III. The Wakefield Cohort: Officers and Clerks outside of the Asylum

When the Commissioners in Lunacy visited Wakefield in 1877, they noted that '[at] present there are not any Clinical Assistants here'.[571] This observation was a result of timing: the asylum did generally continue to employ young medical men to engage in research throughout the reigns of Major and Bevan-Lewis, maintaining another of those innovations which had been a part of the Research School under Crichton-Browne. But the records do indicate that the numbers taking on these roles were greatly reduced after 1876, with only sporadic mention given to them in Director's journals and annual reports. As we saw in Chapter Two, the appointment of Clinical Clerks at Wakefield was one of the key innovations that allowed the Asylum to conduct medical research at the same time as serving its main function in treating the insane. Their work also allowed the superintendent and his assistant medical officers time to engage in more of their own research too. Fewer Clinical Clerks in operation meant, again, less emphasis on novel medical research.

After 1876, when the Asylum's *Medical Reports* were discontinued, the efforts of the Clerks also became less visible, as there was no longer an obvious channel through which their research could be advertised. More senior men, in the roles of Superintendent or Medical Assistant, continued to publish their studies in the *Journal of Mental Science* or, after 1878, the new journal *Brain*, but younger and less-esteemed doctors are likely to have found it more difficult to produce published material. Nevertheless, as we have seen in the

[567] 'Committee of Visitors Minutes', 31st October 1878 (WYAS C85/1/1/3).
[568] Bevan-Lewis (1889) p. 327.
[569] 'Committee of Visitors Minutes', 30th January 1879 (WYAS C85/1/1/3).
[570] When the removal of alcohol was copied at Colney Hatch asylum, however, the Commissioners criticised the step taken, stating the asylum 'was not a reformatory', and teetotalism punished all patients for the sake of a few.
[571] 'Report of the Commissioners in Lunacy', July 1877 (WYAS, C85/1/12/3) p. 18.

previous section, research did continue throughout the nineteenth century. In April 1877, Major was authorised by his Committee

> to apply to the Home Secretary for the registration of the small pathological laboratory within the West Riding Asylum at Wakefield for the performance of experiments on animals under the act 39 and 40 Vict, Cap. 77. [and also] authorized to apply for licenses for the performance of experiments under the act 39 & 40 Vict Cap 77 by Dr William Bevan Lewis and such other member of the Medical Staff of the Asylum as he shall deem fit. [572]

As the previous chapter explained, the Cruelty to Animals Act 1876 – which was in large part stimulated by activities at the West Riding Lunatic Asylum – put much tighter controls on the conducting of animal experimenting in Britain, and Wakefield was one of only a handful of sites given permission to continue such work. Its license was requested only on 'condition that all such experiments be limited to the administration of drugs by injection or otherwise without cutting further than may be necessary for the use of the sphygmograph under anaesthesia', indicating that the tests were conducted only in testing the physiological effects of chemical agents. No more stimulation or ablation experiments were to be conducted. In part a result of its vivisection licence, the Asylum laboratory remained a prestigious location, and in his superintendency Bevan-Lewis welcomed doctors from other establishments around Britain, Ireland and even America to conduct research in his institution.

Several historians have noted that throughout the nineteenth century, psychiatry struggled to gain the professional status and esteem of other medical specialties, and was hindered not least because specific instruction in mental illnesses was rarely included in medical training.[573] Teaching in psychiatry did not in fact become standard across the country until the final years of the century. Thus, at a time when medical training in Britain had purportedly become much more rigorous and systematic, following the 1858 Medical Act, the employment of clinical clerks under Crichton-Browne was essentially an old-fashioned apprenticeship scheme. Young doctors were in competition for a limited number of spaces at the Asylum – generally only two were present at a time – and Crichton-Browne had full control over who was accepted. He was part of the last generation of asylum superintendents in possession of such autocratic control of their own institution. In a period when such an opportunity for research and training was rare, these appointments were much sought after. J. Wilkie Burman, who joined as a Clerk, had actually taken a lower position at Wakefield than he had previously held, which to Crichton-Browne, displayed 'his intelligent appreciation of the opportunities for study and observation which the West

[572] 'Committee of Visitors Minutes', 26th April 1877 (WYAs C85/1/1/3).
[573] Bynum (1991); Russell (1988).

Riding Asylum affords.'[574] No money appears to have changed hands for these places, although a good word or name did not hurt: Herbert Major had himself arrived as an 'approved student of Professor Laycock's class of medical psychology', whilst Henry Sutherland was later deemed to have acquitted himself 'in a manner worthy of his name and antecedents.'[575] The uniqueness and significance of the Wakefield system was highlighted when Oscar Woods – one of the men who trained under this scheme – died, with *JMS* noting in his obituary that he 'began his studies in insanity, like so many men of his time, at the West Riding Asylum, Wakefield.'[576]

As was alluded to earlier in this chapter, the recruitment and training of students was one of the key elements of any research school. When students move on, they take the practices and ideas they have learned with them. The influence of a research school is therefore gauged not just by its own institutional success, but by the propagation and success of its students – the triumph of Wilhelm Wundt's experimental psychology, for example, is evidenced not just from the growth of the programme in Leipzig, but in light of the fact that students trained in his laboratory dominated the field in the latter decades of the century. With regards to the students of Wakefield then, as Neve and Turner have pointed out, '[t]he subsequent careers of these young men have not been fully researched, although several did reach senior asylum positions.'[577] In fact they underplay this point: both individually and as a group, these 'young men' have not been studied at all. Whilst we cannot possibly give a full account of each of them in this space, a collective biography can help begin to redress this historical deficiency.

There is no definitive list of precisely who served as a clinical clerk under Crichton-Browne. Lower appointments were made on an informal basis, with the Superintendent only mentioning these men when writing reports for his Committee. No employment register was kept before 1876, and in any case the Clinical Clerks were unpaid researchers. All positions at the level of Medical Assistant or above were first ratified, but these also were only recorded in the correspondence between Crichton-Browne and the Committee. In the following table is a list of all those known to have worked between 1866-76 as either medical officers or clinical clerks.[578] The decision has been made to consider both together, as several men fulfilled both posts, and both were involved in the same research project.

[574] 'Medical Director's Journal', 27th January 1875 (WYAS C85/1/13/3).
[575] Reported in 'Reports of the Medical Superintendent' (WYAS C85/1/12/2-3).
[576] [Anon.] (1906a) p. 841.
[577] Neve and Turner (1995) p. 407.
[578] Although these two positions aren't the same, I have put them together as they were both involved in the same activities and imbued with the same research school ethos.

