Publications Produced by the Francis Galton Laboratory for National Eugenics

by

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The Francis Galton Laboratory for National Eugenics (GLNE) began in 1907 at University of London, University College, under the directorship of Professor Karl Pearson (1857–1936). Pearson's intent was an independent research centre to shift eugenics away from a topic of anecdote and towards a quantitative and rigorous science capable of producing strong policy advice built upon rigorous research. GLNE was the product of a close relationship between Karl Pearson and Francis Galton (1822–1911). Galton was a Victorian gentleman of science with wide-ranging subject interests, from meteorology to composite photography and fingerprinting.[1] Always an 'ideas man', Galton's attentions were unified by a desire to translate any subject into the language and methods of science. His investigation of heredity illustrated this proclivity, beginning in the 1860s with massive data collection that led to his 1869 book, *Hereditary Genius*. That work was followed by further investigations into patterns of inheritance during the 1870s and beyond. Galton's advocacy of eugenics grew from a convergence of these efforts to find general laws of heredity (which ultimately failed) and a perceived crisis over national deterioration.[2]

Galton served as mentor to numerous men in the next generation. Some were linked to the growing professional class of university-based scientists. Others were gentlemen of independent means and reputation who

[1] Among Galton biographies, several focus specifically on his research into heredity and its critical reception, including Ruth Schwartz Cowan, *Sir Francis Galton and the Study of Heredity in the Nineteenth Century* (New York, NY: Garland, 1984); Nicholas Wright Gillham, *A Life of Sir Francis Galton: From African Exploration to the Birth of Eugenics* (Oxford: Oxford University Press, 2001); and John Waller, *The Social and Intellectual Origins of Sir Francis Galton's (1822–1911) Ideas on Heredity and Eugenics* (London: University College London, 2001).

[2] The empirical project presented in Francis Galton, *Hereditary Genius: An Enquiry into Its Laws and Consequences* (London: Macmillan, 1869) was preceded by a theoretical argument in Francis Galton, 'Hereditary Character and Talent', *Macmillan's Magazine*, 12 (1865), 157–66, 318–27.

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cultivated interests in science just as Galton himself had done. Pearson was one of Galton's university men. After studying at Cambridge (third wrangler in mathematics in 1879) and in Germany, then reading law at Inner Temple, Karl Pearson was appointed Goldsmid Chair of Applied Mathematics and Mechanics at University College in 1884.[3] During the next two decades Pearson established himself as a leader in the development of statistical concepts and methods, especially methods for correlation. Pearson worked in collaboration with Galton and another of Galton's university men, Walter Frank Raphael Weldon (1860–1906), mainly on zoological problems.[4] Pearson's contributions included an eighteen-paper series, 'Mathematical Contributions to the Theory of Evolution', between 1893–1904. Early papers in this series (and Galton's lobbying) were key to Pearson's election as Fellow of the Royal Society of London in 1896.

To further their joint interests, these three men launched the journal, *Biometrika*, in 1901. Initial underwriting came from Cambridge University Press, with additional assistance from patrons, including Galton. Pearson and Weldon served as editors.[5] Pearson proved an effective entrepreneur through patronage. In 1903, he secured control of a substantial donation from the Worshipful Company of Drapers to University of London.[6] Pearson used this to purchase relief from the yoke of routine teaching and administration. He also created a new research group focused on statistics and the application of biometric methods to disease. The Drapers' donation funded a growing enterprise of new staff, new projects, and new publications. Pearson's strategic goal was to secure a university footing both for biometry as a subject and for statistics as an academic discipline. At this point, eugenics was not a significant element of his university research programme.

