CHAPTER I

PITT RIVERS AND THE MID-VICTORIAN CONTEXT

1. Early Life and Education

Pitt Rivers was, in many ways, a typical Victorian. He was born at the beginning of the second quarter of the nineteenth century and died in 1900, or one year before the Queen herself. His life paralleled those of many of the leading figures of the age: Gladstone, Ruskin, Millais, and from Lytton Strachey's list, Cardinal Manning, General Gordon and Florence Nightingale[1]. Through his wife he was related to many as well: Lord Stanley, President of the Board of Trade under Aberdeen; his wife, Henrietta Maria, the famous blue-stocking; Albert Way, the principal founder of the Archaeological Institute. His career, in turn, touched upon many of the major events: the Crimean War, the Trent Case, the International Exhibition of 1862, the Fenian Conspiracy. He met or corresponded with figures as diverse as Richard Burton, the explorer, Philip Webb, William Morris's friend and partner, and Lord Hardinge, Commander-in-Chief of Her Majesty's Armed Forces. He came into contact with an even greater number: Prince Albert and the Duke of Cambridge, among royalty; John Tyndall and Joseph Prestwich, among the naturalist community; E.B. Tylor and Thomas Huxley, among anthropologists. His daughter married Sir John Lubbock, the first Lord Avebury, whose own interests and activities touched upon nearly all we now associate with the age: banking, politics, science, the growth of educational institutions and the foundation of learned societies.

Pitt Rivers was, then, a man whose life could be said to have epitomized his age. The same was true of what Victorians would have called his character. He was above all else a pragmatist, committed to the advancement of science and the improvement of society. He was skeptical in matters of religion, 'realistic' to the point of agnosticism. Like many others among his generation he had a tendency toward pronouncement rather than exchange, something further emphasized by his high standing in society and, of course, his military background. He was persistent and industrious but

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[1] Eminent Victorians. For general background I have depended on: Geoffrey Best, Mid-Victorian Britain (New York: Schocken Books, 1972); Eugene C. Black, ed., Victorian Culture and Society (New York: Harper and Row, 1973); Asa Briggs, Victorian People (Chicago: Univ. of Chicago Press, 1972); Jerome Hamilton Buckley, The Victorian Temper (New York: Vintage Books, 1951); W.L. Burn, The Age of Equipoise (New York: W.W. Norton, 1965); G. Kitson Clark, The Making of Victorian England (New York: Athenaeum, 1976); Walter E. Houghton, The Victorian Frame of Mind, 1830-70 (New Haven: Yale Univ. Press, 1975); David Thomson, England in the Nineteenth Century, The Pelican History of England (Harmondsworth, Middlesex: Penguin Books, 1950); Basil Willey, Nineteenth Century Studies (1949; rpt. Harmondsworth, Middlesex: Penguin Books, 1973); G.M. Young, Victorian England: Portrait of an Age (1936; rpt. Oxford: Oxford Univ. Press, 1960). For more general reference: Edith C. Batho and Bonamy Dobree, The Victorians and After (London: The Cresset Press, 1950); Edward Berry Burgum, 'Victorianism', Sewanee Review, 36 (1928), 273- 91; Elie Halevy, A History of the English People in the Nineteenth Century, trans. E.I. Watkin, 6 vo1s., 2nd.ed. (London: E. Benn, 1949-52); Ideas and Beliefs of the Victorians (New York: E.A. Hutton, 1966); W.J. Reader, Life in Victorian England, English Life Series (London: P.T. Batsford, 1964). Finally, G.M. Trevelyan, History of England Vol. III: From Utrecht to Modern Times (1926; rpt. New York: Doubleday Anchor Books, 1952).

possessed what Matthew Arnold, criticizing the generation before himself called 'a want of flexibility'. Froude said of John Keble that 'his mind moved in a groove of a single order of ideas'[2]; the same was true of Pitt Rivers. He had little sense of humour, and other than in an occasional sarcastic aside, there is little of levity in his writings or speeches. He had little patience with those who worked with him, none at all with those who worked under him. He was, in short, as authoritarian in his thought as in his actions.

But despite such evident shortcomings of personality, Pitt Rivers showed a surprising openness to new ideas and embraced a range of interests which would eventually open him to the charge of 'diffuseness', as E.B. Tylor later said of their joint friend, the anatomist George Rolleston[3]. Pitt Rivers was in part a soldier, ethnologist, archaeologist and natural scientist. He both worked for his living and lived on the proceeds of an inheritance. He struggled in a bureaucracy and lived the life of the landed gentry. He published on topics ranging from Romano-British hillforts to the chest measurements of army recruits. He was self-educated, like one of Samuel Smile's engineers[4], but managed to attain what was considered a respectable level of scholarship; John Evans, whose own varied researches into numismatics, philology and archaeology made him one of the most erudite figures of his age, was one of his regular correspondents. He was a friend of clerics such as Canon Greenwell and of atheists such as James Hunt, the controversial founder of the Anthropological Society. He was an early follower of Darwin and an outspoken proponent of popular education. He was, for a time, a promoter of liberal ideas in politics. He was patient with visitors to his museum, charitable in a cautious, almost prescriptive way. He was open to reform, but wary of its application, dissatisfied with the state of society, but content with his place in it. He was, then, like his age, enveloped in contradiction, despite his own tendency to see himself otherwise.

Pitt Rivers was born in the north of England near the small village of Wetherby in the West Riding of Yorkshire[5]. His background was undeniably aristocratic. His father was William Augustus Lane Fox, the second son of James Fox Lane and Marcia Lucy Pitt and the descendant, through a complex series of marriages and alliances, of

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[2] James Anthony Froude, Short Studies on Great Subjects, 2nd S (New York: C. Scribner, 1872), IV, 266. Cited in Houghton, p. 161.

[3] W. Turner, ed., Scientific Papers and Addresses by George Rolleston, with a Biographical Sketch by E.B. Tylor (Oxford: Clarendon Press, 1884).

[4] A popular manual extolling self improvement. Samuel Smiles, Self-Help, with illustrations of Conduct and Perseverence, ed., Asa Briggs (1859; rpt. London: John Murray, 1969).

[5] Information on Pitt-Rivers' family background and early life is based on: Lane Fox Papers, Leeds City Archives; Burke's Peerage and Baronetage and Knightage, ed., Peter Townsend, 105th ed. (London: Burke's Peerage, 1970); Burke's Landed Gentry, 18th Ed. (London: Burke's Peerage, 1972); Personal Communications from George Lane Fox, 10 Feb 1980; 5 Jul 1980. Other biographical information is found in St. George Gray, 'Memoir of General Pitt-Rivers' in Anthropology at Oxford; 'Lieut.-General Pitt-Rivers'; and Index. Also, Tylor's entry in the DNB; Thompson, General Pitt-Rivers; PRO, WO. On Wetherby and his Yorkshire environment: A Topographical and Historical Description of the County of Yorkshire (London: John Bigland, n.d.), pp. 631-2; G. Bernard Wood, Yorkshire (London: Batsford, 1967), p. 153; William Page, ed., A History of Yorkshire, Vol. II, Victoria History of the Counties of England (Oxford: Institute of Historical Research Oxford Univ. Press, 1912), 484-86.

Robert Benson, the first Lord Bingley on the one side and George Pitt (1722-1803), the first Lord Rivers, on the other—hence the later surnames. His mother was Lady Caroline Douglas, a Scottish aristocrat with a comparably distinguished pedigree. Among the best known of her direct antecedents was James, the famous 14th Earl of Morton (1703-68), a Representative Peer of Scotland and a one-time President of the Royal Society. The couple had married in 1817, and shortly afterward had taken up residence at a property known as Hope Hall. Here a first son, christened William Edward, was born in 1818, and Augustus Henry, their only other child, followed a little over eight years later, on 14 April 1827[6].

Hope Hall, where Pitt Rivers spent his early years, was essentially a hunting lodge which by recent convention had been set aside for the more impecunious members of the Lane Fox family. It was a rambling, eighteenth-century structure, lying just outside the gates of Bramham Park, the family seat, almost symbolically expressing William Augustus' position in the Lane Fox hierarchy. The nearby mansion was an impressive Palladian house designed by Bingley with the aid of James Paine, the well-known classicist, and his assistant John Wood, later to become famous as the architect of Bath[7]. Its gardens were perhaps its most distinguished feature, having been laid out by Bingley early in the eighteenth century in imitation of those of Versailles; Wood apparently designed several of the classical garden structures, one of which suggests the model for a later memorial at Pitt Rivers' own estate of Rushmore in Wiltshire[8]. At the time of his birth, the mansion was occupied by his uncle, George, to whom the estate had passed in 1826.

Little is known of Pitt Rivers' father's life or career other than a few bare facts. He was born in 1796 and was commissioned in 1811 as an ensign in the Grenadier Guards. His military records show that he saw service in the Peninsular Campaign, attaining the rank of captain before being transferred to the 98th Foot, the Welsh and Tipperary Regiment, one year after his marriage. For a short time he remained on the active list, but since 'the 98th Foot was disbanded shortly after his transfer (to be reformed at a much later date as the North Staffordshire Regiment), it appears that he never in fact took up his duties and officially retired instead[9]. It is probable that poor health, apparently the first stages of tuberculosis, was the main reason for his

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[6] PRO, WO, 25/758. His certificate of baptism is dated 29 Jan 1828. Thompson, General Pitt-Rivers, p. 128.

[7] George Lane Fox, Personal communication 5 Jul 1980; Walter Ison, The Georgian Buildings of Bath (1948: rpt. Bath: Kingsmead Reprints, n.d.), pp. 30-31; Historic Houses and Gardens in Great Britain and Ireland (London: ABC Publishers, 1974), pp. 84-85.

[8] Thompson, General Pitt-Rivers, p. 12.

[9] Army Lists, 1818-27; PRO, WO 17/68, 17/273, 17/330, 17/758; F.W. Hamilton, The Origins and History of The First Grenadier Guards, London: John Murray, 1874) III, 475. Thompson's accounting includes a number of errors on William Augustus' career. For example, the 98th Foot was only reorganized as the North Staffordshire Regiment during the late nineteenth century. His retirement dates from 25 Sept 1821. See J.W. Fontesque, History of the British Army (London: Macmillan, 1927) II, 86; Hugh Cook, The North Staffordshire Regiment (London: London, 1970), p. 33.

decision[10], although it can be imagined that the attractions of the leisured country life with his family must have had its appeal as well.

Of Pitt Rivers' mother even less is known. From later correspondence it is evident that she was single-minded and quarrelsome, proud of her aristocratic background and, like Pitt Rivers himself at a later date, impatient with those who did not conform to her expectations[11]. Her own title was one of uncertain origin, and by rights she should not have been more than an 'Honourable'[12]. She was apparently unpopular with the Yorkshire relatives, rarely visiting them in later life. She was, nonetheless, a tireless champion of her children and worked assiduously to promote their careers.

Life for the Foxes at Bramham Park conformed to the usual standards of the landed gentry. Days, from hints in Pitt Rivers' own later writings, were devoted to hunting and shooting; evenings to supper and cards[13]. In 1828, a fire destroyed much of the mansion, effecting a shift in household arrangements with William Augustus and Lady Caroline exchanging Hope Hall for another and larger property called Bramham Biggin. But otherwise, no major changes appear to have taken place. The family had property both in York and London, and it can be assumed that at least part of the season was spent in one or the other place[14]. There were also visits to Scottish and Welsh relatives and holiday trips to Torquay on the south coast, the latter no doubt for health reasons.

In 1832, during one such visit, Pitt Rivers' father suddenly died, leaving his young widow the sole guardian of their two small sons[15]. Lady Caroline, with little to tie her to her husband's Yorkshire home, removed herself and her young family to London, establishing herself soon afterward at the fashionable address of 3, St. James's Square[16]. Augustus, it should be emphasized, was only five years old at the time, so despite his north country connections, his principal ties were always in fact to the capital. Unfortunately, nothing is known of his early London years. It is assumed that both boys were tutored privately, and that the family gradually conformed to the routines of West End life, holding their expenses well within the bounds of Lady Caroline's modest income. Holidays were probably still spent visiting country relatives, a number of whom were obviously people of substantial position and wealth. One of her cousins was John Sholto Douglas, the famous Eighth Marquis of

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[10] Thompson, General Pitt-Rivers, pp. 12-13. His memorial at Bramham Church reads: 'Though he walked through the Valley of the Shadow of Death, he feared no evil for the Lord was his light and his salvation'.

[11] Lady Stanley, Letter to Lord Stanley, 10 Dec l852; and Lady Stanley, Letter to Lady Maria Josepha Stanley, 12 Apr 1854, Milford, Stanleys, pp. 52 and 80.