Name	Ann. Rep.	Med. Rep.	Present	Qualifications	From	To	Under JCB	MPA	*JMS*	Brain	Prov.	Other
Charles Aldridge	68, 70, 72	71, 72, 74	68? - 72	M.B. 1868, C.M. 1872, M.D. 1876 (Abdn.); L.R.C.P. 1868 (Lond.)	[Univ. Abdn.]	Med. Sup. Plympton House Asyl., Plymouth.	CC; JMO; AMO	Yes	0	0	Yes	BMJ, Med. Rec., &c.
John Hunter Arbuckle	76	75	? -	M.B., C.M. 1870, M.D. 1872 (Glas.)	Vis. Surg., East Disp. Liv.	House Surg. Stanley Hosp. Liv.; AMO & Path., WRLA	CC; AMO	[No]	0	0	Yes	BMJ, Med. J.
G.W. Baroll	73		73 – 73				CC	[No]	0	0		No mention in Medical Directory, presumed to be a scientist
William Thomas Benham		74		M.B., C.M. 1871, M.D. 1873 (Abdn.) M.R.C.S., L.S.A. 1871 (Lond.)	AMS Bris. City & Co. Asyl.	St. Michael's Hosp., Bristol	Path.; AMO	Yes	1	0	Yes	In 1875 Directory, then disappears
James Wilkie Burman	71, 73	71 - 73	?, 71 - 73	M.B., L.R.C.S. 1868, M.D. 1871 (Edin.)	AMO Devon Co. Asyl.	MO & MS Wilts. Co. Asyl.	CC; AMO	Yes	5	0	Yes	Appears absent from Directory after 1875
William Crochley Sampson Clapham	72, 73	73, 76	72 - 73	M.A. Cantab; M.R.C.S. 1871, L.R.C.P. Lond 1872; F.L.A.S.	[AMO Hoxton House Asyl.]	Phys. Grange Hall Asyl.; Surg. Seaman's Hosp. Greenwich; &c.	CC	[No]	2	2	Yes	In various medical & non-medical journals
Edward Maziere Courtenay	71, 72	72	71 - 72	A.B. T.C.D., M.B., M.Ch. 1871 (T.C.D.)	[T.C.D.]	AMO Derby County Asyl.; MS Dist. Asyl., Limerick.	CC	Yes	2	0	Ireland	BMA member
William Watson Dove	70	71	70 – 07/71	L.R.C.P. 1870 (Edin.); M.R.C.S.1870 (Lond.)	[Univ. Edin.]	AMO Somerset Co. Asyl.	CC	Yes	0	0	Yes	No information after 1875

Edwin Churchill Pigott Fox	70	72	70 – 02/71	M.B., C.M. 1868 (Edin.)		AMO Stafford Co. Asyl.	CC	[Yes]	0	0	Yes	Seems to have been unconnected after job at Bristol
John Charles Galton	73	73	73 – 73	M.A. 1866 (Oxon), M.R.C.S. 1866 (Lond.), F.L.S.		Lecturer Char. Cross Hosp.; Surg. Hessian Serv. Franco-Prussian war, &c.	CC	[No]	0	1	London	Can't tell what he did at diff times, or where he was before/after Wakefield
William Lawrence	70	71	05/70 – 70?	MB		Asst. MO Chester County Asyl.	CC		0	0		
Robert Lawson	76	74, 75, 76	? -	M.B., C.M., L.M. 1871, M.D. 1881 (Edin.)	Asst. To Prof. Med. Psychol. Edin.	Deputy Commissioner in Lunacy for Scotland	AMO	[Yes]	1	5	Scotland	Lancet, Practitioner, Med. Times gazette &c.
Edward George Levinge	73		73 - 73	M.B., L.R.C.S.I. 1873 (Dub.)	Asst. Surg. Meath Hosp. Dub.	AMO Newcastle Bo. Asylum; AMO Hants. Co. Asyl	CC	Yes	0	0	Yes	
William Bevan-Lewis	76	75, 76	75? -	L.R.C.P., M.R.C.S., L.S.A. 1868 (Lond.)	AMO Bucks. Co. Asyl.	MO & MS WRLA	CC; Path.; AMO	Yes	11	19	Yes	Trans. Roy. Soc., Med. Times. Gaz., J. Anat. Physiol. &c.
John Lowe	71, 72	73	71 – 71, 72 -	M.B., C.M. 1871 (Edin.)	[Univ. Edin.]	Asst. MO Durham County Asyl.; Paroch. MO Coupar-Angus & Cargill	CC; returned as CC	[Yes]	0	0	Scotland	Lancet, Practitioner, Med. Times gazette &c.
Herbert C. Major	71, 73	72 -76	08/71 -	M.B., C.M. 1871, M.D. 1875 (Edin.)	Univ. Edin.	MS West Riding County Asyl.	CC; Asst. MO	Yes	5	0	Yes	Lancet, J.Anat. Physiol.
Charles Henry Mayhew		71		L.R.C.P., M.R.C.S. 1869 (Lond.)	[Asst. Surg. Stockport Infirmary]	[Asst. Res. MO Chorlton Union Hosp.]	CC	[No]	0	0	Yes	
T.W. McDowall	72, 73	73	72 -	M.D. 1866, L.R.C.S. 1870 (Edin.)	Asst. Phys. Dist. Asyl. Inverness	MS Northld. Co. Asyl.	Path.; AMO	Yes	40	0	Yes	

John Merson	73, 76	74-76	73 -	M.A. 1866, M.B., C.M. 1870, M.D. 1874 (Abdn.)	AMO Northld. Co. Asyl.	MS Hull Bo. Asyl.	Path.; AMO	[Yes]	0	0	Yes	
Samuel Mitchell	67, 68, 70, 72	71, 72	11/67 - 72	C.M. 1865, M.D. 1867 (Edin.)	[AMO Inverness Dist. Asyl.]	MS Sth. Yorks. Co. Asyl.	AMO; MS Mt. Pleasant	Yes	0	0	Yes	
C.F. Newcombe	73	75	73 -	M.B., C.M. 1873, M.D. 1878 (Abdn.)	[Univ. Abdn.]	AMO Lancaster Co. Asyl.	CC	[Yes]	0	1	Yes	
Patrick Nicol	70	71, 72	69? – 70?	M.A. 1866 M.D. 1871 (Abdn.)	Phys. Bradfod. Infirm.	AMO Sussex Co. Asyl.	CC; temp. MS Mt. Pleasant	[No]	0	0	Yes	J. Cutan. Med., B. and F. Med/ Chir. Rev.
George Henry Pedler	70	71, 72	69? – 05/70	L.S.A. 1868, M.R.C.S. 1869, L.R.C.P. 1871 (Lond.), F.O.S.	[Asst. House Surg. King's Coll. Hosp.]	[Private London Practice]	CC	No	0	0	London	
Joseph W. Plaxton	76		76 -	M.R.C.S., L.S.A. 1869 (Hull)	House Surg. Hull Infirm.	MS Lunatic Asyl. Ceylon	AMO	[No]	6	0	Ceylon	
Ernest Louis Tyler Smith	73		73 - 73	B.A. 1870 (Cantab), L.R.C.P. 1874, M.B. 1875 (Edin.)	[Univ. Edin.]	[Hon. Phys. Brighton & Hove Disp.]	CC	[No]	0	0	Yes	Author of 'Influence of Alcoholism in the Causation & Aggravation of Disease
Henry Sutherland	71	71,72,73, 76	02/71 – 08/71	M.A., M.B. 1869, M.D. 1872 (Oxon), M.R.C.P. 1870 (Lond.)	[Univ. Oxf.]	Phys. St. George's, Hanover Sq.; Lecturer on insanity, W'mstr hptl.	CC; AMO	Yes	5	0	London	J. Psychol. Med, BMJ, Proc. R. Soc. Med. Chir., F.R.M.C.S.,
George Thompson	67, 68, 70, 71	71, 72	11/67 - 71	M.R.C.S. 1867, L.R.C.P. 1868 (Lond.), L.S.A. 1869 (Leeds)	[Univ. Leeds]	MS Bristol City Asyl.	AMO	Yes	2	0	Yes	