[3] Theodore M. Porter, *Karl Pearson: The Scientific Life in a Statistical Age* (Princeton, NJ: Princeton University Press, 2004) and M. Eileen Magnello, 'Karl Pearson and the Establishment of Mathematical Statistics', *International Statistical Review*, 77 (2009), 3–29. Scholars disagree on the relationship between Pearson's mathematical work and his eugenics advocacy: Magnello separates the two; Porter and MacKenzie join them: M. Eileen Magnello, 'The Non-Correlation of Biometrics and Eugenics: Rival Forms of Laboratory Work in Karl Pearson's Career at University College London', *History of Science*, 37 (1999), 79–106; Porter, *Karl Pearson*; Donald MacKenzie, *Statistics in Britain, 1865–1930: The Social Construction of Scientific Knowledge* (Edinburgh: Edinburgh University Press, 1981). Yule disagreed with Pearson's eugenics advocacy and proposed a middle ground: G. Udny Yule, and L. N. G. Filon, 'Karl Pearson (1857–1936)', *Obituary Notices of Fellows of the Royal Society of London*, 2 (1936), 72–110.

[4] Karl Pearson, 'Walter Frank Raphael Weldon (1860–1906)', *Biometrika*, 5 (1906), 1–52, and M. Eileen Magnello, 'Karl Pearson's Gresham Lectures: W. F. R. Weldon, Speciation, and the Origins of Pearsonian Statistics', *British Journal for the History of Science*, 29 (1996), 43–63.

[5] Several studies examine Pearson's period as editor of *Biometrika*: John Aldrich, 'Karl Pearson's "Biometrika", 1901–36', *Biometrika*, 100 (2013), 3–15, and Yule and Filon, 'Karl Pearson'.

[6] A detailed investigation of the GLNE, Pearson, and the laboratory's research is provided by Lyndsay Andrew Farrall, 'The Origins and Growth of the English Eugenics Movement, 1865–1925', PhD diss. (Indiana University Bloomington, IN, 1969). This was reprinted in book form in 1985 by Garland Publishing in the History of Hereditarian Thought Series. It was reprinted again in 2019 by UCL Department of Science and Technology Studies (STS) in the STS Occasional Papers series.

Weldon's unexpected death in 1906 was a crushing blow to Galton and Pearson; also, to their ambitions for biometry. After 1906, collaboration between Galton and Pearson turned increasingly to the subjects of eugenics and national (i.e. racial) deterioration. Galton had been reviving his eugenics-motivated work in the preceding years. For instance, with Pearson's sponsorship, in 1904 he arranged for University of London to offer facilities for a modest research group (approved on the condition Galton paid all expenses).[7] Galton was an absentee director, however, and the project collapsed when its sole research fellow resigned in 1906. Galton begged Pearson to step in with leadership to save his project.

Once again showing his entrepreneurial skills, Pearson transformed Galton's project into something comparable in scale to what he now called the 'Biometric Laboratory'. His proposal to help Galton became the GLNE. This officially launched in 1907, absorbing staff and projects from Galton's Eugenics Record Office and absorbing the subsidy Galton committed for that work.[8] Galton was so pleased with Pearson's proposal, he changed his will to bequeath a substantial legacy for the GLNE and for Pearson to continue as director. After Galton's death in 1911, the university responded by creating a Department of Applied Statistics, naming Pearson for its head, and transferring Pearson's university appointment from the Goldsmid chair to a new one, the Francis Galton Professor of Eugenics.[9] Pearson proudly admitted to writing this element of Galton's will.[10] After these changes took effect in 1911, Pearson was directing two research groups as well as the university department created to administer them.

Both the 'Biometric Laboratory' and the 'Eugenics Laboratory' (i.e. GLNE) produced publications in series under imprints of each Laboratory. Each series carried explicit branding associating with university, department, and laboratory. Pearson was proud of his ability to create academic niches defined by his own research vision. He also sought to differentiate the work of his groups against (what he took to be) less rigorous competitors and anecdotally-driven amateurs.

Pearson authored a considerable volume of work over his career.[11] He used external outlets for some of his writing. However, after about 1900, Pearson evolved into something of a publisher in his own right, creating new avenues for himself, his staff, and the research programmes he pursued.

[7] Farrall, *Origins and Growth of the English Eugenics Movement*, pp. 116–118.