[12] Burke's Peerage and Baronetage; LCA, LFP, LXI, 4. Her father was the Honorable John Douglas, the only son by a second marriage of James, the 14th Earl of Morton.

[13] A.H.L.F. Pitt-Rivers, 'Inaugural Address by the President of the Society', Wiltshire Archaeological Magazine, 25 (1890), 296; Excavations in Cranborne Chase, (Rushmore, Wilts.: Privately Printed, 1888), II, XV.

[14] LCA , LFP, XLIV 3, XLIV 2, LXII 3, LXXII 45, LXXII 52, LXXXIII 8, CVIII 25, CXI 8.

[15] LCA, LFP, CVIII 24-25, Memorial, South wall of Chancel, Bramham Church.

[16] Royal Military College at Sandhurst Records. I am indebted to Anne Bedford, Assistant Curator RMAS collection, for this information. Personal communication, 15 May 1980.

Queensbury (1844-1900), and her own eldest brother, George Sholto, eventually succeeded to the Morton title as the Seventeenth Earl[17].

While it was certain, then, that as a well-connected member of the aristocracy Augustus would in some way always be provided for, his immediate prospects as the second son of a second son were by no means promising. His elder brother, whether for reasons of studiousness or unfitness for a more physically active life, received the bulk of the family's educational resources—or at least encouragement—and was sent in 1836 to Balliol College, Oxford. He appears, however, never to have taken his degree, a circumstance which may well have been determined by his poor state of health. The fact that he made out a will at that time suggests too that he possibly shared his father's condition. He recovered sufficiently, however, to enter the Diplomatic Corps, serving as an attaché in Berlin and Naples before his early death in 1852[18]. As to Augustus, it was decided, probably as practical measure above all else, that he should follow his father in a military career, and at the age of thirteen he was admitted to Sandhurst, where he received his first formal training.

The Royal Military Academy at Sandhurst was at the time of Augustus's enrollment more like a public school than an advanced specialist college. A writer in Blackwood's Magazine compared it to 'a common school not of the highest order'[19]. Originally there had been two departments, a 'junior' and a 'senior', the latter serving essentially as a military staff college. The senior department was still in existence as of the 1840s, but had been so reduced in numbers that it was the junior department which received the most attention. It was that department as well into which Augustus was accepted. Boys were admitted between the ages of thirteen and fifteen, remaining usually for a period of three years; four years was in fact the maximum residence allowed. Graduation took place, then, as in other public schools, around the age of eighteen.

Unlike other schools, however, Sandhurst's course of instruction at the time tended to be of a largely vocational character. Subjects covered included physical geology or geography, navigation and practical astronomy, physics ('dynamics and statics'), practical mechanics, geometry, calculus, trigonometry, fortress defence, field fortifications and military surveying. Modern languages, such as French and German, were also taught, as was modern history, the latter no doubt with a military emphasis. Only through offering Latin did the college defer to the traditional school curriculum.

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[17] Tylor incorrectly refers to Lady Carolina's father as the 18th Earl. Tylor, 'Pitt-Rivers', p. 1140.

[18] Joseph Foster, ed., Alumni Oxonienses (Oxford: Parker, 1891). He was in residence from 1837 to 1840 and entered as a student of Civil Law. Personal communication from Penelope Bullock, Deputy Librarian, Balliol College, 22 May 1980. Also, will dated 23 July 1840, LCA, LFP, LXI 4; and The Balliol College Register, 2nd ed., Ivo Elliot, ed. (Oxford: Printed Privately, 1933). On his diplomatic career: Foreign Office List for 1852 (London: Printed by Harrison and Son, 1852).

[19] 'Military Education', Part II, Blackwood's Magazine, p. 580. Other material on Sandhurst based on H. Byerley Thomson, The Military Forces and Institutions of Great Britain and Ireland (London: Smith, Elder and, 1855); Henry Barnard, Military Schools and Courses of Instruction in the Science and Art of War, rev. ed. (New York: E. Steiger, 1872). Hugh Thomas, The Story of Sandhurst (London: Hutchinson, 1961); John Smyth, Sandhurst (London: Weidenfeld and Nicolson, 1961).

Cadets were required to purchase their own compasses and other surveying instruments and were encouraged to make frequent use of the well-fitted map and model room. There was also practical instruction in trench building and fortifications—all of which suggest Pitt Rivers' later career as a field archaeologist.

At the time of his entry, however, standards at Sandhurst were notoriously low. Smoking, drinking and bullying on the part of the older boys were said to be widespread[20]. Also, since commissions could be attained alternatively through purchase (and indeed most commonly were), many cadets never bothered to take their final examinations, or did so only half-heartedly. State support had been withdrawn in 1832, and the total enrollment had declined every year thereafter, at least until 1855, when the first reforms began to take place. During the 1840s, when Augustus was enrolled, there were only about 160 students in residence in any given year.

As a private institution, Sandhurst had to depend on fees for its support. In order to determine those, entering students were divided into five categories: (1) Orphans of Officers in Her Majesty's Services, (2) Sons of Regimental Field Officers, (3) Sons of Colonels or Captains R.N., (4) Sons of Admirals and Generals, (5) Sons of Private Gentlemen and Nobleman. Augustus was admitted under the latter on 19 January 1841, having not qualified as the son of a military officer because of his father's early retirement. He therefore paid the full fee of £125 per annum[21]. He would remain, however, only until July of that year, making the total length of his stay just over six months.

It is uncertain what precipitated his withdrawal. The college's eroding reputation, a lack of funds, his deportment, abilities or state of health may all have been factors, but of this we can never be certain. The next four years remain, unfortunately, completely obscure. It is assumed that he underwent a comparable course of instruction in London in order to prepare him for his eventual career, although no such course could have matched that of Sandhurst, even during its decline.

On 16 May 1845, or soon after his eighteenth birthday, Augustus Lane Fox was commissioned as a Lieutenant in the Grenadier Guards. Not atypically, his commission was by purchase, the price being approximately £2000[22]. The Grenadier Guards, as probably the most socially prominent regiment[23], were an obvious choice for someone of Fox's background. Furthermore, it was his father's regiment and that of many of his relatives. Knowing, however, that Fox was to acquire an early reputation for professionalism and an openness to innovation and reform, he probably could not have made a more inappropriate decision.

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[20] Smyth, p. 57.

[21] Sandhurst Records; Anne Bedford, Personal Communication, 15 May 1980. The full entry is: Fox, Augustus Henry Lane. Date of Admission, 19 Jan 1841; age 13 yrs. 9 months; size 5'6"; Parentage: Private Gentleman (The Lady Caroline Fox, 3 St. James Square, London); Entered 1st Arithmetic and Mathematics class 29 Mar 1841; date of retiring: 22 Jul 1841; commissioned into Grenadier Guards. Withdrawn by his friends 16 May 1845. Adjutant General's Dept. 1854 by purchase.

[22] Hart's Army List 1845; Hamilton, III, 488. Costs were lower in the Life Guards (.t 1785 for a Lieutenancy and in Line Regiments t. 700). PRO, WO, 4/122, 4/275, 26/32, 7-11.

[23] H.S. Wilson, 'The British Army and Public Opinion', B. Litt Thesis, Oxford, 1954, p. 1.

Historically, the Grenadier Guards were the descendants of the foot guards. Their official historian, F. W. Hamilton (later a colleague of Fox's) traces their origins to the King's Royal Regiment of Guards, formed in 1656 under Charles II. The subsequent name 'Grenadier', really a misnomer, derived from the once traditional practice of employing taller guardsmen to throw hand-grenades into the armed ranks of the enemy's troops from beyond the rather limited range of musket-fire[24]. (Fox's association becomes ironical in the light of his own part in helping to introduce the longer-ranged rifle to British service use.) Their title, however, was purely honorific, the British Grenadiers having in fact gained both their name and resplendent bearskins in token of their victory over their French counterparts at Waterloo. Nonetheless, the prestige remained, and the Guards still prided themselves on their towering presence, both physical and social. They were, of course, well suited to the largely ornamental duties of the post-Napoleonic era, the period which Harriet Martineau optimistically, and not fully accurately, had labelled 'The Thirty Years' Peace'[25].

In the year in which Fox took his commission, the Grenadier Guards numbered slightly over 2300 men and officers, distributed among three autonomous battalions[26]. That number was fairly constant throughout the period of his service, increasing substantially only in 1854 and 1855, at the height of the Crimean War. Each battalion was under the charge of a colonel and usually included at least one major, eight or nine captains and ten to twelve lieutenants. Fox was placed in the Third Battalion under the command of Colonel Godfrey Thornton. The regimental commander was the Duke of Wellington, who, of course, was also Commander-in-Chief of Her Majesty's Armed Forces.

Fox first joined his regiment in July 1845, following a short leave[27]. He was initially stationed at Portman Street, London, and subsequently, as his battalion rotated, at six-month intervals, at St. George's, Knightsbridge; Windsor Castle; the Tower of London; Winchester; and completing the circuit, back at Portman Street again in September 1848. The only interruption in that cycle came during the Chartist marches in the spring of 1848, when the whole regiment was placed on alert in London, Fox's Third Battalion having been brought up from Winchester and assigned to the Magazine in Hyde Park. But outside of that single and, as it turned out, uneventful occasion, life in the Guards remained relatively lacklustre, consisting mostly of social rather than military duties. As a junior officer Fox would have been responsible mainly for training recruits, conducting parade drills and carrying out other minor administrative tasks. To a young man of his reputedly impatient and serious temperament, the monotony of his army duties must have rested uneasily. His attitude toward regimental life in later years would certainly tend to support such a conclusion[28].

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[24] Tom Wintringham, Weapons and Tactics (London: Faber and Faber, 1943), pp. 118-19. III, 364; other material on Fox's early activities Guards based on Hamilton, III, 364, 428, 488.
[25] Harriet Martineau, A History of the Thirty Years' Peace, A.D. 1816-1846 (London: George Bell and Sons, 1877). A point stressed by Burn, p. 56.
[26] Hamilton, III, 364; other material on Fox's early activities in the Grenadier Guards based on Hamilton, III, 364, 428, 488.
[27] Hart's Army List, 1845.
[28] Lord Edward Stanley, Letters to Lady Henrietta Maria Stanley, 10 Aug and 20 Sept 1857, Mitford, Stanleys, pp. 152 and 155.

2. The Stanleys of Alderley

It was during that relatively directionless period in Fox's life that he first met his future wife, Alice Stanley, of the well-known Stanleys of Alderley, in Cheshire. Alice had first 'come out' in February of 1846, with, it appears, little success[29]. Fox and she met at what must have been a typical social event two years later, or around the time of the Chartist Marches. He proposed sometime in early 1850, after having been received at her home several times. His first offer was turned down, however, not for lack of affection on Alice's part but because of Fox's uncertain material prospects. But with the death of his brother in 1852, and the eventual promise of his father's estate of some £25,000 (and the immediate gift from his mother of £l,000), his offer was received more favourably, although still without enthusiasm[30]. After numerous delays, many prompted by Lady Caroline's own apparent stubbornness concerning details of the settlement, the marriage took place on 2 February 1853 at St. George's Church, Hanover Square[31]. Fox in the intervening period became a frequent visitor to the Stanley home on Dover Street.

In coming into contact with Alice Stanley and her family, Fox was introduced to a world quite different from his own. Fox's background was aristocratic, it is true, and like Alice, he had grown up in London; but at the time his tastes and interests were in many ways those of a typical military officer, and his immediate family connections, with the exception of those of his mother, were—as the Stanleys themselves obviously felt – of a somewhat provincial character[32]. In contrast, the Stanleys were urbane, intellectual, metropolitan in their orientation, nationally prominent in politics, science and the arts. Alice's grandfather, John Thomas, the First Lord Stanley (1766-1850), was a Fellow of the Royal Society and a scholar of wide reputation best noted for his translation of Burger's 'Leonora' (1796). Her grandmother was Maria Josepha Holroyd (1771-1863), the daughter of John Baker Holroyd, the First Earl of Sheffield and the editor of Gibbon's 'Synoptic Memoirs'. During the l840s, she had established a formidable reputation as a patron and hostess, and regularly entertained figures such as Carlyle, John Stuart Mill and Tennyson at Alderley and in London[33].

Alice's father, John Edward (1802-1869), who succeeded to the title in 1850, was a well-known liberal politician, standing first in 1831, for the borough of Hinden in Wiltshire and after 1832—with only a short interruption—for North Cheshire. As

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[29] Lady Maria Josepha to Mrs. Henrietta Maria Stanley, 14 Feb 1847, Mitford, Ladies, p. 134. Other material on the Stanleys primarily from Bertrand and Patricia Russell, The Amberley Papers; Mitford, Stanleys; DNB entries for John Edward Stanley and the Stanley children.