John Augustus Michael Wallis		75		L.R.C.S.I. 1866, L.M., L.R.C.P. 1867 (Edin.), M.B. 1875 (Abdn.)	[Resident Phys. Mercers' Hosp. Dub.]	MS Hull Bo. Asylum; MS Whittingham Co. Asyl. Lancs., &c.	AMO	Yes	1	0	Yes	BMA member
J. Bywater Ward		71		B.A. 1867, M.B. 1868, M.D. 1872 (Cantab)	[Asst. House Surg. Sheff. Gen. Infirm.]	AMD Warwick Co. Asyl.; MS Warneford Asyl. Oxf.	CC	[Yes]	0	0	Yes	
C.E. Watson	73		73 -				CC	[No]	0	0		Presumed scientist
John Wilcocks F. Watson	71		07/71 - 71	L.S.A. 1871 (Lond.)	Univ. Lond.	Heigham Hall Private Asyl. , Norwich	CC; resigned due to ill health	[No]	0	0	Yes	Appears to have quit shortly after leaving
W. Bryan Wood	72		72 – 72?				CC		0	0		Presumed scientist
Oscar Thomas Woods	72		72? – 72	B.A.T.C.D. 1868, M.B. 1869, M.D. 1875 (Dub.)	House Surg. Meath Hosp. Dub.	AMO Warwick Co. Asyl., M.S. Dist. Asyl. Killarney	CC	Yes	7	0	Ireland	

Most were mentioned in Crichton-Browne's own annual reports to the Visitors, and most also went on to produce one or more articles for the *Medical Reports*: it is from these two sources that the list was made, with further details added where available from the Medical Register, *JMS*, *Lancet*, *BMJ* or any secondary sources. Several men appeared in one but not the other of these two main sources, meaning the overall list may be incomplete. This is made even more likely by the fact that the volumes of annual reports are themselves incomplete.[579] Nevertheless, the list of 33 men is substantive, and representative enough, to form the starting point of a prosopography.

All but three of the men are known to have had some form of medical qualification (G.W. Baroll, C.E. Watson and W. Bryan Wood). These men, who could not be identified in the Medical Register, may well have been science graduates. Of the 30 for whom a medical affiliation is known, eleven had at some point gained a qualification in London, 10 in Edinburgh, 6 in Aberdeen, 5 in either Oxford or Cambridge, 3 in Dublin, and 1 each in Glasgow, Leeds and Hull. The whereabouts of 27 of these men is known before they came to Wakefield: for 11 of them, it appears that Wakefield was their first employment outside of university, 9 came from a position in an infirmary or hospital, and 7 from another asylum. Of the 30 whose occupations have been traced after they fulfilled their initial employment in the West Riding, 26 went into an asylum or lunacy-related role, with the rest finding work in surgery or general medicine.[580]

None of these men have since appeared in the *Dictionary of Scientific Biography*, *Dictionary of Nineteenth-century Scientists* or the *Oxford Dictionary of National Biography*. That does not mean, however, that they did not go on to meet with success. Three went on to become President of the Medico-Psychological Association, the main body of psychiatrists at the time: T.W. McDowall in 1897, Oscar Woods in 1901, and William Bevan-Lewis in 1909. For all those 30 where information has been available, they went on to find employment in a medical setting soon after their role in Wakefield ended, indicating their time there did at least no harm to their reputations. Moreover, of those who found employment in a psychiatric setting, 18 went on to become Superintendents or Assistants within the English county asylum system. Given that there were around 40-45 county asylums in England and Wales in the period 1866-1876, each employing a medical superintendent and anything between one and four medical officers, we can gauge that the Wakefield cohort would have comprised a not inconsiderable fraction of total asylum

[579] In both the West Riding Archives and the Wellcome Library Collections, there are no annual reports for the years 1869 or 1874 (these are bound volumes, so these years were never included).

[580] Two went into 'lunacy-related' roles: one as a lecturer, and one as a deputy commissioner for Scotland. In cases where the men had more than one different job after Wakefield, it has not always been possible to ascertain the order in which these jobs were taken, so I have considered several future roles in my data.

workers. For example, assuming an average of three medical men at approximately 45 county asylums, then at a conservative estimate the cohort of 18 from Wakefield would represent around 13% of the total medical workforce in English county asylums. Moreover, it was not only in England where their presence was felt: several of Crichton-Browne's pupils ended up in asylums in Scotland, Ireland, India and even Ceylon.

It is telling, therefore, to see just how many of these men ended up in psychiatric practice. Such a fact does not appear to fit with the assumption that the influence of Wakefield was just in neurology. It is difficult to assert both that Wakefield's importance was in the development of neurology, and yet the majority of the men who trained there did not explicitly practice neurology. The point to be made, however, is that the Asylum's influence on psychiatry – that is, in the county asylums – was mediated through these men. Though the majority went on work in this supposedly humdrum world of asylums, it was the opportunity for scientific research brought them to Wakefield, and after which they consequently remained in asylum psychiatry. In the *Lancet's* 1925 obituary to William Bevan-Lewis, it was stated that 'few medical men half a century ago [1875] could have regarded an appointment at a lunatic asylum as offering great scientific opportunities'.[581] Yet they did, and in large numbers remained in those asylums.

To further this point we can look towards the publication output of the group. Five of the men contributed a total of 28 articles to *Brain*, the new journal of neurology, whilst thirteen of them together contributed 88 articles, letters and reports for *JMS*, and several also published in various medical journals including *Lancet, British Medical Journal, Medical Times Gazette* and others. Immediately then, this shows us that the cohort were a fairly productive and successful group, if visibility in print is used as an indicator. But more importantly, the disparity between contributions to *JMS* and *Brain* reinforces the point that the interests of the group were more psychiatric than neurological. Moreover, of those 28 articles published in *Brain*, 19 came from the pen of Bevan-Lewis – whose neurological credentials we have already discussed – and of the other nine, eight appeared within the first two years of the journal's existence. Finally, it should be pointed out that of those five contributors to *Brain*, only one other besides Bevan-Lewis worked in an asylum: C.F. Newcombe, of the Lancaster County Asylum, who penned a single paper. By the 1880s, if the former clerks and assistants of the Asylum were contributing to their field, then that field was not neurology. Instead, the pages of *Brain* came to be dominated by specialist neurologists, from Britain, America and Continental Europe, with a particularly large presence coming from the medical schools of London. Only Crichton-Browne and John Charles Bucknill, who were co-editors of the journal, and Daniel Hack Tuke, whose

[581] [Anon.] (1929) pp. 954-955.

Dictionary of Psychological Medicine was earlier mentioned, provided a significant psychiatric presence in the journal. None of these were still practising psychiatry in an asylum by this point.

Other clerks and assistants from the cohort, besides Major and Bevan-Lewis, did take aspects of the research school with them beyond Wakefield. When he left the Asylum in 1875 to take over as Medical Director at the nearby Hull County Asylum, John Wallis changed record keeping there in exactly the way Crichton-Browne had done in the West Riding. From the moment Wallis arrived in Hull, case books went from presenting unordered histories and anecdotes of the patient's life to systematic and thorough medical examinations, recording all symptoms and appearances relevant to their psychiatric diagnosis. He continued precisely the same headings as were adopted at Wakefield (see Chapter Three) as, besides recording information on their statement, certificate of insanity, history and mental symptoms, a check-up was conducted which assessed the state of all the body's major organ systems (digestive, respiratory, circulatory & genitor-urinary), before a precise outline of the diagnosis, prognosis, and treatments to be administered was given. When Wallis left Hull in November 1878, he was replaced by John Merson, another of the cohort, who continued these recording practices. Similarly, when Samuel Mitchell became Superintendent of the newly established South Yorkshire Asylum at Wadsley, he too instigated a system of thorough and methodical physical assessments on each new admission. The rationale was implicit: insanity had a physical basis, and should be studied and understood in a rigorous, scientific manner. The training these men had at Wakefield influenced the way they viewed and conducted their day-to-day approach to the asylum's work, though in a way that is not immediately visible. When he was discussing 'scientific work in asylums' during his Presidential Address to the Medico-Psychological Association in 1897, T.W. McDowall declared that

> [e]verything that is good and great in this world had a small and humble origin [...] Personal work as an asylum pathologist in early professional life showed me long ago that in addition to what asylum medical officers may be able to do, it would be necessary to have men devoting their attention entirely to psychological investigation, if satisfactory progress is to be made.[582]

For McDowall, the Wakefield experience had convinced him that specialist scientific investigation should be conducted in addition to the therapeutic efforts made by medical me. The ideal of the research school remained, though he was disappointed that such practice was not as widespread as it ought to be.