[8] ibid. p. 108. For a 'Proposed Draft Scheme', see a letter of 22 December 1906 from Pearson to Galton for GLNE, in Karl Pearson, *The Life, Letters, and Labours of Francis Galton. Volume 3a. Correlation, Personal Identification, and Eugenics* (Cambridge: Cambridge University Press, 1930). See also Karl Pearson, 'The Francis Galton Laboratory of National Eugenics', *Science*, 34 (1911), 799–800.

[9] Anonymous, 'The Galton Chair of Eugenics', *Science*, 33 (1911), 480–81.

[10] Joe Cain, 'Eugenics Money at UCL from Francis Galton' (London: profjoecain.net, 2019). URL: https://profjoecain.net/eugenics-money-ucl-university-college-london.

[11] *A Bibliography of the Statistical and Other Writings of Karl Pearson*, ed. by Geoffrey McKay Morant, and B. L. Welch (Cambridge: Cambridge University Press, 1939).

These avenues gave Pearson enormous freedom to avoid critics in peer review and to shape discourse as he thought appropriate.

Patronage from the Worshipful Company of Drapers paid for publishing associated with the Biometric Laboratory, adding capacity beyond *Biometrika* and drawing attention to the Laboratory as a unit. Eventually, Pearson used funds from the Drapers to support three series under the title 'Biometric Laboratory Publications. Drapers' Company Research Memoirs': (1) Series A. Technical Series, (2) Series B. Biometric Series, and (3) Series C. Studies in National Deterioration. His strategy for GLNE used similar tactics and used money provided by Galton's donations.

Each series Pearson created through his Laboratories had a niche *raison d'être*; however, over time, differentiation broke down. Probably, this was rooted in the administrative need to balance costs against available funds in different budgets. The prime example was Pearson's affiliation of the *Studies in National Deterioration* series with the Biometric Laboratory. On the surface, the connection seems weak. However, *Studies* conveniently allowed Pearson to transfer some production costs from the smaller budget of GLNE to the larger budget of Biometric Laboratory. (In this paper, it is treated as a de facto GLNE publication.) Another example was his decision to place substantial research publications on albinism in *Series B: Biometric Series*.[12] As the pace of publication slowed in particular GLNE series (Table 2), some of Pearson's other choices for publishing venues are explained by his wanting to keep up the appearance that all series were still active.

GLNE as a publishing business

Table 1 lists the main series published by GLNE as it became a publishing business. The laboratory produced no standalone books. Income from sales was put back into publishing programmes. For its first decade of publishing, GLNE produced publications as privately printed separates operating as a self-referential network of publications. Endpapers were dense with cross-marketing. Note that there was double counting in the *Memoirs* serial, with forty-two parts catalogued of which twenty-four were co-listed in the *Treasury* serial, leaving only eighteen (43%) non-duplicated titles.

Until the end of the Great War, GLNE publications were produced by Dulau and Company, London, which had offices in Soho. This British publisher operated between 1874 and 1922. After the War, Pearson replaced Dulau and Company with Cambridge University Press, which also pub-

[12] Karl Pearson, E. Nettleship, and C. H. Usher, *A Monograph on Albinism in Man. Text, Part I.* Atlas, Part I. (London: Cambridge University Press, 1911); Karl Pearson, E. Nettleship, and C. H. Usher, *A Monograph on Albinism in Man. Text, Part Ii. Atlas, Part II* (London: Cambridge University Press, 1913); Karl Pearson, E. Nettleship, and C. H. Usher, *A Monograph on Albinism in Man. Text, Part IV. Atlas, Part IV* (London: Cambridge University Press, 1913).

lished *Biometrika*. Both companies distributed materials to institutional subscribers and regular buyers. GLNE staff also maintained subscription lists, sold separates on application, and sold ancillary materials. Selling publications and ancillary materials provided a non-trivial revenue stream back into GLNE. This explains Pearson's regular use of reissues and new editions. Most GLNE publications remained available for purchase decades after their first issue.