[30] Lord Edward Stanley, Letter to Lady Henrietta Maria Stanley, 26 Sept 1852, Mitford, Stanleys, p. 50; LCA, LFP Papers, LX 14.

[31] Mitford, Stanleys, pp. 71-73; The Annual Register (London: F & J Rivington, 1854), p. 183.

[32] Lady Maria Josepha, Letter to Lord Edward Stanley, 10 Dec 1852, Mitford, Stanleys, p. 68.

[33] DNB ; Mitford Stanleys; Mitford, Ladies; on Lady Maria Josepha: John Baker Holroyd, Intro. to Edward Gibbon Written by Himself, ed. Henry Morley (London: Routledge and Sons, 1891); John Murray, ed., The Autobiographies of Edward Gibbon (London: John Murray, 1896), p. 1x; Rowland E. Prothero, Private Letters of Edward Gibbon, 1753-1794, 2nd ed. (London: John Murray, 1897), II, 157, 167, 216, 245 and 337; David Alec Wilson, ed., Carlyle on Cromwell and Others (London: Kegan, Paul, Trench, Trubner, 1925), p. 80.

Secretary to Lord Durham, he was one of the authors of the First Reform Bill and during the 1840s served as the whip of the Whig Party. He became President of the Board of Trade in 1853 under Lord Aberdeen, Postmaster-General in 1860 under Palmerston and was later offered a seat in Gladstone's Cabinet. Noted for his caustic, yet genial wit, he was known among his friends and acquaintances as Sir Benjamin Backbite, a nickname his letters suggest was well-deserved[34]. As an influential politician, he no doubt had a part in Fox's later career and was probably responsible for more than one of his son-in-law's later appointments.

Alice's mother, the Honourable Henrietta Maria Dillon (1808-1896; after 1850 known as Lady Stanley), was an accomplished and erudite woman and clearly her husband's match. Raised in Canada and Florence, she was fluent in both French and Italian, and had a wide circle of acquaintances on the Continent. She possessed, from contemporary reports, a forceful personality and was said to have played an important role in her husband's career. Characterized as a free-thinker and feminist, she had, her grandson—and hence, Pitt Rivers' nephew—Bertrand Russell suggested, more in common with the representatives of the great Whig families of the eighteenth century than with those of the more censorious Victorian era[35]. A noted conversationalist, she was a close friend of Carlyle, Maurice, and after 1861 of Jowett, all of whom she entertained, following her mother-in-law's example, either at Alderley or at the family's London home. She is said to have had little patience with intellectual affectation and was overheard more than once to have remarked after the departure of a particularly tedious guest: 'I hate fools'[36]. During the 1850s and 60s, she regularly attended lectures at the Royal Institution, made popular earlier by Farraday's widely publicized chemical and electrical demonstrations, and, in turn, helped, both through example and influential contacts, to introduce Fox to the world of Victorian science.

The second Lord and Lady Stanley were the parents of nine children, most of whom were similarly drawn to politics, science and literature. Indeed, the whole family was notably lively and argumentative, fond of controversy and debate, each, Russell informs us, holding definite opinions on all matters, particularly on religion and politics[37]. The oldest son, Henry (1827-1903), was an amateur Orientalist, noted for his contributions to the Hakluyt Society; he later scandalized the family by marrying a Spanish woman 'of uncertain antecedents' encountered in his travels[38]. Blanche (1829-1921), the oldest sister, was a fashionable member of society, engaged for a short time to Monckton Milnes, Lord Houghton, and later the wife of the 'Young Earl' of Aire. Maud (1832-1915), Alice's junior by four years, was a noted philanthropist, devoted

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[34] DNB; Russell, Amberley Papers, I, 14-16; Obituary, Times, 16 Jun 1869.
[35] Russell, Amber1ey Papers, I, 17. A summary of her contribution is found in: Henrietta Maria Stanley, 'Personal Recollections on Women's Education', Nineteenth Century, 6 (Jul-Dec 1879), 308-321; Obituary, Times, 19 Feb 1895; Obituary, Guardian, 20 Feb 1895; SAL, WP.
[36] Mitford, Stanleys, p. x.
[37] Russell, Amberley Papers, I, 13.
[38] Mitford, Stanleys, p. xi. Among his contributions: Fleurs de la Roumanie (Hertford: Austin, 1856); The East and West (London: Hatchard, 1865). Barbosa's Description of the Coasts of East Africa (London: Hakluyt Society 1865); The Philippine Islands, Moluccas, etc. (London: The Hakluyt Society, 1868); The First Voyage Round the World by Magellen, (London: The Hakluyt Society, 1874). Information on other Stanley children is principally from Mitford, Stanleys, pp. xi - xvii.

to the foundation of girls' clubs. For a short time, her name was connected with that of Henry Rawlinson (1810-1895), the famous Assyriologist, a circumstance of significance for Fox once he became interested both in geography and archaeology. Finally, John Stanley (1837-1878), the last of Fox's contemporaries, was a professional soldier, who by the age of sixteen would see action in the Crimea and soon afterward in India during the Mutiny[39]. Like Fox, he was in the Grenadier Guards, and it is likely that Fox had a part in his choice of regiments.

Others of the Stanleys had equally distinguished careers, which might be summarized here for convenience. Lylluth (1839-1929), the third son, became a well-known liberal politician, later presiding over pacifist meetings organized by his nephew Russell. The fourth daughter, Kate (1842-1874), married Lord Amberley, the son of the Earl Russell, and was later the mother of Bertrand. It is really because of this connection that so much is published on the family. The fourth son, Algernon (1843-1920), was an outspoken Puseyite, converting eventually to Rome. To the disappointment of his family he was eventually ordained a Catholic priest, and became Bishop of Emmaus. The youngest, Rosaline (1844-1921), married George Howard, later the Earl of Carlisle, and successor to the famous seat of Castle Howard in Yorkshire. In later life, Pitt Rivers' own Yorkshire connections would bring the two families together.

At the time of his courtship, however, Fox, as a straightforward young officer in a Guards' regiment was somewhat out of place among such a group, and it is evident that while Alice may have valued his qualities, her parents did not. As Lady Stanley wrote to her mother-in-law at the time of his initial courtship, 'Major Fox comes here tomorrow, I am glad it is when the house is full'[40]. The older son Henry, in fact, appears to have been the only member of the family to have approved of, or at least given support to, his sister's choice. At the same time, Fox's own efforts to join into the life of the, family were looked upon with open amusement, particularly by Alice's sisters. It is obvious that he lacked their accustomed intellectual breadth and conversational ease. Fox was described by Lady Stanley as 'touchy' and was evidently dismissed by her, in her terms, as a bit of a 'fool'[41]. On the other hand, there are indications that Fox, while at times resentful, was not altogether unappreciative of his new environment. It is obvious, too, that the Stanleys, as they came to accept his presence, were to have an enormous influence upon his interests, particularly in the years just before his marriage. Their own varied accomplishments also may have helped encourage him to make his own mark.

3. The Development of the Rifle

Around 1850, Fox's routine of courtship and regimental duties was interrupted by a special assignment to help in the tests on the new rifle then being considered for army use. That assignment must have offered a welcome break from his usual

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[39] Hamilton, III, 489.
[40] Lady Henrietta Maria Stanley to Lady Maria Josepha Stanley, 2 Jun 1853, Mitford, Stanleys, p. 71; the reference to Fox as a major is due to the fact that Guards Officers were traditionally accorded a rank higher than that of their regular army equivalents, a condition which applied until 1881.
[41] Mitford, Stanleys, p. x.

responsibilities, and it is evident that he accepted the new task with enthusiasm. It was in the context of those tests, as well, that Fox first began to form the personal collection of firearms from which his later ethnological museum developed. Also, it was during that period, as he later claimed, that he first became interested in the developmental ideas which his collection was meant to illustrate. His involvement, therefore, deserves particular attention here.

At the time of the proposed rifle experiments, the British Army, with a few exceptions, was still equipped with smoothbore muskets of the type used at Waterloo[42]. There had been, of course, some minor modifications. In response to the introduction of the percussion cap through the successive efforts of Alexander Forsythe and Wesley Richard, most of the older firearms—the Pattern 1802, the India Pattern and the Brown Bess—had been converted beginning around 1834, from flintlocks to cap-fired weapons. A new model, Pattern 1838, had also been introduced to replace the older muskets. But the latter was, with the exception of the firing mechanism, essentially identical to the Pattern 1802. Since that time nothing further had been done in terms of design; the Pattern 1842, which most of the troops had been issued by the time of Fox's involvement, was really an expedient brought about by a fire in the Tower the previous year, representing no real technical advance over the earlier muskets[43]. Nonetheless, the smooth-bore musket had long proven effective at least at short range (about 100 yards) against the close-ranked files of similarly equipped enemy troops. Moreover, infantry tactics were largely organized around the qualities—or alternatively, the limitations—of musket arms. Most authorities, therefore, were understandably reluctant to introduce any major changes.

Until mid-century there had been, in truth, no practical alternative. It had long been recognized that rifling the barrel, that is, adding a spiral groove or grooves to the inside, greatly increased the weapon's accuracy. In fact, sporting guns had been constructed with such grooves since the sixteenth century. Furthermore, the value of rifled firearms in warfare had been well demonstrated by American sharpshooters during the War of Independence, and in response, a small unit called the Rifle Brigade had been formed within the British Army. There was one major drawback, however. As with other muskets, the rifle was loaded from the muzzle end. In order

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[42] Other than where noted separately, information on the development of the rifle is based on: W.Y. Carmen, A History of Firearms from the Earliest Times to 1914 (London: Routledge and Kegan Paul, 1956); T.K. Derry and Trevor I. Williams, A Short History of Technology (Oxford: Oxford Univ. Press, 1961); Charles ffoulkes, 'Notes on Service Small Arms', Journ. of the Soc. for Army Hist. Research, 13 (1934), 128-35; Fortescue, A History of the British Army (London: Macmillan, 1927), XII, 561, XIV, 227, 248-263; Melvin Kranzberg and Carroll W. Pursell, eds., Technology in Western Civilization (Oxford: Oxford Univ. Press, 1962), II, 491-492; C.H. Roads, The British Soldier's Firearm, 1850-1864 (London: Herbert Jenkins, 1964); H.C.B. Rogers, Weapons of the British Soldier (London, Seeley, 1968); M. L. Wilkinson, 'A Hundred Years of the British Army, Weapons and Equipment', The Army Quarterly, 64 (1955), 300-10; and Pitt-Rivers' own work: A.H. Lane Fox, 'On the Improvement of the Rifle as a Weapon for General Use', JUSI.2 (1858) 453-488 (rpt.; London: Clowes, 1858). Major Frederik Myatt has been helpful in clearing up a number of discrepancies. F. Myatt, The Illustrated Encyclopaedia of Nineteenth Century Firearms (London: Salamander Books, 1979); Personal Communication, 10 Jan 1980; Interview 11 Jul 1980.

[43] PRO, WO, 3/458, pp. 241-266.

for the bullet to acquire the necessary spin or twist it was essential that it be at least partially pressed into the grooves while being rammed into the barrel. The latter was a slow and difficult process, requiring heavy blows with a ramrod, often with the aid of a mallet. Under battlefield conditions such a procedure was simply impractical. Efforts had been made to modify the bullet or to reduce the degree of twist for the grove—and hence facilitate loading—but such measures had proven largely ineffective. The Brunswick Rifle (itself really an adaptation of the original Baker), introduced for cavalry use after 1836, and later issued to the Rifle Brigade, was provided with a special spherical bullet with a narrow raised belt to make loading easier. But even in that case the bullet fitted too closely, and the Brunswick was judged a 'dismal failure' as a result. One witness before the Parliamentary Select Committee on Small Arms in 1852, explained that loading the weapon was physically so taxing that it was afterwards impossible to keep a steady hand to fire it[44].

But while Great Britain had fairly abandoned its efforts, new advances were being made on the Continent. As in Britain, attention had at first centred on the projectile. Beginning in 1828, Captain Henri-Gustave Delvigue (1798-1876) of the French Army carried out a number of experiments with an expanding bullet[45]. Possessing a circumference smaller than that of the barrel, the new bullet fell easily to the base, where it rested on a shelf in front of the firing chamber. Here it was pressed out to fit the grooves by sharp blows with the ramrod. The resulting shape was too asymmetrical to ensure accuracy, but with modifications—essentially elongation of the bullet to compensate for packing—the new rifle was a relative success. Its effectiveness was first demonstrated during the Algerian Campaign of 1838, when French marksmen were said to have attained a consistent range of some 650 yards—to the surprise of Arab insurgents[46].