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[582] McDowall (1897) p. 684.

IV. *Mind* and *Brain*: a Divided Legacy of the Asylum

As has already been mentioned, British neurology is generally regarded to have come of age as a profession in London from the mid-1870s onwards. In 1884, the first successful attempt at brain surgery based on Ferrier's cerebral maps was made, and in 1886 the London neurologist William Gowers published the first edition of his *Manual of Diseases of the Nervous System*, which would become the standard textbook for practicing neurologists; both events which highlighted the growing optimism and confidence of the profession. Neurology in Britain in this period came to centre around two main institutions: Queen Square Hospital, where many of the most prominent neurologists held practice and conducted their research; and the journal *Brain*, which became a mouth-piece for the profession. *Brain* was the first truly neurological journal published in English, established in 1878 by Crichton-Browne, Ferrier, Hughlings Jackson and Sir John Charles Bucknill.[583] An 'expressly locationalist journal' – it could not fail to be with the first three editors mentioned – *Brain* was at the forefront of the wave of localisation research conducted in the late-nineteenth century.[584] Indeed in many senses it can be seen as the direct successor to the *West Riding Lunatic Asylum Medical Reports*, having inherited its role to support and publish work around cerebral localisation and, for its early years, employing the same editor and many of the same contributors. *Brain* also publicised and stood for the idea that positive, scientific experiments, conducted on the physical brain and utilised in collaboration with clinical studies or other observational research, was the principal route by which knowledge of the mind's operations would come. Still internationally renowned as a journal, it is the clearest lasting legacy of the West Riding Lunatic Asylum's approach to the brain under Crichton-Browne.

As was discussed in the previous chapter, after the publication of Ferrier's 1876 *Functions of the Brain*, there was a wave of further research in this area, as many more experimenters repeated Ferrier's initial simulation and ablation tests, and delved further into the clinical study of nervous diseases to try to link pathological lesions of the brain with specific neurological symptoms. Before the 1870s, much work had been done that contributed to the understanding of the brain and its diseases, but it was only in this later period, and around the positivist methods of cerebral localisation, that neurology coagulated as a concrete and separate specialty of medicine. A theory which we have seen in this thesis was largely a psychiatric one, which developed as both an explanation and rationale for research in the Asylum, came under the domain of neurology. As Bevan-Lewis made

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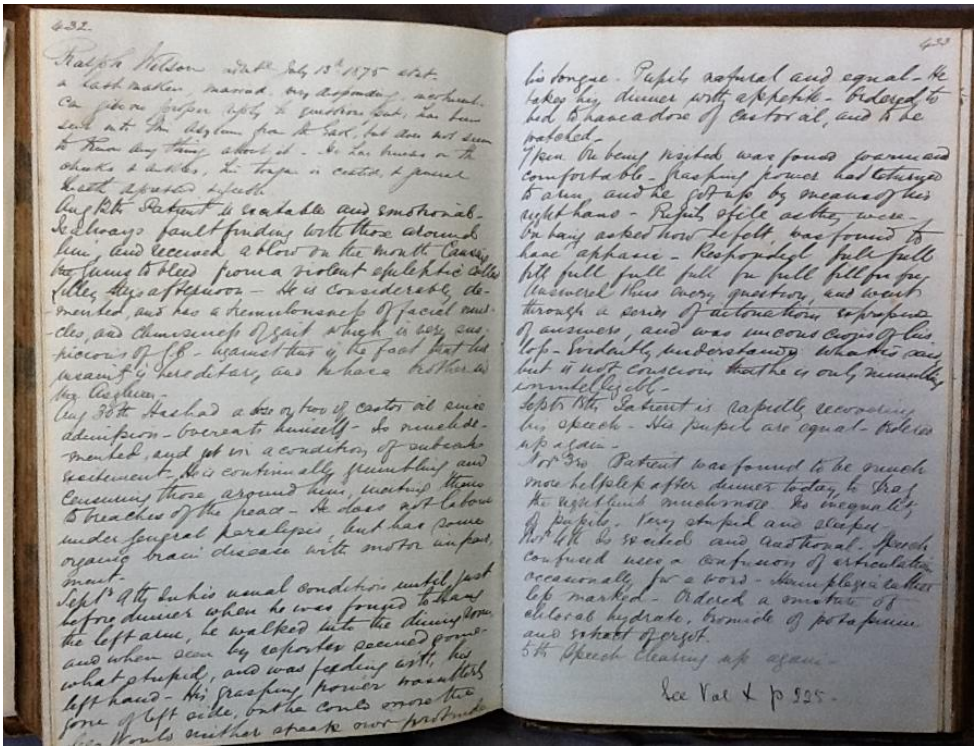
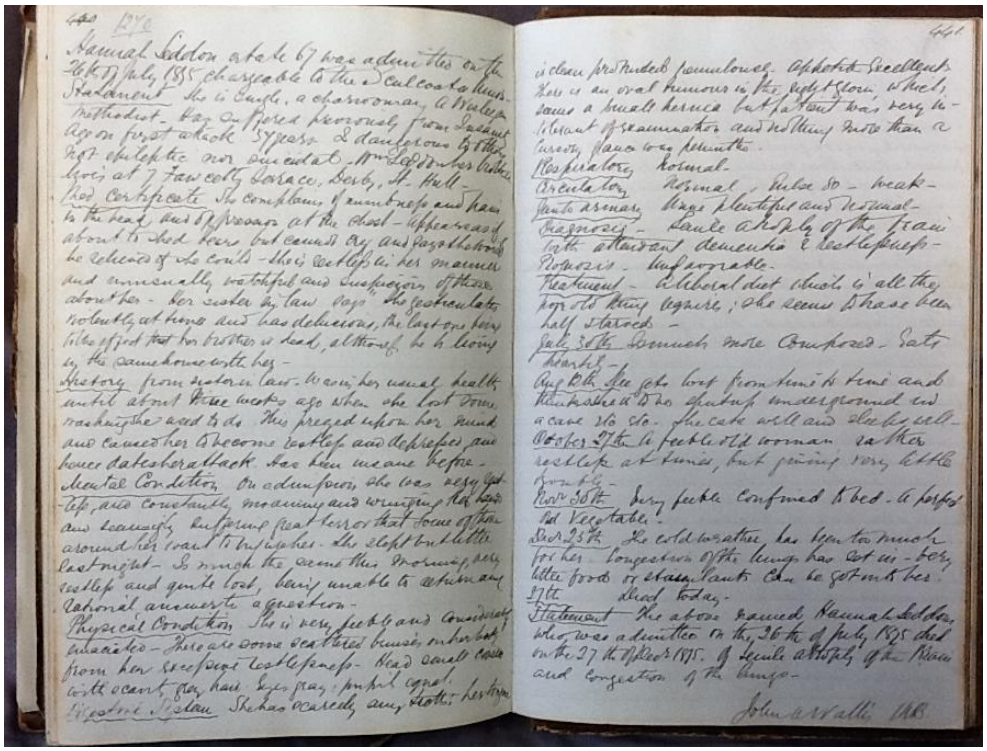
[583] Bucknill was not a neurologist, nor much interested in the subject at this stage of his career. However, having almost single-handedly founded *JMS*, his experience was presumably sought after.
[584] A.G. Gross (2008) p. 381.



Figs. 5.5 and 5.6: Medical case books at Hull County Asylum, 1875

These two images show case books at Hull immediately before (above) and after (below) the arrival of John Wallis. The difference is subtle but significant: continuous prose about the patient's back history and other anecdotes is broken down into only medically (and legally) significant details of the onset of their current condition and their present physical and mental condition.