The cumulative total production of numbers within GLNE serials is shown in Table 2. The period 1906–10 was a critical period in the Pearson-Galton relationship. In essence, Pearson was working to secure the position as Galton's principal heir. Pearson's strategy was to establish national eugenics as a university-based research discipline while simultaneously convincing Galton that he (Pearson) had the managerial, programmatic, and entrepreneurial skills to succeed. Galton had alternatives for achieving his ambitions with eugenics advocacy, such as through Leonard Darwin and the Eugenics Education Society.[13] For Pearson to secure prime position, he felt the need to demonstrate (1) productivity, (2) programme, and (3) an ability to marshal data, analysis, and assistants into credible outputs. Patronage supplied by the Drapers freed one of Pearson's hands. Patronage from Galton would free the other. Pearson's campaign to persuade Galton was successful, with Galton proclaiming Pearson heir to his intellectual legacy and heir to the residual of his estate. (In Table 2, the count for *Memoirs* excludes numbers co-listed for *Treasury*. *Memoirs* 19–20 is counted as two numbers.)

Other factors pressuring Pearson towards high productivity in those early years would have been his desire to assert a presence for the 1909 centenary commemorations for the birth of Charles Darwin (1809–1882) as well as for University of London's hosting of the International Congress of Eugenics in 1912. The years 1910–14 represent the apex of England's mania for Galton and Pearson's xenophobic brand of 'national eugenics', and Pearson drove productivity to assert his pre-eminence in eugenics as a British academic research subject. After Galton's death in 1911, Pearson attempted memorial fundraising to increase the endowment for his Eugenics Laboratory and to fund a new building. That campaign achieved poor results.

GLNE series were intended to disseminate GLNE research. It is no surprise that the distribution of authors is weighted heavily towards members of that research group. The main exception is the *Treasury* series, which Pearson intended as a submission-based data catalogue for the study of inherited conditions. Pearson's role in that series primarily involved standardization and setting of methodological standards.

[13] Pauline M. H. Mazumdar, *Eugenics, Human Genetics and Human Failings. The Eugenics Society, Its Sources and Its Critics in Britain* (London: Routledge, 1992).

TABLE 1. Main series published by the Eugenics Laboratory (= Galton Laboratory = Galton Laboratory for National Eugenics), with addition of Studies in National Deterioration from the Biometric Laboratory. It is necessary to be aware of double counting (e.g. all Treasury numbers were also labelled by Pearson as Memoirs numbers).

	INTERVAL	NUMBERS OR PARTS
Eugenics Laboratory Lecture Series	1909–27	14
Eugenics Laboratory Memoirs	1907–66	42 (18)
Treasury of Human Inheritance	1909–58	24
Questions of the Day and of the Fray	1910–23	12
Studies in National Deterioration (Series C from the Biometric Laboratory)	1906–24	11

TABLE 2. Accumulating total of publications produced by Francis Galton Laboratory of National Eugenics (GLNE), 1906–66, adjusted to remove double counting of Memoirs co-listed elsewhere.

Interval	Cumulative Total	Annual Total	*Memoirs*	*Treasury*	*Lectures*	*Questions*	*Deterioration*
1906–10	25	25	8	4	6	1	6
1911–14	47	22	3	4	4	8	3
1915–18	47	0					
1919–22	55	8	1	1	3	2	1
1923–26	59	4		2		1	1
1927–30	62	3	1	1	1		
1931–34	66	4		4			
1935–38	67	1		1			
1939–42	68	1		1			
1943–46	69	1		1			
1947–50	71	2		2			
1951–54	75	4	2	2			
1955–58	76	1		1			
1959–62	76	0					
1963–66	79	3	3				
total		79	18	24	14	12	11

Pearson divided eugenics work into two types: research and polemics. After taking up the directorship of GLNE, he created different publishing projects to reach these separate audiences. GLNE's reputation as a publisher of research and as a voice in science-driven policy relied heavily on its association with University of London and University College. Endpapers and mastheads (i.e. nameplates) identified each publication as a product of the university, department, and laboratory. These changed only to reflect evolving administrative units for Pearson or one of his successors.