Still, some of the difficulties remained, especially in the length of time required for loading. The obvious step to overcome that was to produce a self-expanding projectile, and to that end Delvigue had begun experiments with a bullet with a shallow impression at its base to receive the impact of the blast and therefore caused the 'skirt' of the bullet to be pressed into the grooves upon discharge. Around 1847, Colonel Claude-Etienne Minié, an instructor in the Infantry School at Vincennes, modified Delvigue's device through the addition of an iron plug or cap which prevented the bullet from disintegrating when fired, as it had previously had a tendency to do. He also introduced the conical or pointed bullet, long recognized as an advantage but previously impossible to load for obvious reasons[47].

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[44] Report before the Select Committee on Small Arms, 1852. Cited in Rogers, p. 174. Also Col. the Rt. Hon. Lord Alexander Cottesloe Forsyth, l769-l843. Journ. of the Soc. for Army Hist. Research, 8 (1928), 179-83.

[45] Dictionnaire de Biographie Francaise, ed. Roman D'amat and R. Limouzin-Lamothe (Paris: Lefouzey et Ane, 1933); Dictionnaire Militaire Encyclopedie des Sciences Militaires, I (Paris: Berger-Leurault, 1898). His work is described in his own Observations sur un nouveau modèle de Carabine Rayee (Paris: Anselin, 1836); De La Creation et de l'employ de la Force Armel (Paris: J. Correard, 1848), p. 44; Notice Historique sur l'experimentation et l'adaption des Armes Rayées a Projectiles Allongs (Paris: J. Dumaine, 1860).

[46] Rogers, p. 181.

[47] Minié was later Director des Manufactures d'Armes, and Commandant de l'Ecole de tir de Vincennes. See his Du Travail des Ouvriers, Etude d'une Organisation Rationnelle (Paris:

In 1848, the new Minié pattern rifle, as it came to be called, was adopted universally by the French Army, and soon afterwards the British Government, having maintained a watch on its development, purchased Minié's invention for the sum of £20,000. In 1850, the Board of Ordnance began the manufacture of a few prototypes for testing. Interestingly, W. Greener, a Birmingham gunsmith, had offered a similar invention to the Government as early as 1836, but it had been rejected following apparently unsatisfactory tests[48].

The original intention of the new Minié experiments, then, was simply to replace the Brunswick rifle used by the Rifle Brigade. But it quickly became apparent that the whole army was to be equipped with the new Pattern 1851, as it had come to be called. In 1851, 28,000 were ordered by the Board of Ordnance, on the advice of the previously reluctant Duke of Wellington[49]. It was first actually used by the British Army toward the end of the Kaffir War of 1846-52, although not without some difficulties. Nevertheless, by the time of the Crimean War, every infantry battalion embarking for the East, with the exception of the Fourth Division, had been equipped with at least a few Miniés. By the end of the war in 1855, when the Government's own Enfield had begun to supersede the Minié, some 34,000 had been issued[50].

Returning now to 1850, the first of the Minié tests which helped make the transition possible were held at Woolwich, the site of the Royal Military Academy for Engineers and Artillerymen. Those began late in the year, and were carried out initially by a detachment of Grenadier Guards under the command of Major J. S. Brownrigg[51]. Fox, who had been promoted to Captain that August, appears to have joined that detachment sometime early in 1851. Remarks in one of his later papers, however, suggest that he was present or at least involved in the tests from the first[52].

The main objects of the Woolwich tests were to appraise the efficiency of the Minié rifle and to settle upon any possible replacements. But there was also some room for modifications, and Fox had a chance to play at least a small part in those. He claims, for example, to have assisted the gunsmith Henry Wilkinson in his experiments with different fillers for the bullet cavity. (The Minié metal plug was replaced first by a wooden one and then by a clay one.) He also introduced, during the course of subsequent tests on the Enfield, a machine for rifling barrels designed by himself but never adopted[53]. But overall, his actual involvement in that area remained a minor one; his principal responsibility was testing. The same was true once the tests were transferred to Enfield in 1852, and to Hythe after 1854.

Publications Populaires, 1878); and Oscar von Knorring, On Skjutofningarne mon Franska Arméen (Stockholm: Joh. Beckman, 1856).

[48] Rogers, p. 181; T.F. Freemantle, The Book of the Rifle (London: Longmans, Green, 1901), p. 35. Greener's own The Gun and It's Development, with Notes on Shooting, (1835, 1846, 1848, 1858; rpt. London: Cassell (1888)), describes his contribution.

[49] John Scoffern, Projectile Weapons of War (London: Cook and Witley, 1852), p. vii, Fontescue, XIV, 24. For details on the earliest tests: Howard L. Blackmore, British Military Firearms, 1650-1850 (London: Herbert Jenkins, 1901), pp. 231-3.

[50] PRO, WO, 3/142, 44/701.

[51] Hamilton, III, 195; Hart's Army List, 1860.

[52] Fox, 'Improvement of the Rifle', p. 466, n.

[53] Fox, 'Improvement of the Rifle', pp. 469 and 481.

Another of Fox's contributions during that period, however, was to the drill instruction for the use of the new rifle, something closely bound up with the tests, but a side development as well. Early in 1852, because of his familiarity with the new rifle, he was called upon to instruct the 2nd Battalion of Grenadier Guards, then under the command of Lieutenant-Colonel J.R. Crawford, in its use[54]. To prepare himself, he spent several months abroad studying the training methods then employed in France, Belgium and Italy[55]. The immediate result was a new code governing such points as loading, aiming, positioning and judging distances. Also included were preliminary drills such as the care and cleaning of the barrel and the manufacture of cartridges. In general form Fox's code followed in a tradition of training manuals which began as early as the eighteenth century, the only major difference being that his was designed specifically for use in rifle training[56]. A number of French treatises, including one by Delvigue himself, obviously served as more immediate prototypes[57]. Fox's code was initially used by the 2nd Battalion in January 1853, or soon after the first issue of the Miniés. It was apparently well received and soon after was adopted for the use of the rest of the regiment as well.

Recognizing its value, Lord Hardinge (1785-1856), previously Master of Ordnance and the man immediately responsible for the development of the Enfield, personally requested that Fox revise his code for more general use. He also discussed with him the Army's proposal for a training school to be established along the lines of those already existing on the Continent and visited by Fox. As a result of Hardinge's intervention, Fox was soon assigned to 'special service' and relieved of regimental duties[58]. In April 1853, or some two months after his marriage, he was sent to Portsmouth to discuss his system with Colonel Charles Crawford Hay of the 19th Regiment, then Acting Commandant of the new school of Musketry. The school itself was finally established at Hythe on the Channel Coast in June (its official authorization would wait, inexplicably, until 22 September, the following year), and the first detachments from various regiments, consisting of eight men and two non-commissioned officers from each battalion, began to arrive toward the end of the summer[59].

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[54] Hamilton, III, 153.

[55] The principal schools were at Turin, Naples and Vincennes. 'Military Education, Part I', Blackwood's Magazine, 82 (Sep 1857), 265-290; Jules-Albert Guillemon, Histoire Populaire des Institutions Militaires de la France (Paris: Madre, 1871-72), pp. 49-50.

[56] Early drills are described and illustrated in Francis Grose, Military Antiquities respecting History of the English Army, II (London: S. Hooper, 1786-8), plates at rear. The most recent British manual was published by the Army in 1847. PRO, WO 3/184. Also see Aide-Memoire to the Military Sciences, 2nd ed., 3 vo1s. (London: John Wea1e, 1846-52).

[57] Delvige, De La Creation et de l'emploi de la Force Armee of 1848 in particular; L. Panot's Course sur les Armes a feu Portahues (Paris: J. Dumaine, 1851) was also important as was the American writer C. P. Kingsbury's An Elementary Treatise on Artillery and Infantry (New York: G. P. Putnam, 1849). Panot was mentioned directly in 'Improvement of the Rifle'.

[58] Hamilton, III, 153-4.

[59] PRO, WO, 4/732, p. 204, 3/320, p. 42; also, Barnard, p. 624; [Frederick Myatt], History of the Smalls Arms School Corps (n.p., 1972); and W.S. Miller, The School of Musketry at Hythe (London: William Clowes and Sons, 1892).

Fox moved to Hythe in June to help prepare the new school. Apartments in one of the two Napoleonic-era barracks were set aside for him and his wife, and Alice shortly afterward set up the couple's home there. Alice's family was not particularly happy with the move and expressed doubts as to Fox's wisdom in allowing Alice, who was already pregnant, to live so far away from her family and friends. Unfortunately, too, as if justifying her parents' doubts, complications developed and the couple's first child was stillborn[60]. Until this unhappy event, however, Fox and his wife were pleased with their new home and apparently happy to be away from London. Fox also appears to have been satisfied in his work for the first time.

Fox's two main assignments as Chief or First Musketry Officer were to assist in the training exercises and to help implement further tests on the Enfield and Lancaster[61]. More implicitly, he was expected to work on a revision of his code. The latter was finally published early in 1854, under the authority and name of Colonel Hay, who appears also to have had some part in its writing[62]. That short pamphlet, entitled The Instruction of Musketry, would eventually serve as the foundation of instruction at Hythe, and because of it, Fox is often credited with having been the School's originator[63]. Actually, he had little to do with operations at Hythe and had already left by the early part of 1854, or before the school was fully utilized, to set up a second school in Malta. The credit, therefore, is not fully justified. Nonetheless, Fox's contribution was an important one, and subsequent editions of the code were based directly on his own early efforts. His work at Hythe was also the basis of his first theoretical work.

4. The Laws of Progress

As suggested, The Instruction of Musketry was essentially a training manual, but as such it tended to incorporate a certain amount of general and theoretical information in addition to specific drills and so on. Indeed, a full third of its contents is devoted to what is labelled 'The Theory of Projectiles and Ballistics'. In a later paper Fox mentions a notebook which he had begun during this period, and it can be assumed that his original research notes were incorporated into his manual[64]. Unfortunately, those notes no longer exist. We do know, however, that in 1858 they would serve as the basis of his first published lecture 'On the Improvement of the Rifle', and judging from the contents of that lecture, they must have included a great deal of information on the early and later history of firearms in addition to notes on Continental drills, tests and so on. In his capacity as Chief Instructor he no doubt drew on the same material, providing a preliminary sketch of the musket's development, comparable to that outlined above, for the mostly non-commissioned officers in his charge. It was in many ways characteristic of the era that such a technical matter should have been presented in historical terms. As Eugene S. Black recently observed, 'History—Clio—

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[60] Mitford, Stanleys, p. 82-83.
[61] Recorded in Report and Experiment Book of Arms, Ammunition etc. 2 vols. (n.d., 1853-1867). PRO, WO, 140/ 1 and 2. The first entry is for 1 Sept 1853. Both volumes are on display at The Small Arms School Corps Museum at Warminster, the successor to the Hythe School. See Roads. p. 58.
[62] Hamilton, III, 154; Annual Report of the Hythe School, 1855, p. [3].
[63] Beginning with James Lindsay, Opening Remarks, Fox's 'Improvement of the Rifle', JRUSI, 2 (1858), 454. Also: Hamilton, III, 154; Gray, p. 50; Tylor 'Pitt-Rivers', p. 1140.
[64] 'Improvement of the Rifle', p. 455.

was the intellectual goddess of the Victorian era'[65]. That was as true for technical instructors as for philosophers or novelists. Fox obviously enjoyed teaching and typically presented the background in considerable depth. He encouraged his successors to follow his example:

> The instructor, after having thoroughly explained the principles contained in this book, will be at liberty to advance deeper into the subject, developing to a degree proportional to the rank and intelligence of his auditors, the whole history of small arms, from the first invention of gunpowder, and the successive steps by which the rifle has attained its present efficiency; ... [66]

That he viewed that history in developmental terms—that is, as a process subject in some sense to natural laws—as he later implied[67], is a reasonable supposition. Developmental notions and catchphrases were, after all, the common currency of the period and much of the literature of the early fifties is sprinkled with expressions such as 'the principle of continuity', 'the laws of progress' or 'the successive steps [toward] efficiency', as Fox put it, all of which tended to convey some sense of direction or causal necessity to whatever subject was being considered[68]. Furthermore, a number of more theoretical works on the notion of 'progress' had been widely circulated by the time of Fox's first publication. Comte's Cours de philosophie Positive (1832-42) had been available to the English reading public at least since Mills' encapsulation of the 1840s. Herbert Spencer had written on the 'developmental hypothesis', at least with regard to the biological world, as early as 1851[69]. Supported in part by the arguments of uniformitarian geologists and by popular scientific writings such as Robert Chambers' Vestiges of Creation of 1844, the so-called 'developmental

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[65] Black, p. 414.