[East Riding Archives, History Centre, Hull]



clear in setting out his *Text-book of Manual Diseases*, in the final quarter of the century few British psychiatrists were any longer attempting to match psychiatric nosologies with the localisation agenda. Indeed, it was at the suggestion of *Brain*'s editors that Bevan-Lewis had produced his first comprehensive manual for medics and asylums workers on how to open and view the brain.[585]

In its aims to raise neurology as the disciplinary answer to all the problems associated with the brain, *Brain* faced a form of opposition from *Mind*, formed in 1876 as an attempt to develop an experimental and scientific psychology in Britain.[586] Though they constituted two different theoretical approaches, *Mind* and *Brain* shared a common history, and the emergence of each was, to a certain extent, stimulated by the work of the other. *Mind*, founded by the Scottish philosopher Alexander Bain and initially edited by his fellow Aberdonian George Croom Robertson (1842-1892), set out to utilise the methods of scientific investigation in the study of the mind. 'Nothing less, in fact', the opening volume stated, 'is aimed at in the publication of MIND than to procure a decision of this question as to the scientific standing of psychology.'[587] Bain, as Chapter One highlighted, was an associationist philosopher in the Lockean tradition, and had been greatly influenced by physiological research throughout his career, uniting association psychology with a sensory-motor view of the brain that had developed in the middle decades of the century.[588] However, while he was happy to incorporate physiological findings, his focus – and that of his journal – remained on the 'metaphysical subject' of the mind; ultimately, 'the fundamental consideration of mind is and must be subjective.'[589] This approach stood in apparent contrast to the novel researches into cerebral localisation. Ferrier – another son of Aberdeen and a former star pupil of Bain's – offered an objective means of studying mental operations by locating their origins in the highest cortical centres. '[I]n reference to the psychical function of the brain', he argued, 'there is every reason to believe that the union of physiological experimentation with pathological observation will ultimately succeed in unravelling even this obscure subject.'[590] In *Brain*, the editors declared, 'functions and diseases of the nervous system will be discussed both in their physiological and psychological aspects; but mental phenomena will be treated only in correlation with their

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[585] Bevan-Lewis (1882).
[586] Green (2009) p. 37.
[587] Robertson, (1876) p. 3. For more on the early life of *Mind*, see:. Green (2009); F. Neary, 'A Question of 'peculiar importance': George Croom Robertson, *Mind* and the changing relationship between British psychology and philosophy', in Bunn, Lovie and Richards (2001) pp. 54-71; Staley (2009).
[588] See: R.M. Young (1970) esp. pp. 101-133.
[589] Robertson (1876) p. 4.
[590] D. Ferrier, 'Pathological Illustrations of Brain Function', *WRLAMR*, 4 (1874) p. 62.

anatomical substrata, and mental disease will be investigated as far as possible by the methods applicable to nervous diseases in general.'[591]

Bain, of whom Ferrier had once been a favourite student at Aberdeen and with whom he had remained friends, apparently reacted against Ferrier's researches at West Riding and the work of the localisers. Bain was not only sceptical of the significance of the localisers' findings; he was further of the belief that psychological investigations could still only ever be advanced by remaining devoted to the method of introspection, 'the alpha and omega of psychological inquiry'.[592] His criticisms seem strange when it is considered that earlier in the century he had been a keen advocate for physiological study of the brain. Indeed, his work in association psychology had been adapted by Hughlings Jackson and Ferrier in explaining why and how localised motor and sensory functions of the brain were combined to produce all other mental effects. However, in seeking to explain the association of ideas in the brain by pin-pointing the areas at which particular motor or sensory functions were located, Ferrier and Jackson had diverged from the associationists path as Bain saw it: they were attempting only to give things a place and a name as the phrenologists had, and this went against the philosophical method Bain prescribed. It was thus at least partly as a reaction to the localisers that *Mind* was established, and it is no stretch to infer that in calling their own journal *Brain* in turn, the localisers knew only too well how they were positioning themselves.

Mind and *Brain* thus both had their origins in the crucible of 1870s psychological, physiological and pathological studies, with each attempting to delineate its own particular methods and to establish its own disciplinary boundaries. Yet the links between the two go much further than that. We can trace the histories of these two journals, and consequently the disciplines of psychology and neurology that they came to represent, back to the debate over phrenology which reached its apogee in 1820s Edinburgh, as discussed in Chapter One. *Mind* and *Brain* recapitulated the two competing approaches to understanding mental functions that the debate had elucidated: philosophical introspection, versus physical inspection. Moreover, there is a lineage between the two eras, with the founders of *Mind* being academic heirs to the moral philosophers of Edinburgh who so vociferously attacked phrenology, whilst the phrenologists themselves were ancestors to the medical men who created *Brain*. Indeed, in the founders of *Mind* and *Brain* we see the same professional groups taking sides as earlier in the century: university-based, academic philosophers on one side, and medical men, particularly those with interests in the treatment of insanity, on the other. Where the debates in Edinburgh had been stirred by the arrival of phrenology

[591] This was how the new journal was advertised in *Mind*, 3 (1878) p. 295. The term 'localisers' comes from S.L. Star (1989).
[592] See R.M. Young (1970) pp. 101-114.

(and one of its main proponents, Johann Caspar Spurzheim) into the capital, it was the arrival in the 1870s of cerebral localisation, often referred to as the 'new phrenology,' that stimulated the disciplinary separation between *Mind* and *Brain*. The new phrenology of cerebral localisation that appeared in the 1870s, in large part as a result of work conducted at the West Riding Lunatic Asylum, rekindled the old division between the more philosophical and more physical approaches to understanding mental processes. Crichton-Browne's project, self-consciously styled on phrenological thinking, stimulated significant developments in the disciplines of neurology and psychology, as well as psychiatry, in the late-nineteenth century.

V. Conclusion: The Failing Fortune of the Asylum

Where *Mind* struggled to find enough contributors for each volume, there was no such problem with *Brain*, with physicians working at hospitals, universities and even asylums around the country all able to contribute useful, if not original studies. Indeed, glancing through issues of *Brain* one sees why criticisms of localisation research becoming 'tedious' may have arisen: the mechanical approach to neurology that had done so much to establish the discipline's status was overused by its supporters. Nevertheless, they did together form a cohesive group, which proved useful in the further confrontations the proponents of localisation were part of. The fortunes of neurology and psychiatry at this time, however, went in opposite directions. Whilst neurology flourished, garnering much praise and attention with its positive methods, psychiatry floundered, weighed down by the failure of its treatments and worry over the incurability of many of its patients. In McDowall's earlier mentioned speech, though he declared that scientific research was necessary in psychiatry, he was despondent at the results it was yielding:

> As we go our daily round and study the wonders ever under the eyes of the asylum physician, how ignorant we feel, how helpless to do good by means of the so-called scientific methods, how disappointed at the results of some new line of treatment reported to have been so successful elsewhere.[593]

His solution was to divert 'our energies in other and more humble practical directions.' The sentiment was clear: by the end of the century, research was not on the agenda for British psychiatry.

In this chapter, late-nineteenth century psychiatry has been considered as a 'garbage category', a field shorn of its most promising avenues of research – the development of cerebral localisation, and the search for the neurological correlates of mental illness – and

[593] McDowall (1897) p. 685.

left instead as a discipline whose main role was to maintain custodianship of the nation's chronic and incurable insane patients. This chapter has shown how Crichton-Browne's successors at Wakefield continued to conduct original researches, but became increasingly weighed-down by the growing numbers of patients under their watch. The men who trained at the West Riding also continued their work in other institutions, taking up roles in asylums around the country, to which they exported the scientific and medical training they had acquired in Wakefield. The most obvious, and remaining, legacy of the asylum's work, however, was the neurological journal *Brain*, which was essentially a continuation of the asylum's own *Reports*. With the creation of *Brain*, and its psychological counterpart in the journal *Mind*, the division between physical and philosophical approaches to studying mental operations – which were apparent in the 1820s debates over phrenology first encountered in Chapter One – was re-established.