Pearson kept himself as supervening editor for all publications of the Eugenics Laboratory and Biometrics Laboratory until his retirement in 1933. He worked without external peer review. The *Treasury* series was the only GLNE series to note an 'advisory committee', including: William Palin Elderton, J. Macpherson, F. Mott, Edward Nettleship, Edgar Schuster, Lt Col R. J. Simpson, and James Fowler Tocher. Pearson described their roles as persons who 'have kindly consented to aid the Staff of the Laboratory in special forms of enquiry'. This was not an editorial board. Additional external governance for GLNE publications seems lacking, at best it was perfunctory.

GLNE publishing rates declined sharply after 1914. During the Great War, staff were reassigned to other duties, leaving Pearson with capacity problems and a distracted community of interest. The pace of activity within GLNE did not recover after 1918, however. Pearson's Laboratories were moved into comparative palatial faculties at University College. The decline in publishing volume for GLNE series from the late 1910s probably had two local causes. First, as Pearson repeatedly complained, printing costs rose steeply, and these quickly outpaced income. Second, private printing of separates had become less respected academically compared to production through commercial publishing houses. Pearson understood the value of this shift and moved GLNE publishing accordingly. He convinced Cambridge University Press to publish a new research journal, *Annals of Eugenics*, from 1925.[14] Pearson served as editor, 1925–33. *Annals* followed administrative practices established by *Biometrika*, and Pearson asserted firm editorial control. The journal became another route for Pearson's own output, authoring the largest fraction of pages printed in the volumes during his editorship.[15]

[14] Karl Pearson, 'Foreword', *Annals of Eugenics*, 1 (1925); Karl Pearson, 'Vale!', *Annals of Eugenics*, 5 (1933).

[15] Pearson authored or co-authored twenty-six per cent of the pages in volumes 1–5 (1925–33). Overall, a total of five per cent of the pages were single-authored pieces by Pearson and twenty-one per cent were from a co-authored series of papers on 'The Problem of Alien Immigration', co-authored by Moul. Other major contributors by number of pages included familiar authors from other GLNE series: Stocks (18%), Elderton (6% directly plus 15% indirectly), Morant (10%), Usher (3%), and Bell (2%).

Pearson passed on his editorial roles to two academic successors in 1933. His son, Egon Pearson (1895–1980), was appointed Reader and head of department for a new Department of Statistics at University College.[16] He also took on the Drapers funds and the Biometric Laboratory series A and B. Egon distanced himself from his father's advocacy of national eugenics, and he manoeuvred to have the subject excluded from his new department. To accommodate, the university created a new Department of Eugenics to house GLNE. Its head would be Pearson's successor as Francis Galton Professor of Eugenics, Ronald Aylmer Fisher (1890–1962). [17]

Fisher's academic reputation was built upon his 1930 book, *The Genetical Theory of Natural Selection*, which developed mathematical models to show how small pressures from natural selection could lead quickly to profound changes in the genetics of large populations. This modelling played a key role in reviving confidence amongst biologists in Darwinian natural selection.[18] Fisher also was a keen advocate of eugenics, with many contributions to popular audience publications on the subject. Fisher was a considerably better mathematician than Pearson, and some of his work as Galton Professor involved translating the foundations of Pearson's work on to stronger mathematical frameworks.

After arriving at University College, Fisher took on all the GLNE editorships, including *Annals*. Table 2 shows that while Fisher produced *Annals* with roughly the same number of pages compared to Pearson, he had little ambition as an editor or publisher. Instead, Fisher relied on his longstanding friendship with Leonard Darwin effectively to pass this editorship to others. He approved a co-operative arrangement with the Eugenics Education Society to jointly produce *Annals*.[19] Production of GLNE series slowed almost to a halt under Fisher, too. The exception was *Treasury*, probably because others were invested in their completion much more than Fisher was.