[66] Instruction of Musketry, 2nd ed. (London: Adjutant-General's Office, 1856), p. 7, par. 3. I was unable to locate a now very rare first edition. See Thompson, General Pitt-Rivers, p. 18. A third edition was published by John W. Parker, also in 1856. Fox's phraseology was also adapted for the Regulations for Conducting the Musketry Instruction of the Army, p. 33, par. 35. See J.E.C. Wilford, Class Book for the School of Musketry, Hythe (Hythe: printed by W.S. Paine, 1861), n.p. Fox comments further upon his lectures at the time in 'On a Model Illustrating the Parabolic Theory of Projectiles of Ranges in Vacuo', JRUSI, 5 (1861), 497.

[67] Fox, 'Improvement of the Rifle', p. 462; 'Address as President of the Anthropological Section of the British Association, Bath, 6 Sept 1888', RBAAS (1888), 826.

[68] The best general discussion is in Asa Briggs, The Age of Improvement (New York: David McKay, 1964), pp. 394-402. Also, Houghton, pp. 36-39, and John Bowie and Basil Willey, 'Origins and Development of the Idea of Progress', in Ideas and Beliefs of the Victorians, pp. 33-45.

[69] J.S. Mill, A System of Logic (1843) vol. VII Collected Works of John Stuart Mill, ed. by R.P. MacRea (Toronto: Univ. of Toronto Press, 1973); Herbert Spencer, 'The Development Hypothesis', The Leader, 20 Mar 1851. Also on Mill's interpretation: Alexander Bain, John Stuart Mill (London: Longmans, Green, 1882). p. 68; W.L. Coutney, The Metaphysics of John Stuart Mill (London: C. Kegan Paul, 1871), p. 38; Iris Wessel Mueller, John Stuart Mill and French Thought (Urbana: Univ. of Illinois Press, 1956), pp. vii and p. 103; J.S. Mill, Autobiography (New York: Columbia Univ. Press, 1944), pp. 146-49.

hypothesis' had become by the time of Fox's first publication, something of an article of faith.[70]

It is hardly surprising that Fox would have embraced such a viewpoint. For one, the developmental hypothesis provided a coherent and unified explanation of technological change. No longer the result of an arbitrary or capricious succession of events, the rifle's development could be shown to have followed a predictable course of gradual improvement. The apparent abruptness of recent advances could at the same time be shown to be largely an illusion. Finally, and probably most important for Fox, the developmental hypothesis was implicitly 'scientific', with all that implied to the mid-Victorian consciousness. Serving as he had as an instructor and technician newly immersed in the language of experiment and the inductive method, his conversion was almost inevitable.

The specific character of Fox's views during this period is unfortunately less clear. Nothing remains, as explained, of his earlier notes nor is there any information available in the form of letters or even secondary accounts. The Stanley correspondence, for example, provides little indication of Fox's readings or interests at the time. His own personal correspondence was, with several minor exceptions, destroyed by Fox himself at a later date. Nonetheless, it is possible to piece together a general outline of his viewpoint at the time, through his papers of the late fifties and early sixties and more particularly through his later writings of 1867-69 on primitive warfare[71]. There is also the Stanley influence to consider—and of their own readings far more is known.

Among the most important figures of interest at the time, particularly among the Stanleys, was Auguste Comte (1798-1857)[72]. Comte, as suggested, had been introduced to the English reading public during the l840s, through the publication of Mills' System of Logic and soon afterward through George Henry Lewes' two volume Biographical History of Philosophy of 1844[73]. Hariette [*sic*] Martineau's condensed translation of Comte's Cours de philosophie Positive had appeared in 1853, or around

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[70] Robert Chambers, Vestiges of the Natural History of Man (1844; rpt. London: John Churchill, 1845). Also see Marilyn Bailey, 'Robert Chambers and the Nebula Hypothesis', The Brit. Journ. for the Hist. of Science, 8 (1975), 214-32. On the impact of uniformitarian ideas: Charles Couston Gillispie, Genesis and Geology (Cambridge: Harvard Univ. Press, 1951), pp. 98-2l0; Walter F. Cannon, 'The Uniformitarian Catastrophist Debate', Isis 51, (Spring 1960), 38-55. Also see Buckley, pp. 80-83, Houghton, Chapter 2, 'Optimism', and Burrow, p. 110. Uniformitarianism had the impact of religious belief. Harriet Martineau wrote ecstatically of 'eternal and invisible laws, working in every department of the universe'. George Henry Lewes, equally responsible with Mill for introducing Comte, wrote of the great 'linear progress of Science (replacing) Philosophy'—and hence, religion. Harriet Martineau, Autobiography, I (London: Smith Elder, 1877), 109; Lewes, Biographical History of England, (1845-46; rpt. London: G. Routledge and Sons, 1885), p. x. For Lyell's own views on faith and progress: Martin J.S. Rudwick, 'The Strategy of Lyell's Principles of Geology', Isis, 61, 1 (Spring 1970), 5-33. Finally, and most recently, see Noel Annan, 'The Strands of Unbelief', and J. Bronowski, 'Unbelief and Science', in Ideas and Beliefs of the Victorians, pp. 150-56 and 164-72.

[71] Printed in JRUSI, 11 (1867), 612-643; 12 (1868), 399-439; 13 (1869), 509-539.

[72] Mill, for example, was a close acquaintance of the Stanleys. See Michael St. John Packe, The Life of John Stuart Mill (London: Secker and Warburg, 1954), p. 434.

[73] Emphasized by Houghton, p. 34.

the time Fox was completing his own short work[74]. Comte's argument, and one which was important to Fox, was that the intellectual, and hence, social and material progress of mankind, could be divided into three distinct stages: the theological, the metaphysical and the positive. It was only by working through those stages that the human mind could hope to break from the constraints of what Comte considered false knowledge and attain scientific truth—in essence the theoretical or 'positive' level.

Fox was obviously impressed with Comte's sequence. Fox's reference to 'theory', in the first division of The Instruction of Musketry, suggests, in fact, that similar organizational considerations had already entered into his thinking. In his papers of the seventies, he accepted Comte's divisions even more explicitly, referring to the three stages of progress: 'the empirical, the classificatory and the theoretical'[75]. Although never a committed Positivist, (Comte's semi-mystical credo and open opposition to the military probably precluded that)[76], Comtean ideas certainly had an impact on his thinking.

Another figure who apparently had an influence upon Fox at the time was Herbert Spencer (1820-1903). Although like Mill, an acquaintance of the Stanleys[77], Spencer's importance for Fox was probably less direct. His first major books, Social Statics and Principles of Psychology appeared only in 1855, or after Fox's manual[78]. Nonetheless, Spencer's impact upon the general reader, particularly through his numerous entries in the popular monthly journals, was considerable. Phrases such as the development f[rom] 'simplicity to complexity' and the 'homogeneous to the heterogeneous', both of which were recurrent in Fox's writings of the sixties and seventies, were drawn explicitly from Spencer[79]. Other phrases such as 'first principles', or even the choice of the title 'Principles of Classification' for his first paper directly on his collection, while obviously Spencerian in tone, were probably taken less directly from Spencer's writings than from other more general sources[80]. Most importantly, however, Spencer's style of presentation and his view of himself as an original thinker had an appeal for Fox, who, whether consciously or not, tended to ape Spencer's attitude of

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[74] Harriet Martineau, The Positive Philosophy of Auguste Comte; Freely Translated and Condensed by Harriet Martineau, 2 vols. (London: John Chapman, 1853).
[75] A.H.L. Fox, 'The Evolution of Culture', Proc. of the Royal Inst. Of Gt. Brit., 8 (1875), 496. For an anticipation of Fox's three stage division, see Fox, 'Primitive Warfare II', 1868, p. 406.
[76] Martineau, The Positive Philosophy, II, 21-451.
[77] Mitford, Stanleys.
[78] Duncan, The Life and Letters of Herbert Spencer (London: Methuen, 1908), pp. 59-63, and Appendix C, List of Herbert Spencer 'Writings'.
[79] For Example: 'Primitive Warfare III', 1869, p. 515; 'Preface' Catalogue of the Anthropological Collection Lent by Colonel Lane Fox (London: HMSO for the South Kensington Museum, 1874), p. xii. Spencer himself admitted that both concepts derived from Von Baer, Autobiography, 11, 9. See J. Arthur Thomson, Herbert Spencer (London: J.M. Dent, 1906), p. 62.
[80] Fox, on the 'Principles of Classification adopted in the arrangement of his Anthropological Collection', JAI, 4 (1874), 293-308. See, of course, Spencer's First Principles of 1862. The Works of Herbert Spencer, 6th ed., (1900; rpt. Osnabruck: Otto Zeller, 1966). The psychologist William Carpenter, whose Principles of Comparative Physiology (1851; rpt. Philadelphia: Blanchard and Lea, 1859) influenced Spencer as well, is another possible source. See Spencer, Autobiography, II, 9; Duncan, p. 61.

self-advertisement in his own later writings[81]. Spencer, in short, provided for Fox the ideal model of the self-educated savant.

But while Comte and Spencer were undoubted influences upon Fox at the time, the main sources of his views on development and progress were probably more diffuse. Macaulay's History of England of 1849, Porter's Progress of a Nation of 1851, Carlyle's Chartism and even Tennyson's Locksley Hall, all pointed to the progressive triumphs of the age[82],—the inevitability and certainty of the 'condition of progress', as Fox later phrased it[83]. It was, however, a notion of progress at two levels. First of all there were the visible signs of progress, the improvements in technology, industry and science. Secondly, there was the general less tangible course of development as represented by the growth of ideas, as Comte expressed it, or in the development of the individual human mind, as psychologists such as William Carpenter argued[84]. In Fox's work, the two were merged. At one level there was the self-evident advance represented by the rifle, each improvement of which in turn represented the successive triumphs of individual thinkers and inventors. At a second level there was the individual triumph of each soldier placed in his charge, the slow development of ideas which his manual was meant to promote. For Fox, the parallels became self-evident, as he later demonstrated in his lectures on primitive warfare.

While writers such as Comte and Spencer obviously had an impact on Fox's thinking of the period, probably the most explicit key to Fox's particular understanding of the concepts of progress and development is found in the works of other writers on military technology of around the same period. A considerable number of such 'weapons histories', as they might be termed, were published during the 1840s and early fifties, the most important and widely read, at least in Britain, being: Henry Wilkinson's Engines of War (1841), already something of a classic by Fox's time; John Scoffern's Projectiles and Weapons of War (1845 and later editions); Colonel C.H. Chesney's Past and Present State of Firearms (1852); and Captain Jervis White-Jervis' The Rifle Musket (1854, or the same year as Fox's Instruction of Musketry). But that is only a sampling and many more, including a number of works by American authors such as J.R. Chapman and C.P. Kingsbury were probably equally available to Fox and were clearly employed by him in the course of his own work[85].

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[81] Burrow writes of Spencer's 'almost pathological touchiness about his claims to originality'. Evolution and Society, p. 180. Hudson writes of Spencer's 'abnormal tendency to criticism'. William Henry Hudson, Herbert Spencer (New York: Dodge, [1964]), p. 12. Also R.A. Jones, 'Comte and Spencer', JHBS, 6 (1970), 240-54.

[82] Emphasized by most writers on the century. See Best, p. 230; Briggs, Age of Improvement, and Victorian People, pp. 20 and 31. Buckley, pp. 122-23; Burne, pp. 50-60; Kitson Clark, pp. 32 and 66; Houghton, p. 39; Young, pp. 1-13.

[83] A.H.L.F. Fox, 'Address to the Department of Anthropology, Brighton, 1872', RBAAS (1872), 159.

[84] On Fox's own debt to Carpenter, see 'Evolution of Culture', pp. 504-67.