Conclusion

I. Psychiatry and Crichton-Browne's Pessimistic Slide into the Twentieth Century

In an address given in 1905, a sixty-four year old Crichton-Browne told one audience that the 'most vigorous period in human life in its entirety is obviously between twenty-five and forty years of age.' But, he continued, 'to say that men above the latter age are comparatively useless is to fly in the face of the biographical dictionary. Much of the best work has been done by men over forty'.[594] Crichton-Browne's own career can be read as both a confirmation and a refutation of this statement. After he left Wakefield aged thirty-five, he was never again involved in the daily rigours of scientific research, but he did live a (ninety-seven years) long and successful life, taking up the position of 'orator of medicine' in British public discourse: regarded as 'the modern Demosthenes', his speeches, apparently, 'made better newspaper copy than those of any other medical man.'[595] Indeed, for Neve and Turner,

> more than someone who successfully (albeit temporarily) integrated neurological research within asylum administration [his] historical significance rests on his role as mental hygienist, Christian evolutionist and proponent (or advocate) of a Carlylean consciousness.[596]

With a new and full investigation of the work he led at the West Riding Lunatic Asylum, however, this thesis has shown that, actually, it is his time at Wakefield that should be considered his most significant contribution to medical science. It was whilst there that he managed a research school which trained many young doctors, led the field in the experimental study and treatment of insanity, and effectively shaped the development of psychiatry and neurology in Britain. Moreover, it was on the basis of his asylum expertise that he was able to make such pronouncements on a range of medical matters in the late-nineteenth and twentieth century. Nevertheless, Crichton-Browne's post-1876 career and ideas were important, and an assessment of these is informative on both his time in the

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[594] Crichton-Browne (1905) pp. 14-15. Speech given as the inaugural address to the Preventive Medicine Section of the Royal Institute of Public Health, 20 July 1905.
[595] [Anon.] (1931) p. 654. 'Orator of Medicine' was the title given to Crichton-Browne's obituary in the *Times* (1 Feb. 1938) p. 16.
[596] Neve & Turner (1995) p. 399.

asylum, and some of the paths that psychiatry and neurology took in the remainder of his lengthy lifetime.

Crichton-Browne left Wakefield to become one of the Chancery Visitors in Lunacy, a role in which he was essentially responsible for inspecting the conditions and treatments of wealthy lunatics across England. Though the job entailed a fair bit of travelling, he was able to make London his home, settling into a property in the fashionable area of Regent's Park and taking a regular seat in the smoky rooms of the Athenaeum.[597] He saw some private patients, mostly from the affluent circles he now mixed in, and his output of publications continued as before. The tone of his writings changed, however, as the optimistic outlook of his Wakefield days was steadily replaced by a more concerned and critical view of the nation's mental health. In line with others in his profession, his thoughts turned to the prophylactic science of 'mental hygiene' as a means to assuage the advance of insanity before it had reached the asylum. Medical psychologists in the late-Victorian period became public spokespeople on the dangers of modern civilisation and the measures that were needed, outside of their institutional control, to reverse the worrying rise of mental illnesses amongst the population.[598] In Crichton-Browne's case this development was also out of necessity: no longer inside an asylum, his attention turned to mental and moral management in other aspects of society.

One subject of central importance to Crichton-Browne was education; especially of children, women, and the working classes. He had spoken on the subject of childhood training whilst still a student, and in the decade immediately after departing Wakefield the issue of education occupied much of his thinking, informed by his understanding of healthy brain functions.[599] For example, in 1879 he circulated a survey amongst schools and journal readers relating to the issue of ambidexterity, researching the levels of left- and right-handedness amongst participants. Though the questions were widely lampooned – 'when you put your foot in it, is it the right or left foot?' was suggested as one alternative that might be asked – the subject was a serious one.[600] He was fundamentally opposed to the ambidexterity movement, arguing that the right hand (and therefore the left side of the brain) was pre-eminent, and to attempt to counter this flew in the face of evolution. Dubbed 'the English Goliath of lopsidedness' by Hughlings Jackson, Crichton-Browne equated the

[597] See: Neve & Turner (1995); Oppenheim (1991) pp. 72-77, for more on Crichton-Browne's later career.
[598] On the links between the medical science and the rise of mental hygiene in the late nineteenth century, see: Clark (1982) pp. 229-297; Kevles (1985) pp. 3-19; Pick (1989) pp. 153-220; Skultans (1975) pp. 20-25.
[599] See Crichton-Browne (1860).
[600] Quote from 'Admirable Crichton-Browne Studies', *Funny Folks* (15 Feb. 1879) p. 52. See also 'Queer Queries', *Fun* (12 Feb. 1879) p. 72.

left hemisphere – where Broca had identified a centre for language – with the civilised and superior qualities of man.[601]

Ambidexterity was just one example of the improper training of the brain. Over-pressure in education was another, as 'the seeds of insanity have sometimes been sown in the school', where excess examinations and extended hours of teaching led to nervous diseases in the young.[602] Crichton-Browne contributed a chapter on 'Education and the Nervous System' to the popular *Book of Health* in 1883, and the following year he authored a governmental report on elementary schools in London, where he expounded his ideas on the necessity of bringing the discoveries of cerebral physiology to bear on modern schooling.[603] 'Education has been too much studied in relation to mind; too little studied in relation to body', he wrote: it was the brain which was 'the true field and ultimate aim of all educational operations.'[604] Education had the power to shape the growth, size, blood flow and organisation of the brain, and was the true companion to medical psychology in ensuring that the correct habits were inculcated into the highest and most modifiable centres of the cortex. Repeating proposals he had earlier made in Wakefield, he argued that the schoolmaster's methods must be both psychical and physical, and that they must incorporate more 'original research' into the 'daily drudgery' of school-life. The way this was to be done, he suggested, was to collect school registers 'on a larger and more comprehensive scale than any hitherto used', gathering information on pupils' physical and mental attributes.[605] Old methods died hard, it seems, as his solutions for the improvement of schools were in many ways the same as he had given for asylums.

In addition to education, diet and sanitation were also crucial to healthy mental operations, and Crichton-Browne wrote and spoke widely on these topics into the early years of the new century. There was, it would appear, no substitute for fresh air and a hearty breakfast.[606] What neither these nor appropriate teaching could affect, however, were the capabilities or disorders that individuals were born with. In addition to collecting registers of pupils, he therefore suggested a 'family register', to amass details on the lineage of each

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[601] See Crichton-Browne (1907), when he delivered his most forceful attack on ambidexterity in a lecture at the Royal Institution. For background on the controversies over the 'split brain', see Harrington (1987) esp. pp. 105-135, 206-247 (132). Crichton-Browne opposed many 'fads' (as he saw them), including the anti-vivisection and anti-vaccination movements, vegetarianism and teetotalism.

[602] Crichton-Browne (1920) p. 210.

[603] See Crichton-Browne (1883) and J. Crichton-Browne, 'Elementary Schools', H.C. Parliamentary Papers, Vol. 61, No. 293 (1884) p. 259. See Shuttleworth (2010) for broader developments in scientific views of children in the nineteenth-century. He was a supporter of Montessori's educational approach, and recommended school teaching be adapted to the capacities of the individual, see Crichton-Browne (1920) p. 211. In practice, this meant a more practical, less academic curriculum for girls and children of the lower classes.