The Galton Chair of Eugenics was left vacant on Fisher's resignation in 1943, until 1945 when Lionel S. Penrose (1898–1972) was appointed as its third occupant.[20] Penrose was an expert in human medical genetics. Penrose

[16] Maurice Stevenson Bartlett, 'Egon Sharpe Pearson, 11 August 1895 – 12 June 1980', *Biographical Memoirs of Fellows of the Royal Society*, 27 (1981), 425–43.

[17] For Fisher's biography, see Frank Yates and Kenneth Mather, 'Ronald Aylmer Fisher, 1890–1962', *Biographical Memoirs of Fellows of the Royal Society*, 9 (1963), 91–129. For Fisher's major work, see *The Genetical Theory of Natural Selection. A Complete Variorum Edition*, ed. by J. Henry Bennett (Oxford: Oxford University Press, 1999). For Fisher's contributions to wider eugenics advocacy, see *Natural Selection, Heredity, and Eugenics, Including Selected Correspondence of R. A. Fisher with Leonard Darwin and Others*, ed. by J. H. Bennett (Oxford: Clarendon Press, 1983).

[18] William Provine, *The Origin of Theoretical Population Genetics* (Chicago, IL: University of Chicago Press, 1971).

[19] Ronald A. Fisher, 'Foreword', *Annals of Eugenics*, 6 (1934). The Eugenics Education Society changed its name to The Eugenics Society in 1926, then to The Galton Institute in 1989.

[20] Harry Harris, 'Lionel Sharpe Penrose (1898–1972)', *Journal of Medical Genetics*, 11 (1974), 1–24.

steered quite a different course with the GLNE and its publishing programmes when he restarted the Laboratory. Previously, Pearson defined 'national eugenics' as a set of interventionist policies aimed not only at improving human stocks on their own but also favouring Anglo-Saxon stocks over all others within a national body he called a 'race'. Fisher was less anthropologically minded, and his eugenics was less concerned with nationalist themes.

Penrose stopped eugenics as an active research programme at University College during his tenure as Galton Professor (1945–65), describing advocates of eugenics as 'lunatics'. The old 'Eugenics Laboratory' became the 'Galton Laboratory'. Penrose changed the title of *Annals of Eugenics* to *Annals of Human Heredity* in 1954. He worked to vivify the journal by distancing it from Pearson's and Fisher's eugenics ideology and placing emphasis strictly on medical genetics.[21] At University College, Penrose also succeeded in removing the word 'eugenics' from his department name and the title of his professorship.

As a publishing house, the Galton Laboratory (i.e. the transformed GLNE) continued to decline under Penrose and his successors. The *Treasury* series completed long-running projects, while the *Memoirs* series became an outlet mainly for student dissertations. The *Memoirs* series went defunct after number 42 in 1966. Thereafter, funds supporting publications from the Galton Laboratory were spent either on page charges for other outlets, office supplies, or ad-hoc printing for ceremonial lectures. *Annals* became the sole focus of the Laboratory's claims for its standing in the discipline. Income from sales and subscriptions simply accumulated. *Annals* is the sole surviving publishing concern for the Laboratory.

Notes on individual series

Compiling the data in the appendices below involved physical examination of all individual publications. No repository was found to hold all GLNE publications. The most complete set was found in UCL Special Collections, which holds the Karl Pearson Papers. This archive includes as subsets the Francis Galton Papers and a library associated with the GLNE. It is virtually complete for Pearson's tenure; much less complete for later periods. Additional nearly complete collections of GLNE series were located at Senate House Library and the British Library. Numerous cataloguing errors were discovered during this research, and corrections were submitted as appropriate. Later numbers in the Eugenics Laboratory *Memoirs* series proved particularly difficult to identify owing to differences in catalogue

[21] Lionel Penrose, 'Editorial Note', *Annals of Eugenics*, 13 (1946); Lionel Penrose, 'Editorial Note', *Annals of Human Heredity*, 19 (1954).

descriptions. An inconsistent production schedule also has been a cause of much confusion.