[85] Henry Wilkinson, Engines of War (London: Longman, Orme, Brown, Green and Longmans, l84l); John Scoffern, Projectiles and Weapons of War, 2nd ed. (London: Cooke and Whitley, 1852); C.H. Chesney, Past and Present State of Firearms (London: Longman, Brown, Green and Longmans); Jervis White Jervis, The Rifle Musket (London: Chapman and Hall, 1854); J.R. Chapman, Instructions to Young Marksmen (New York: Appleton, 1848); C.P. Kingsbury, An Elementary Treatise on Artillery and Infantry of 1849. Other popular works published before Fox's manual included: later editions of W.W. Greener; Norton's

Most such histories or introductory works tended to follow a similar format. Beginning with the earliest weapons usually hypothesized as unworked stones and sticks—the technology of warfare was traced through slings, javelins, bows and crossbows, culminating finally in the invention of firearms of differing complexity and proportion. The latter were then treated in some depth, with each modification described in detail. Further attention was accorded to auxiliary developments such as the bayonet, as well as to larger weapons, such as the new, long-ranged rifled cannons. The emphasis throughout was on the gradual and continuous nature of technological innovation. Wilkinson, for example, stressed that even the most obvious inventions, such as detonating powder for muskets, were the result of thousands of minor experiments and accidents. As one pressed further into the past, he pointed out, innovation proceeded at an even slower rate. The transition from the branches of a tree, to clubs, then to wooden swords required an immense period of time. Wooden swords, in turn, 'were long in use before the working of metals was understood'. Scoffern also stressed that continuity: 'By a very slight change of form the simple stick would become a javelin'; after centuries of improvement 'archery became developed'. 'Gradually then', he continued, 'manual weapons of fire were universally employed'. Chesney echoed him: 'Reference to the vast will show that the march of artillery towards its present efficiency has been exceedingly slow'. And Jervis White-Jervis explained: 'A history of firearms...involves much of the chemical, philosophical, and mechanical studies of many centuries'[86].

If a single theme might be isolated it is what might be termed a layman's uniformitarianism. Advances in arms were seen as the by products of countless innovations, each too insignificant to register in themselves, but productive of change over considerable periods of time. Writing of the recent and radical changes in arms, Jervis White-Jervis cautioned:

> To the casual observer these improvements may appear simple enough, but to those who have taken the trouble to investigate such matters, the wonder is how they have been brought to such a state of perfection, when we come to consider the number of sciences and of arts which have been called upon to furnish their quota to produce the intact whole....[87]

The present age was, then, merely in a state of acceleration; the same causal principles were still in effect. Moreover, subject as they were to natural laws, advances in military technology were immune, in a sense, to the criticism of those

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Projectiles (London: n.p. 1852); 'Long Range' The Rifle, Its Uses and Advantages in War (London: Bosworth, 1852). Finally, more promotional in character, were Henry Curling A Few Words in Recommendation of the Formation of Volunteer Rifle Corps (London: W. N. Wright, 1852); and Alexander Gordon, Remarks on National Defence Volunteers and Rifles (London: J.H. Parker, 1853). Interestingly, Gordon was a distant relative of Fox's and also Fox's superior in England. He later assisted Fox on his excavations.

[86] Wilkinson, Engines of War, p. 184 ; Scoffern, p. 147; Chesney, p. 17; Jervis, pp. ix-x.

[87] Jervis, p. viii.

whom Scoffern—and later Fox—dismissed as 'Utopian'[88]. As Chesney announced with obvious satisfaction:

> This proposed short notice will show that the march of practical science of late years has not been confined to the stupendous structures of tubular bridges, and the power of steam, nor even to making the lighting flights of electricity useful to mankind, but that the laws which regulate projectiles have not only claimed, but obtained, a share of that wonderful progress which distinguishes the present so far beyond every previous period of the world.[89]

In looking at Fox's later writings, particularly his series of lectures on primitive warfare, the similarity both in viewpoint and presentation are obvious. The same emphasis on gradualism, on the continuity of technological development and on the accelerated pace of that development would remain in fact the predominant elements of Fox's later so-called 'evolutionist' views. That is not to say that Chesney, Scoffern or Wilkinson, or indeed any of the other writers on military technology, need have been the only source. Developmental notions were, after all, an endemic feature of mid-Victorian thought, as stressed already. Even the sermonizing tone of Chesney's—and later Fox's—pronouncements were if anything typical of the time. But, still, their specific influence would appear undeniable.

With characteristic immodesty, however, Fox tended to present his own understanding as a product of his personal experience. In 1868, for example, he pointed out that 'my attention was drawn to the principle of continuity... by observing the very slow gradations of progress that were taking place at the time in the military weapons of our own country'. Elsewhere he wrote of 'the continuity observable in the various ideas submitted for adoption in the army of that time'[90], again suggesting that he was aware of what might be broadly classified as a developmental process long before the more general acceptance of evolutionist ideas in the wake of Darwin's Origin.

But while it would be naive to accept that Fox arrived at his conclusions independently, there is probably some truth to his assertions, at least in point of emphasis. In the course of his successive work at Woolwich, Enfield and Hythe, Fox and the others involved were required to test and consider literally hundreds of different models or adaptations before settling on the Enfield. Looking back in 1854 upon his three years' work, the 'slow gradations' of progress must have seemed readily and even frustratingly apparent. Furthermore, the whole aim of his work was to select a single weapon—to identify, in a sense, a single continuity. If not, then, the sale source of his developmental views, at least his experience helped underline their significance for him.

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[88] Scoffern, p. 1; cf. Fox 'Primitive Warfare', 1867, p. 620. 'Utopian' was a common appellation among military writers. See E.C. Wilford, Class Book for the School of Musketry, p. 39. Interestingly, Wilford was one of Fox's successors at Hythe.
[89] Chesney, pp. 258-9.
[90] Fox 'Further Remarks on the Hill Forts of Sussex', Archaeologia, 42 (1868), p. 71; 'Address, Bath, 1888' p. 826.

5. The Beginnings of the Collection

It was, according to Pitt Rivers, initially to illustrate such a developmental view of history that his well-known ethnological collection was first formed[91]. Precisely when it was begun is less clear. Pitt Rivers alludes at different times to both 1851 and 1852, but in each case is unclear whether he is referring to the initial inspiration for the collection, its actual inception, or its extension to objects other than muskets. It would appear that 1851 was the beginning of his musket or rifle collection and 1852 the beginning of his more ambitious scheme, but again that cannot be established with certainty. In the introduction to his work on Primitive Locks and Keys (1883), he states emphatically that 'the materials for this paper together with the rest of the museum, have been in the course of collection since the year 1851'. Some years earlier, however, he was equally emphatic about 1852, here referring, it seems, to its extension to exotic artefacts[92].

Pitt Rivers never attempted to be more precise and the impression is that he was intentionally vague in order to further his claims of originality. The fact that the first of his remarks were published over twenty years afterwards—at a time when he was already intent on presenting himself as a visionary evolutionist—should be taken into account as well. Throughout his writings, if without actually misrepresenting the facts, he could present his collection as having begun as early as 1851, he tended to do so. When referring to the collection more specifically, however, he tended to rely on the 1852 date[93]. Therefore, that date would seem to be the more likely one, although even that must be accepted with caution[94].

Unfortunately, there is little corroborative evidence in the form of contemporary letters or receipts to cast better light on Pitt Rivers' remarks. The four notebooks compiled by Pitt Rivers and now in the possession of the Oxford Museum offer no indication of the relative sequence of acquisition and appear to refer primarily to the

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[91] Pitt-Rivers, 'Address, Bath, 1888', 826. It has by now become common knowledge. See Street, p. 57. An article on the Pitt-Rivers Museum in the Oxford Times carried the subheading, 'The General's interest in guns led to the birth of a museum', Oxford Times, 29 Mar 1957.

[92] Pitt-Rivers, On the Development and Distribution of Primitive Locks and Keys (London: Chatto and Windus), title page; Fox, 'Principles of Classification', 294; Catalogue, p. xii.

[93] Another time, for example, he suggests it began in 1853. See 'Further Remarks on the Hill Forts of Sussex', p. 7l. Later writers have compounded the confusion. Penniman twice suggested that the collection was begun in 1851 at Pitt Rivers' 'house' at Bethna1 Green. See T.K. Penniman A Hundred Years, p. 71; 'A Note on the Beginning of Anthropology in Oxford', in Anthropology at Oxford (Oxford: Oxford Univ. Anthropological Society, 1953), p. 11; 'General Pitt-Rivers', Man, 46 (1946), No. 70. Glyn Daniel, evidently borrowing from Penniman, states that the collection was 'loaned' to Bethnal Green in 1851. A Hundred Years of Archaeology (London: Gerald Duckworth, 1950), p. 170. Most writers, including his contemporaries, accept the 1851 date. See Obituary, Pitt-Rivers, AJ 57 (1900), 174; Obituary, Pitt-Rivers, Times, 7 May 1900; R.R. Marett, Tylor (London: Chapman and Hall. 1936), p. 15; Frese, p. 50.

[94] Known as the Blue, Black and Red Books', PRM. The first and last are now bound as one volume. These have been examined by a number of people to see if any key to dates exists, but no pattern has yet been revealed. Personal interviews with Miss Beatrice Blackwood and Miss Elizabeth Sandford Gunn of the Pitt-Rivers staff, 1 Oct 1975.

gifts and purchases of a later date[95]. His Catalogue of 1874, which is really more of a handbook for visitors than a catalogue per se, only occasionally attaches a name or .a date to those few pieces which are in fact itemized[96]. Here again, it is unclear in many cases whether the date assigned refers to its acquisition or to the year it was discovered or purchased by someone else. Those pieces assigned years tend to date from the 1860s, and even they are too infrequent to be of any use in determining the collection's growth. Particularly unfortunate is the fact that the original musket collection (the last vestiges of which can still be viewed in the Museum) was to be described in Part III of the Catalogue, apart that was never published.

Despite, however, the somewhat conjectural nature of the collection's early history, it can be accepted, if only as a working hypothesis, that it was begun sometime in the early l850s and, from Pitt Rivers' own accounts, it began with a collection of firearms. To a young military officer with long-standing ties to the sporting traditions of the landed gentry, the idea of a private gun collection must have had an obvious appeal. Indeed, its nucleus could easily have been drawn from his personal assortment of fowling pieces and hunting guns the recreational accouterments of any young man of his class—some of which may already have been of considerable antiquity. With the introduction of one of the new Miniés, the first developmental series would simply have fallen into place.

The collection could really be said to have begun, however, after Fox started to fill the series out more conscientiously through the acquisition of some of the more recent service muskets. Those were extended backward, in turn, to include flintlocks, wheel locks, matchlocks and hand-cannons, some of which, Thomas Penniman, the Museum's second curator pointed out, were apparently made by Fox himself to fill in the gaps[97]. Others could be obtained cheaply at the time when in fact there were few people interested in collecting early firearms. Their cost rarely exceeded a few shillings[98].

The aim of Fox's collection was to illustrate the developmental history of firearms outlined in a lecture delivered in 1858, itself a redraft of his earlier talks to men at Hythe. Whether he actually used his collection for reference during the course of his first lectures at Hythe is not known, although it is not at all unlikely that he did so. The Hythe School itself formed a collection of firearms for purposes of instruction and Fox's later correspondent A. C. Haddon, explained that Fox had a part in its establishment[99]. Suggestively, as with Fox's own collection, the Hythe collection too would extend to include arms and antiquities other than muskets, eventually adding a number of exotic pieces[100].

The immediate model for Fox's collection, as well as that at the Hythe School, was of course the military armoury. Indeed, Fox's collection cannot be properly understood

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[95] The earliest date listed that may relate to the collection is of an Iron Umbro Shield found at Bury St. Edmunds in 1851, but Pitt-Rivers is unclear whether he acquired at this time or whether it was simply found then. Catalogue, p. 15.
[96] Penniman, A Note on the Beginning of Anthropology', p. 11.
[97] [Myatt], History of Small Arms School, Appendix D.
[98] A.C. Haddon, 'Pitt-Rivers', Obituary Notice, Nature, 42 (1900), 59.
[99] Interview with Major Frederick Myatt, 11 Jul 1980.
[100] Personal Communication, Major P.A.J. Wright, Grenadier Guards, 8 Jan 1980.

outside of that wider context. Soldiers had long shown a penchant for collecting, and most regimental messes and common rooms contained at least a sprinkling of antique and exotic pieces in addition to their locked stores of standing arms; the Guards Club, where Fox spent much of his time when in London, was no different[101]. Such collections were typically composed of mementos or trophies of past engagements and were seen primarily as decorative embellishments. But in a number of institutions, such as Sandhurst or Woolwich, and, most importantly, at the United Service Institution in London, they were conceived of, at least by the period in which Fox was becoming interested, as having an educational value as well.