[604] Crichton-Browne (1883) pp. 272, 283.

[605] *Ibid.*, pp. 270-271, 273.

[606] See, for example, Crichton-Browne (1889; 1905; 1907; 1910). Neve & Turner (1995) suggest Crichton-Browne essentially presented his version of Scottish pastoral life as the medically correct one.

child, recording every pathological condition, every tendency to insanity, and every disease and death in their families. By beginning in childhood, eventually a 'life chart' could be produced for every man and woman. Heredity, and knowledge of it in the individual, was crucial to both schoolmasters and doctors, if they were to correctly apply methods of teaching and treatment.

As Chapter Three of this thesis outlined, heredity, and the mental and physical degeneration occurring within certain family lines, was seen by Crichton-Browne and his fellow alienists as the cause of many of the cases seen in the asylums. Inside the asylum, it was mainly through scientific means that insanity could be treated; but in the wider world, social means too were necessary to combat the rise of madness. He wrote that

> [c]ivilisation is menaced by the enormous increase of inferior races, owing largely to its influence in abolishing customs which formerly held populations in check. Even in the superior races it would seem that the poorer are gradually supplanting the better elements. The fall in death rate does not necessarily indicate any increase of physical or mental deficiency. It is possible that by our vastly improved and extended hygienic measure we may be keeping alive a debilitated and degenerate population.[607]

Not only did the pressures and vices of modern life contribute to the deterioration of mental and physical behaviour, but the improvements of medical science were in some ways helping to maintain such deficiencies, even amongst the superior British. Insanity bred in the city slums, where moral and physical degradation was passed on from one generation to the next.

For Crichton-Browne, and fellow alienists like Henry Maudsley, Thomas Clouston and Daniel Hack Tuke, the solution to this evolutionary regression was seen in Francis Galton's programme of eugenics; 'the study of agencies under social control that may improve or impair the racial qualities of future generations either physically or mentally.'[608] Crichton-Browne was a founder member of the Eugenics Education Society in 1907, serving as its president for the first year and as vice-president for several years afterwards, and in 1908 he spoke before the Royal Commission on the Care and Control of the Feeble-Minded, where he recommended that steps be taken to discourage reproduction amongst the degenerate classes of society. Eugenism (as he often termed it), was the 'acme of evolution', which bolstered natural selection by promoting good breeding and eliminating the unfit, and along with education was the great 'safeguard against mental degeneration,

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[607] Crichton-Browne (1926) p. 291.
[608] Saleeby (1910) p. 374. This definition comes from the Society's own papers. For background, see Searle (1976).

disease, and decay'. Asylum doctors did what they could, but it was eugenics that would eventually help in 'the elimination of these half-mads'.[609]

The growth of the mental hygiene movement in the late nineteenth and early twentieth century, most particularly in the form of eugenics, can be understood as a response among certain quarters of society to the apparently worrying decline in the health, efficiency and progress of the British population.[610] Amongst the psychiatric profession especially, it reflected a pessimistic response to the failure of medical psychology in dealing with the rising numbers of insane at the time, and presented an avenue through which they could preach to the nation at large, commenting on the dangers that threatened mental and moral health whilst expanding their own position of authority.[611] Importantly, mental hygiene and the eugenics movement were, in the hands of psychiatrists, also based on a continued somatic understanding of insanity. The highest functions of the brain, which were the last to develop both evolutionarily and in the life of an individual, were also the first to be distorted and diseased by hereditary and outside influences, and it was from there that the effects of insanity arose. Though Ferrierian localisation did not yield a new basis for the classification of insanity, British psychiatrists remained largely committed to a neurological rationale into the early decades of the twentieth century, even as neurological research became increasingly distanced from the concerns and practices of medical psychology.[612] Degeneration, and its resolution in the methods of mental hygiene, remained central to psychiatric thinking.

Indeed, though the name was new, eugenics, Crichton-Browne argued, was not, and he traced its principles back through Maudsley to the early phrenologists, who were 'The First Eugenists.' It was they, he wrote, who first 'recommended great wariness in marriage contracts, having regard to the prevalence of heritable disease and defects'.[613] It was not just in heredity that phrenology had led the way for eugenical studies, however, but also in its insistence on tracing the relationship between brain size and mental endowments. Crichton-Browne happily supported Galton's programme of anthropometric measuring, seeing its links with the phrenological practice of cranioscopy. In fact, he proposed, even 'the correspondence they [phrenologists] alleged between the outer surface of the skull and the contour of the brain surface within, which was so fiercely disputed, has now been made

[609] Crichton-Browne (1926) p. 73; (1920) p. 208; (1931) p. 50. In Crichton-Browne (1931) pp. 154-155, he suggested 'measures that are distasteful' – meaning sterilisation of the feeble-minded – might be necessary to preserve the nation. He did not go as far as other eugenics supporters in thinking the unfit should be left to 'die out', but instead proposed measures to improve the sanitation and conditions of 'slum life'. See *Times* (9 Feb. 1914) p. 11. His foreword to Cantlie (1906) pp. xix-xxvii, also outlined his views on the need to increase fitness in the population.
[610] See Renwick (2011).
[611] This point was also made by Clark (1982) pp. 229-297.
[612] See T. Turner (1996).
[613] Crichton-Browne (1926) p. 72.

good.'[614] Looking back on the Edinburgh phrenology disputes of the 1820s – in which, he noted, his father took part as a 'phrenologist of the old school' – he found that the phrenologists 'had the best of it both in argument and temper'.[615] That the brain is the organ of the mind; that there is localisation of function within the cerebral hemispheres, that the size of the brain is a measure of its power; and that there is a correspondence between the shapes of the skull and of the brain, had, according to him, all now been proved by scientific investigation. Thus, 'strange to say,' he pointed out,

> we are all phrenologists today, phrenologists of the new school, for with the advance in our knowledge of the anatomy and physiology of the nervous system, to the study of which phrenology imparted so powerful an impulse, we have come to accept all the cardinal principles upon which the phrenologists insisted.[616]

That Crichton-Browne still lauded the phrenologists perhaps showed the distance that had grown between his medical psychological views and the leading front of neuroscientific research. In 1912, Shepherd Ivory Franz and others adopting the methods of experimental animal psychology asserted that 'mental activities are not due to the independent activities of individual parts of the brain, but to the activities of the brain as a whole' and thus 'we should not adhere to any of the phrenological systems, however scientific they may appear to be on the surface'.[617] Indeed even Charles Sherrington, an acolyte of Ferrier, observed in 1906 that the method of cerebral stimulation made famous by Ferrier gives 'little light... to much that goes on in an organ whose chief function is mentality itself'.[618] Sherrington had seen the significance of new methods in understanding the brain's functions, and the ideas of those who viewed the brain as an integrated whole, not a congeries of organs or localised functions, were to prevail in localisation debates until the middle of the twentieth century.

More significantly, Crichton-Browne's insistence on the veracity of most phrenological thinking also displayed just how wedded he was to an older, Victorian approach to the insane brain and its treatments. He vehemently opposed the new psychoanalytic movement of 'Freudism', with its methods of studying the unconscious causes of mental aberrations. For Crichton-Browne, no good could come of exploring a patient's primitive, selfish and sexual desires, when attention should instead be directed to wholesome, practical thoughts, as the methods of moral treatment had outlined. He remained unequivocally attached to the old asylum system. Speaking at the first Maudsley

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[614] Crichton-Browne (1924) p. 4.
[615] *Ibid.*, pp. 1-2.
[616] *Ibid*., p. 4.
[617] Franz (1912) pp. 327 – 328. For background, see Krech (1962).
[618] Sherrington (1906) p. 269.