(1) *Eugenics Laboratory Lecture Series*

Appendix 1 lists numbers in this series. Following practices used in the Biometric Laboratory, Pearson organized public lectures and short training courses by GLNE staff. These targeted medical and social-care professionals seeking skill development. The *Lecture* series was used to merchandize some of this activity while also disseminating core information about Pearson's eugenics thinking. In a prefatory note at the front of *Lecture Series* number 1, Pearson wrote:

> The Galton Eugenics Laboratory has found the need of some introduction to the science of Eugenics, which shall place the purpose of the investigations conducted there in a simple form before the general reader. This will be the aim of the present series of publications.

When Pearson did not have new material for the series, he recycled older lectures and materials converted from his teaching. Ultimately, Pearson authored twelve of the fourteen numbers in this series. He also added significantly to one of the two others. The pace of new publications in this series slowed appreciably after 1912. Through reprinting, Pearson kept all numbers in print for several decades.

A publication chronology for all editions of numbers in the *Lecture* series is difficult to reconstruct. Pearson seems to have reprinted individual numbers in the series when supplies of separates were exhausted. When reprinting, he updated the date of publication. Normally content was not changed (noted as 'new issue', 'reissue', 'second issue', and so on); sometimes, new material was appended (noted as 'new edition', and item 3 is an example).

(2) *Eugenics Laboratory Memoirs*

Appendix 2 lists numbers in this series. The Garland facsimile edition reproduces numbers 1–5, 8, and 10, only numbers from the Pearson era. Farrall's list stopped at number 19–20.[22] This led to a false impression among readers that the *Memoirs* series stopped at number 19–20.

Pearson started publishing the *Memoirs* series shortly after GLNE was created. Projects from the defunct predecessor, the Eugenics Record Office, were used to launch the series. With the first four *Memoirs* appearing in rapid succession, Pearson demonstrated he could deliver on the ambitions he and Galton shared for eugenics as a research discipline suitable for the modern university.

[22] Galton Laboratory, *Selected Eugenics Laboratory Memoirs: The Francis Galton Laboratory for National Eugenics* (New York, NY/London: Garland, 1984).

The *Memoirs* series remained an in-house publication over the long term. Nearly all Pearson-era *Memoirs* reported on research undertaken either by Pearson or by GLNE employees. David Heron was Francis Galton Fellow in National Eugenics. Ethel M. Elderton was Francis Galton Scholar. Amy Barrington was Computer. Edgar Schuster was the first Francis Galton Fellow in GLNE's predecessor, the Eugenics Record Office. Schuster also was listed on the GLNE advisory committee.

(3) *The Treasury of Human Inheritance*

Appendix 3 lists numbers in this series. Some cataloguers treat this series as a subseries of *Memoirs*; others treat it as an independent series. In fact, *Treasury* began as a subseries, then evolved into an independent series. It was intended to produce 'a collection of published and unpublished family pedigrees, illustrating the inheritance in man of mental and physical characters, of disease and of abnormality', published in quarto on a quarterly basis. Pearson argued *Treasury* started because 'students of heredity find great difficulty in obtaining easy access to material bearing on human inheritance'. He described *Treasury*'s value in empirical terms, noting it would 'contain no reference to theoretical opinions'. Pearson also noted the value of standardization of information in family trees (*Questions* number 1 (1910) endpapers).