Probably the most obvious example on armoury of such a type was that of the Tower of London, where Fox had been stationed during the late 1840s. Still used principally as an arsenal during the time Fox was there, the Tower also contained a large number of pieces of purely antiquarian interest, much as it does today. Those had been rearranged by the historian and arms collector, Samuel Rush Meyrick (1783-1848), as part of a more general reorganization of the Tower's stores, in 1825[102]. Meyrick, part of whose own collection was eventually obtained by Fox, adopted what might be termed an ornamental plan for the display of historical arms, grouping swords, halberds, axes and so on into circular or star-shaped patterns, or simply placing them in ranked order along the walls. His scheme had been widely emulated and in fact became the standard model for other military exhibits in Britain. One writer, referring to the armouries of Chester Castle, reorganized explicitly in response to Meyrick's example, declared enthusiastically that such an arrangement provided 'an interesting exhibition of beauty, order and cleanliness'[103]. During the 1840s and 50s, however, in the aftermath of the fire, the Tower collections began to be organized in a more chronological fashion, a process completed during the 1860s by Meyrick's friend and executor, J. R. Planché (1796-1880)[104]. In large part the choice was a response to complaints on the part of the public that the collection was simply too confusing to be

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[101] A New and Improved History and Description of the Tower of London (London: W.Batson, 1831); Sketches of the Tower of London (and) A Guide to the Armouries (London: J. Wheeler, 1864); Walter Thornbury and Edward Walford, Old and New London, (London: Cassell, Pette and Galpin, 1880), pp. 81-85; Donald Sutherland Gower, The Tower of London (London: George Bell and Sons, 1901-2), II, 142-45; Harold Arthur Dillon, Illustrated Guide to the Armouries, Tower of London (London: HMSO, 1910); Charles John Ffoulks, The Tower of London (London: HMSO, 1924). On Meyrick's work: Gentleman's Magazine, 96, Part 2 (1826), 159, 197; 97, Part 1 (1827),195-6; NS 6, Part 1 (1836), 492-94; Meyrick was also the author of A Critical Inquiry Into Antient [*sic*] Armour (1824), 2nd ed. (London: H.C. Bohn, 1842), an influential reference work on medieval arms. See DNB entry for Meyrick and for Meyrick and W.J. Loftie, Authorized Guide to the Tower of London (London: Harrison for HMSO, 1888).

[102] Hemingway, History of the City of Chester, (Chester: J. Fletcher, 1831), I, 179.

[103] J.R. Planché, Recollections and Reflections, (London: Tinsley Brothers, 1872), II, 144-46,168-72; Illustrated London News, January 1869. Planché, a well-known playwright and costume designer, also wrote several works on British costume: A Complete View of the Dress and Habits of the People of England, new ed., 3 vols. in 2, (London: n.p., 1842); A History of British Costume (London: G. Cox, 1847); A Cyclopaedia of Costume, 2 vols. (London: Chatto and Windus, 1876-1879).

[104] London Interiors (1841; rpt. London: D. Orner Smith, 1851), p. 59. As with Pitt-Rivers he was struck by 'the gradual progression of form and ornament' and, significantly, conveyed this through the Tower collection, as well. Planché, Recollections II, 168. See DNB entry for Planché.

of educational value; a chronological system at once made the collection readily intelligible and dispensed with the need to provide attendants in each gallery to explain exhibits[105]. Roughly corresponding to a comparable shift in approach among other museums, the Tower's decision offered a striking suggestion of what could be done, as Fox, who used the collection for reference, must have realized[106].

Another important model for Fox was that offered by the well-known Rotunda at Woolwich. Again, Fox had been posted there shortly before the time he actually began his own collection and apparently used it for reference[107]. As with the later Hythe collection, the Woolwich armoury was intended primarily as a resource for instruction, containing examples of both field pieces and small arms for the use of cadets training at the Royal Military Academy for Artillery and Engineers, roughly the equivalent of Sandhurst for those more specialized divisions of the army. The most striking thing about the Woolwich collection was its building, a large rotunda with two levels, the small arms being organized around the periphery of both and larger pieces being placed at the centre. Built in the l820s along the lines established by a number of early London popular exhibits, the Rotunda offered an exact parallel to that later proposed by Pitt Rivers for his own collection, down to the inclusion of a so-called 'typological' scheme.

When Fox began training at Hythe he clearly brought his ideas on the organization of military collections with him, and imparted them through his work there. Initially, the collection at Hythe was placed in a lecture room, and photographs from the latter part of the century show a range of rifles and muskets displayed at the stage end of the room for apparent reference during lectures. Other types of exhibits remained limited in scope, however, consisting mostly of European arms, such as crossbows and longbows, used to demonstrate basic principles of projectiles. Exotic weapons, in turn, were limited to a few spears and arrows. Fox's own collection, then, was built up alongside that of Hythe. The only difference was in its relative proportions and its increasing reliance on exotic pieces rather than antique ones to illustrate the 'advance' of arms[108].

6. Extension of the Collection

Fox first began to broaden the scope of his collection around 1852, when he first acquired a number of new pieces to his rifle series which 'showed a connection of form'[109]. The interesting point is that the emphasis appears to have been on the exotic

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[105] Fox, 'Primitive Warfare I', p. 637, etc.
[106] Fox, 'Improvement of the Rifle', p. 468; Catalogue, pp. 125-26.
[107] Barnard, pp. 525-31, 585-96. Francis Duncan, History of the Royal Regiment of Artillery (London: John Murray, 1879), II, 135; A. Forbes, A History of the Army Ordnance Services, II (London: The Medici Society 1929), 31.
[108] Myatt, Appendix D.; Miller, frontispiece. Comparable modern collections had been established in France and in other countries as well. See Notice sur les Collections ... Musée de L'Artillerie (Paris: Bachelior, 1843); O. Penguilly, Catalogue des Collections ... Musée d'Artillerie (Paris: Charles de Mourges Freres, 1862); M. Prosig, Catalogue du Musée D'armes de la cour Imperiale (Vienna: n.p., 1870). For a general overview, see Charles H. Ashdown, Armour and Weapons in the Middle Ages (London: George G. Harrap, 1925); and Claude Blair, European and American Arms c. 1100-1850 (London: B.T. Batsford, 1962).
[109] 'Principles of classification' p. 294.

examples rather than antiquities, but that may well have been a factor of their relative cost. Antique arms, particularly, those of the Middle Ages, had enjoyed an enormous popularity throughout the first half of the nineteenth century. Sir Walter Scott's novels, the famous Eglinton tournament, and even the proselytizing efforts of the High Church Ecclesiologists had all, in their way, contributed to that enthusiasm; and though by mid-century the public's widespread fascination with the Middle Ages appears to have diminished in part, medieval antiquities were still well beyond the financial reach of all but the very wealthy or profoundly dedicated[110]. A suit of amour belonging to Samuel Meyrick, for example, sold for over £1000 in the 1870s, and relatively undistinguished halberds or crossbows ran to well over £100. Fox, as a young and uninitiated collector dependent on his army pay and a small allowance from his mother, must simply have found the cost prohibitive[111].

Exotic weapons, however, in contrast to medieval ones attracted few buyers and could be obtained quite cheaply. The 1850s witnessed in fact the beginning of a flood of exotic materials pouring into Britain from its mercantile and political reaches[112]. As a result, many small shops, especially those of major ports such as London, which Fox apparently frequented, included numerous souvenirs from exotic parts of the world among their other wares. The objects themselves were easily acquired abroad, and one anthropologist in 1874, could remember when a South Sea club, 'not unlike our ancient weapons', as he pointed out, costing £5 in Fiji could be obtained from the natives for' an empty beer or pickle bottle'[113]. During the same period their retail value was little higher, and few of the more exclusive antiquarian or curiosity shops, such as those along Wardour Street, London, bothered to stock the productions of contemporary peoples along with their other merchandise, as they were to do at a later date[114]. Christie's and Sotheby's, whose auction houses were regularly attended by Fox

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[110] The best overview of transitory collecting tastes is found in John Steegman, Victorian Taste (1950; rpt. Cambridge: MIT Press, 1971), pp. 93-101. Also, Ian Anstruther, The Knight and the Umbrella (London: G. Bles, 1963).

[111] Christies Auction Catalogues, Catalogue of Armour and Arms, the property of the Late Hereditary Champion...also some Armour and Arms from the Meyrick and Other Collections (London: Christie, Mason and Woods, July 1877). I would like to again thank Peter Arbuthnot of Christie's staff for helping me with the Christie Archives. Some earlier examples can be found in Catalogue of his collection of Firearms and costly Oriental and European Weapons…property of Frederick Augustus, Duke of Albany (London: Privately Printed, March 1827); anon. Catalogue of the Most Extensive and Instructive Collection of Ancient Arms and Armours…Property of Barnard Brocas (London: George Robbins, March 1834). Also see F.H. Cripps-Day, A Record of Armour Sales, 1881-1924 (London: George Bell, 1925); and Guy Francis Laking, A Record of European Arms through Seven Centuries, 5 vols. (London: Bell, 1920-22).

[112] See Burn, p. 64, on opening trade. 'Exotica' first fashionable for home decorating beginning again in the l850s. See Alison Adburghham, Liberty's: A Biography of a Shop (London: George Allen and Unwin, 1975), for a short account of changing decorative taste.

[113] Anonymous Review of the Godeffroy Museum of Hamburg, JRAI, 9 (1879), 462. The Rev. John H. Weeks recalled buying 'images ... for a few brass rods'. 'Anthropological Note on the Bangala of the Upper Congo River', JRAI, 40 (1910), 376. The best account of acquisitions in the field, although of a later date, is found in A.C. Haddon, Head Hunters, Black, White and Brown, Abr. ed. (London: Watts, 1932), pp. 27, 37, 55.

[114] Tallis's Illustrated London, II (London: John Tallis [1852]), 37; Thornbury, IV, 238. By the end of the century this had changed considerably and on 29 Jun 1899 Canon Greenwell wrote

or those buying for him during the 1880s and 1890s, did not, in fact, begin to deal with ethnographical materials on any large scale until that date. Even then they tended to concentrate on prized art pieces, such as the famous Benin bronzes, rather than on miscellaneous clubs and spears[115]. Probably the most graphic illustration of the low esteem in which exotic curiosities were held is the well-known fact that church mission societies often discarded or burned materials sent back by their field missionaries after they had been displayed to church groups and subscribers[116].

Of Fox's own collecting interests we know only that he avoided professional dealers and preferred to purchase individual pieces rather than complete collections in order to acquire only those pieces he felt contributed to his overall scheme. He also selected what he referred to as 'the commoner class of objects' rather than 'beautiful' or 'unique' ones, presumably because of their low cost or for what he considered their more conventional or typical character[117]. Fox's one-time claim to have selected those 'firsthand' is somewhat misleading[118]. Presumably he refers to having acquired his collection directly from returning travellers rather than through intermediaries such as dealers. The suggestion that he obtained his first pieces exclusively through his own travels, which were at that date rather limited—and which would in fact remain so—cannot be credited. It is certainly possible, however, that relatives, such as Henry or Johnny Stanley, contributed souvenirs from their travels in the Middle East and India. Similarly, it is likely that other officers who knew of his interest provided him with additional pieces. The Grenadier Guards, for example, had only recently returned from several years in Canada when Fox took his commission, and it is possible that some of his first North American pieces were acquired in that way. This, of course, is purely speculative, although we do know that this is how the collection tended to be built up in later years. Finally, his travels on the Continent while researching his drill code may also have given him some opportunity to add to his collection, particularly to the European arms, but once again, that is guesswork.

What is clear, however, is that Fox was attempting to build a representative collection of weapons and, at that: early date, a representative collection of what he referred to as !missile weapons' much as was at Hythe School. Even in 1874, when the collection was first made public, such items as crossbows, bows, spears and slings, all of them

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to Pitt-Rivers 'Ethnological things from many parts of the world must be getting difficult to get', SSW, PRP, Corres.

[115] Personal Communication from J. A. Floyd, Chairman, Christies, 8 Jan 1980; Peter Arbuthnot 8 Feb 1980; and Christies Auctioneers Catalogues. Pitt-Rivers own purchases are recorded in St. George Gray, 'Recollections on the Occasion of the Five Hundredth Meeting of the Oxford Univ. Anthrop. Soc. 'in Anthropology at Oxford, p. 4. Also, PRP, p. 115. Rare sales during the early part of the century realized far higher prices. A 'very rare specimen of a New Zealand war weapon' sold for over t 20 in 1821. A Catalogue…Miniatures...Ancient Armour, and of Rare and Costly Weapons...(belonging to) the Proprietor of the Gothic Hall (London: Christie, March 1821).

[116] B.A.L. Cranstone and H.J. Gowers, 'The Tahitian Mourner's Dress: A Discovery and a Description', BMQ, 32 (1968), 143.

[117] Fox, 'Principles of Classification', p. 294; Catalogue, p. X11. He later wrote to A.W. Franks, 'I have confined myself mainly to common forms in which chiefly, continuity can be traced, and have avoided giving large sums for rare things... ', Pitt-Rivers, letter to A.W. Franks, 27 June 1880.

[118] Reprinted in the Oxford Univ. Gazette, 6 Feb 1883.