Lecture in 1920, ahead of the 1923 opening of the Maudsley Hospital – a new institution which heralded a reform in British psychiatry – Crichton-Browne stressed that the

> special mental hospitals, psychiatric clinics and mental nursing homes that come into being under the new *regime* will be auxiliary to our asylums, but they can in no degree supersede them, and it would be a misfortune if they derogated in any way from the reputation of our asylums as curative institutions.

Rather, going back verbatim to his original plans at Wakefield, he repeated that 'asylums must become hospitals more and more, and more and more there must be enlisted in their service men of high professional and scientific attainments.'[619]

Crichton-Browne was committed to the asylum project, as to abandon it was to dismiss a system that he and his father had played such a significant role in building up. In the asylums, he had earlier written, 'humane treatment of the insane had commenced and advanced pari passu with that of the scientific investigation and treatment of brain-diseases and disorders.'[620] Patients, and the practitioners of medical psychology, were protected in the asylums, ensconced in huge institutions that had a rationale and life of their own. Yet it was because of the reliance on asylums, Bynum has argued, that 'neuropsychiatry never really flourished in Britain.'[621] With an old model, based on moral treatment and an accumulation of huge numbers of patients, British institutions weren't built with the prospects of scientific research in mind, as their Continental counterparts were. Crichton-Browne spent a lifetime arguing against this view, and for a brief period at the West Riding Lunatic Asylum he showed how this need not be the case, as the research school he led was a crucial location in the development of both psychiatry and neurology in Britain.

II. Science, Medicine, and the West Riding Lunatic Asylum

This thesis has been primarily concerned with a ten-year period, 1866-76, at the West Riding Lunatic Asylum, which represents just a small part of that institution's history, and an even smaller part of the broader history of the mind and brain sciences in Britain. Yet this period, described as an 'experiment' by its overseer James Crichton-Browne, also represented a significant moment in the long-term development of neurological and psychiatric thinking in the nineteenth century. At a time when British asylums were seen as scientific backwaters and curative failures, the asylum at Wakefield, under the direction of Crichton-Browne, became one of the most active and important centres of scientific

[619] Crichton-Browne (1920) p. 204. For more on the early ideas of the Maudsley Hospital, see Hayward (2010).
[620] [Anon.] (1876a) p. 516.
[621] Bynum (1985) p. 90.

research in the world, playing a pivotal role in the development of the modern brain sciences in Victorian Britain. In this thesis it has been investigated for the first time just how, and why, the asylum was so acclaimed in its own time and has remained a location of interest for historians and scientists since.

As a way of understanding its achievements, and as methodological guide for its study, the asylum has been presented as a 'research school', in line with the historiographic model first outlined by Jack Morrell.[622] Beginning with Crichton-Browne, the director, Chapter One explored the intellectual, professional, and familial background to his arrival in Wakefield, and it was seen just how committed to the public asylum programme he was. Moreover, through Crichton-Browne the discredited ideas of phrenology had a real and tangible link with the modern brain sciences that developed in the final decades of the century. Phrenology, it is argued, was the 'ancestor problem' around which the asylum research school coalesced. Chapter Two then explored how Crichton-Browne used his considerable charismatic powers to organise the finances, staff and buildings of the asylum for the purposes of research. Though nineteenth-century British asylums were, and still are, seen as scientifically desolate locations, there existed in these institutions the latent potential for scientific investigation. Amongst many developments at Wakefield, the recruitment of unpaid clinical clerks, to share the burden of work, was a key step in the development of the research school at Wakefield.

In Chapter Three, the asylum's patients were then brought into closer scrutiny, as it was shown how they provided the fundamental ingredient for research. Though patients are not an element considered by the original research school model, it was the observation and treatment of them on which the asylum's workers built up an understanding of insanity and its origins in the brain. In post-mortem examinations especially, Wakefield men – and others at asylums across the country – were involved in a project to record and correlate lesions of the brain with the physical and psychological symptoms of insanity. A significant step in this process was taken when the asylum's pathologist began producing visual images of the brain, which were motivated by contemporary developments in the theory of cerebral localisation. As Chapter Four showed, Wakefield was a pivotal location in such developments. Using the materials provided by the asylum, David Ferrier contributed to a research programme at the asylum to localise the functions of the brain in the cerebral hemispheres. To do this he adopted the experimental methods of electrical stimulation, but he also used the asylum's records to defend his findings, and to confirm their validity in constructing a map of the human brain. Finally, in Chapter Five it was seen how cerebral localisation provided a theory and project around which a nascent neurological profession

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[622] Morrell (1972).

grew, and the new neurological journal *Brain* continued the work that had begun in the asylum's *Medical Reports*. Indeed, this led to the division of neurological research from psychiatric practice in Britain; and at the same time *Brain*, and the psychological journal *Mind*, rekindled the old division between physical and philosophical studies of mind and brain that had characterised the early-nineteenth century debates over phrenology.

Though created to explain the rise of one particular chemical laboratory, a research school is a unit of analysis that has been equally applicable to disciplinary developments in, amongst others, geology, physiology, physics, and – as this thesis has argued – psychiatry and neurology. The usefulness of the research school model lies in its eclecticism, suggesting fruitful areas for investigation without restricting research into others not previously identified. Thus, whilst considering Wakefield as a research school, this thesis has also situated the asylum within broader developments in legislation for the insane and medical-scientific discussions about the mind and brain. Furthermore, throughout the preceding chapters, different methods of historical research have been used to explain the achievements of the asylum. For example, in exploring the psychological characteristics of Crichton-Browne, in considering the financial records at Wakefield, in describing the role of patients, and in conducting a prosopographical study of the asylum's medical officers and clinical clerks, this thesis has used a variety of historical approaches to shed light on the work of the asylum. There are a multitude of tools available in the historian's armoury, and this thesis has shown how they can be combined in the study of a single institution

Significantly also, the research school model is taken from the annals of the history of science, but has been here applied to an asylum, usually the province of historians of medicine. In the introduction it was noted how histories of science and medicine have frequently been separated, and that it was an aim of this thesis to reintegrate them, through a study of the West Riding Lunatic Asylum. Indeed, it may be noticed that throughout the preceding chapters, the work of the asylum has been described at times as both scientific and medical. This was not by accident, but a reflection of the ideas and practices under scrutiny. Crichton-Browne consistently led calls for asylums to be more 'scientific', and to him and his colleagues, their work *was* both scientific and medical. The investigation of the actions of the brain and the causes of insanity, and the provision of care and treatment for ill patients, were both part of the same endeavour. The asylum thus provides a clear illustration of the way science and medicine were united in the nineteenth century, and this thesis has shown how histories of the two fields can be integrated.

In the disciplinary division that arose between psychiatry and neurology towards the end of the century, as Chapter Five discussed, asylums lost claim to many of the most promising and successful avenues of research into cerebral diseases that had long been in

the domain of medical psychology. This contributed somewhat to the floundering of psychiatry as a research activity, though it by no means marked the end of the neuropsychiatric enterprise in Britain, as the continued work of Major and Bevan-Lewis at Wakefield and the building of the Central Pathological Laboratory (1893) in London attest. However, the apparent failure of British neuropsychiatry, and the visibly prominent division that arose between neurology and psychiatry, should not be read back onto the earlier period. Though asylums have generally been viewed by historians as scientific and medical barren lands, they could be, and sometimes were, places of genuine medical-scientific research; and in recent years there is evidence that the condescending, consensus view of asylums has started to change. The therapies of medical psychology are investigated, and madness, once treated as a single, homogeneous category in the eyes of historians, is now broken down and understood as a complicated and important set of conditions and explanations that nineteenth-century psychiatrists were deeply committed to. With a plethora of institutional archives and published papers available for study, the subject of asylum science is a promising one for historians of science and medicine.

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