'missile' or 'projectile weapons, as C.P. Kingsbury termed them[119], were still the most prominent among the many other weapons in his collection. Those were, of course, the logical extension of his muskets, both figuratively and historically, as Fox himself suggested in his lecture on rifles in 1858. As he explained: 'My lecture breaks in upon the history of missile weapons at a comparatively recent date'[120]. By the same token 'earlier', or what were prescribed as more technically primitive, weapons were seen as a necessary preamble to the muskets.

Again, the parallel is suggested by the writings of others on military technology of the same period. While a number of different weapons are typically discussed, 'missile weapons' are given the most attention. As Scoffern points out: 'Amongst the many improvements in the art of war, those relating to missile weapons, by which men are slaughtered at a distance, afford the greatest scope for scientific investigation, and are of the greatest interest to general readers'[121]. Fox was simply following the same pattern.

To illustrate their histories both Fox and other military writers drew their examples from a variety of sources. Examples of medieval weapons were usually taken from the more conventional chronicles of military history of the late eighteenth and early nineteenth centuries, with excerpts from Grose's History of the British Army, one of Fox's principal sources, predominating[122]. Literary examples were augmented, in turn, by references to examples in existing collections, such as the Tower. For ancient arms, the Bible and classical sources were typically cited. Slings, for example, recalled David and Goliath; javelins suggested Homer's warriors and Roman legionnaires. Again, as in Fox's case, whenever examples could be found in contemporary collections, those too, were usually mentioned.

The most suggestive pattern in terms of Fox's collection is the fact that the weapons of exotic peoples were usually introduced for comparative purposes. Wilkinson pointed out that, 'slings are still used by the children of India to drive birds from the corn-fields'. Chesney wrote of 'the common sling, which is still retained by the Arabs'. Modern Persian, Turkish, and Tartar bows were compared by Wilkinson to what are categorized as the 'Scythian' bows of ancient Greece. Scoffern made the same comparison, and, again following Wilkinson, called attention to the use of atlatls by Australian aborigines, pointing to their absence in the Classical world[123]. In drawing such parallels or contrasts, it was suggested that exotic examples were not merely representations of ancient weapons but that they were in some sense survivals of older forms. By the same token, those who made them were viewed in a direct relationship to the civilized peoples of Europe at their own different stages of 'development'. As Scoffern explained: 'Clubs and wood spears are emblems of savage life,—of men scarce a step removed from the prowling denizens of the forest. Bows and slings are symbols of a higher grade,—of men whose minds had begun to expand and grasp the

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[119] Kingsbury, p. 3.
[120] 'Improvement of the Rifle', p. 455.
[121] Scoffern, p. 2.
[122] Francis Grose, Military Antiquities Respecting a History of the British Army, 2 vols. (London: S. Hooper, 1786-8) and later editions. See Wilkinson, Engines, p. 15, in particular.
[123] Wilkinson, Engines, pp. 7-8; Chesney, p. 18; Wilkinson, Engines, p. 11; Scoffern, p. 6.

first principles of mechanical science'[124]. Gunpowder and firearms were, of course, representative of the highest state. Still, the relationship of social forms and technology was never developed in any systematic way by Scoffern, as it would be later among the evolutionary anthropologists of the late l860s and 70s. His interests always returned, as did Fox's, to the objects themselves.

One consideration which recurred throughout works such as those of Scoffern and Wilkinson, was the problem of origins, and again, it was that problem which remained central to Fox's interests as well. To a certain extent it was a matter of academic interest: each writer was merely fulfilling the historian's obligation to trace out dates, antecedents and influences. In another sense, however, the preoccupation with precedents was a reflection of the contemporary concern over the priority of more recent technological improvements; the flagrant competitiveness among European nations was simply being projected into another sphere. The origin and distribution of the Scythian bow was, for example, addressed in great detail by Wilkinson, who contrasted it with what he considered to be the far inferior model used by the Eskimo, Lapps and certain peoples of Northern Eurasia. The latter type was considered to have had an independent origin, its shape having been derived 'naturally', as Fox himself later emphasized, from the material from which it was manufactured. The introduction of Porys steel was treated by Wilkinson in a similar way. Discovered in India through a fortuitous combination of manufacturing techniques and materials, its knowledge was communicated via the Red Sea first to Egypt and then to Greece where it was first used with advantage in the manufacture of weapons. More recently, knowledge of its manufacture had descended to modern Europe where it had been applied with even more far-reaching results, in the manufacture of swords in particular[125]. Scoffern, Chesney and White-Jervis repeated the theme, chronicling the development of a range of weapons from ballistics to bayonets. Consistently, the weapons of Asia and Africa—and to a lesser extent Australia and America—were treated as offshoots of a more general course of progress of which European civilization was, as in Fox's case, the principal beneficiary.

In some instances, though, exotic weapons appear to have diverged from the accepted continuity, exhibiting characteristics which did not occur among known historical arms. Such examples, however, while of obvious interest both to Fox and others, were generally dismissed as fortuitous. The Australian boomerang, one of the main components of Fox's later collection, was discussed at length by Scoffern and Wilkinson, both of whom stressed that it was less 'magical' than many travellers supposed and that its advantageous form was more the product of material available than the result of inventiveness on the part of the aborigines[126]. Again, the still esteemed Damascus swords were shown to have obtained their temper and ornate surface patterning by an ill-comprehended process of manufacture; those were, Wilkinson pointed out, 'a result of nature, and not of art', again anticipating a phrase which was recurrent in Fox's later writings[127]. The invention of gunpowder was shown

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[124] Scoffern, p. 221.
[125] Wilkinson, Engines, pp. 11-16, 184-210; and On the Cause of the External Pattern of Watering of the Damascus Sword Blades (London: n.p. [1839]).
[126] Scoffern, p. 6; Wilkinson, Engines, pp. 250-25.
[127] Wilkinson, p. 210.

by Chesney to be the outcome of a sequence of accidents. Moreover, as he pointed out, its military value was never understood by the Chinese themselves, who simply used it for fireworks[128]. It was only once such a discovery was passed into what was considered the mainstream of progress that its latent potential could be realized. Otherwise, however useful they might be, such innovations remained merely curiosities.

Yet, even as curiosities, exotic inventions and weapons were never devoid of interest for such writers. Indeed, examples such as Turkish scimitars, Japanese swords and Indian and Persian daggers were often introduced, if only to call attention to their beauty or craftsmanship. Although Wilkinson dismissed the notion that the Damascus sword-blades were the result of superior knowledge of the process of steel manufacture, he still frankly acknowledged 'their great external beauty' and 'their infinitely superior...temper and quality'[129]. Other weapons less renowned or beautiful were often singled out for their ingenuity. Again, Wilkinson discussed 'an ingenious self-charged cross-bow... of Cingalese manufacture' seen at the United Service Institution: 'It strings itself, and discharges two arrows each time in rapid succession until the magazine is exhausted, which contains twelve, and may be replenished in a moment'[130]. While the problem of its origin was touched upon (it was suggested that it may have been based on a Portuguese prototype), it is evident that it was the sheer fact of its inventiveness which engaged his interest, as it did that of his contemporaries, Fox among them.

Fox's collection was formed, then, in the context of studies such as those of Scoffern and Wilkinson, and tended to reflect many of the same preoccupations. He was concerned, as they were, with the perceived continuity of arms development and with the expression of that continuity through representative examples. Moreover, many of the specific problems touched upon, particularly by Wilkinson and Scoffern, such as the origin and distribution of different bows, the manufacture of boomerangs, the beginnings of metallurgy, even the history of the bayonet were, in turn, addressed by Fox through both his collection and his writings. As with other weapons historians, Fox assumed that exotic weapons were roughly comparable to historical examples. They were, therefore, fundamentally archaic. That is an important point to realize; for though the collection itself would eventually contain a preponderance of ethnographical pieces, they were valued, particularly at first, for the light they shed on the rise of European civilisation and technology, not for what they said about the nature of the contemporary peoples who manufactured them. It was only as part of a continuous sequence, stretching, in a sense, to the technology and arms of the present day, that such objects acquired their significance.

It is often difficult for us now to appreciate fully the fascination which the mere fact of material contrivance held for the mid-Victorian mind. The overstuffed interiors, the whatnot cabinets, the mantlepieces lined with bric-a-brac, the elaborate nature of

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[128] John Stuart Mill, Rev. of de Gulgnes' Voyage a Peking, Edinburgh Review, 14 (1809), 425.
[129] Wilkinson, Damascus Sword Blades, p. 1.
[130] Wilkinson, Engines, p. 27.

ornament and design all attest to an absorption that seems almost alien in retrospect[131]. Fox was living, it must be realized, in an era of profound technological change. Advances in military technology had been marked by comparable innovations in every other field. Steamships, railroads, electric telegraphs, coal-gas for lighting, photography and countless other new processes and devices had appeared over the course of a few years. Whole industries had sprung up, it must have seemed, almost overnight, radically transforming the predominantly agricultural world of Fox's youth. That his attention should have centred on the most tangible expressions of that condition—the products of man and industry—is hardly surprising. Fox's collection was itself testimony to the high regard, the atmosphere of near veneration with which each new contrivance was greeted.

One other important parallel suggests itself in the latter context. The principal event of 1851, or the year in which Fox claims to have begun his collection, was the Great Exhibition of the Works of Art of All Nations, held in Hyde Park during the summer months. Initiated by Prince Albert to illustrate 'the living scroll of human progress'[132], the Exhibition was without doubt the preeminent symbol of the new, and expressly materialist age, a symbol strengthened by the engineer Joseph Paxton's unprecedented glass and iron 'Palace'. In all, it contained thirteen thousand separate exhibits—'scientifically' arranged into four main sections (raw materials, mechanical inventions, manufactures and sculpture and the plastic and fine arts), and thirty subsidiary categories, along the lines roughly suggestive of Fox's own later scheme. Among manufactured goods, for example, were categories for silver work, terra-cotta wares, table linens, ornamental ironwork, all defined by 'type' or 'use', as would be the divisions of Fox's collection. Furthermore, the whole scheme was intended to convey a similar message—to provide, as Robert Hunt, writing of the 'Science of Exhibitions' explained, 'a striking record of all that the world has done', or as the Lord Mayor of London described it, 'a true test of the point of development at which the whole of mankind has arrived…'[133]. However indirectly its message may have been imparted to Fox, the lesson was the same—to illustrate the history of the technology, and, as Fox later put it 'to trace backwards the arts of man in unbroken continuity towards their source'[134].

But while the Great Exhibition could be said to have provided the backdrop for Fox's ideas, it is still the rifle which provides the most important key to his early collecting

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[131] Burn, p. 41. Also stressed in R.L. Peters, 'Algernon Charles Swinburne and the Use of Integral detail', Victorian Studies, 5 (1967), 289-302.

[132] Art Journal Catalogue of the Great Exhibition (London: The Society of Arts, 1851). Descriptions of the Exhibition and its symbolic importance abound and hardly require discussion here. For the general background see Nikolaus Pevsner, Pioneers of Modern Design (1936: rpt. Harmondsworth, Middlesex: Penguin Books, 1949); The Sources of Modern Design (New York: Praeger, 1968). Also see Christopher Hobhouse, 1851 and the Crystal Palace (London: John Murray, 1950); and E.L. Woodward, '1851 and the Visibility of Progress', in Ideas and Beliefs of the Victorians, pp. 53-62. High Victorian Design (London: Architectural Press, 1951). Also, Robert Furneaux Jordan, Victorian Architecture (Harmondsworth, Middlesex: Penguin Books, 1966), pp. 110-136; and Steegman, pp. 207-32; contemporary descriptions are too numerous to mention separately.

[133] Robert Hunt, 'The Science of the Exhibition', Art Journal Catalogue, p. i; Lord Farncombe, Art Journal Catalogue, p. xii.

[134] Fox, 'Primitive Warfare II', p. 403.

interests. Arranged together in roughly chronological sequence, Fox's firearms collection provided a tangible illustration of what he understood as the principle of continuity. While each example or model differed little from that before or after it, if the first and last of the series were compared, the difference was striking. However simplistic such a demonstration might seem to us today, for Fox the realization was obviously a profound one. The history of the rifle's development suggested, in turn, a model for the arrangement of other series, each of which was intended to demonstrate the same truth—what he referred to as 'the progress of humanity'[135]. Even more importantly, Fox's collection served as a vivid representation of such progress, a paradigm for his understanding of what was later incorporated under the general heading of 'evolution' or 'evolutionism'. Although that understanding was repeatedly reassessed in the light of Fox's later involvement as an archaeologist and ethnologist, in a more fundamental sense, his views would always refer back to his work at mid-century.

[135] Fox, Catalogue, p. xi.