Under Pearson's editorship, *Treasury* was a subordinate project in the *Memoirs* series. This position is reflected in *Memoirs* numbering and advertising. No doubt, the relationship between these two series was an artefact of Pearson's evolving designs for publishing within GLNE. At some point in 1909–10, midway through the production of numbers that would become *Treasury*'s first volume, Pearson made the decision to separate that project into something distinct. He assembled the first volume of *Treasury* from *Memoirs* 6, 9, 11, 12, 15, and 16. Pearson counted as a separate publication (*Memoirs* 16) the front matter he created in 1910 associated with conversion of these separates into a standalone whole volume. Pearson secured an endorsement from Galton, which appears as an epigraph (Volume 1, p. ii). He also wrote a programmatic statement to preface the first volume, and he created a frontispiece featuring Galton and four of his ancestors, who supposedly contributed several of his desirable qualities.

For unknown reasons Pearson chose to continue duplicate listings for individual parts later in the *Treasury* series also as numbers in the *Memoirs* series. The result is an inflation of productivity by double-counting twenty-four of the forty-two *Memoirs* (57%). Table 1 shows the number count of each series. Table 2 removes the double counting in the *Memoirs* series. Some sections of *Treasury* numbers during Pearson's editorship contain revisions or additions between their appearance as separates and as parts of the bound volume. Pearson denotes changes with Greek notation. For

instance, in the bound *Treasury* volume 1, Section X alpha is unchanged from its first appearance in *Memoirs*; whereas Section VI beta and gamma contain additional material to Section VI alpha. This complexity has confused bibliographers. The bound volumes of *Treasury* offer the authoritative listing of components.

Owing to its evolving structure, the *Treasury* series has confused bibliographers. Published separates were described as 'parts', and 'parts' were later brought together into bound 'volumes' of one general subject each. Sometimes 'parts' included multiple 'sections'. Both parts and volumes were available for purchase. This explains the confusing position of Volume 1 Parts I and II in *Treasury*. These two parts first appeared in 1909 published by GLNE as one separate but not attributed to any GLNE series. (It was not identified on its cover pages as a *Memoirs*.) Advertisements in the endpapers of that separate, and endpapers in all later separates, identify it as number 6 in the *Memoirs* series.

Julia Bell (1879–1979) contributed substantially to *Treasury*, authoring fifteen numbers over three volumes of the *Treasury* series. Bell was employed by Pearson in the GLNE (1908–14 as research assistant) before leaving to study medicine, receiving MRCP LRCP in 1920 from the London School of Medicine for Women and St Mary's Hospital. She was re-employed by Pearson at GLNE from 1924–44 as research fellow, first supported by GLNE and later by the Medical Research Council (MRC). Her collaborators at University College included Pearson, Fisher, and Haldane. In 1926, she gained membership of the Royal College of Physicians and was elected FRCP in 1938. Bell served on the MRC genetics committee from 1932 and was a permanent member of the MRC scientific staff between 1933 and 1944.[23]

Pearson edited *Treasury* Volume 1 (1909–12) and Volume 2 (1933). Julia Bell authored vol. 2, which focused on anomalies and diseases of the eye. Pearson dedicated this volume as a memorial to Edward Nettleship (1845–1913), 'my friend and co-worker'.

Volume 3 (1925) focused on bone development, featuring a survey by Percy Stocks and Amy Barrington. By comparison, it was short. In a preface, Pearson explained why delays had led to Volume 3 appearing before Volume 2. Most likely Pearson was winding down his publishing prior to retirement.

Volume 4 (1934–48) was edited by Pearson's successors, Fisher (edited parts I–IV), and Lionel S. Penrose (edited part V). (This was a serial editorship; not a joint editorship, as Fisher left UCL in 1943 and Penrose was his

[23] MDDUS, 'Vignette: Pioneering Geneticist, Julia Bell (1879–1979)', *Summons Magazine [MDDUS]* (2012); Greta Jones, 'Julia Bell', in *Oxford Dictionary of National Biography*. Interestingly, this is not examined by Rosaleen Love, '"Alice in Eugenics-Land": Feminism and Eugenics in the Scientific Careers of Alice Lee and Ethel Elderton', *Annals of Science*, 36 (1979), 145–58.

successor.) Volume 4 consisted exclusively of Julia Bell's monograph on nervous diseases and muscular dystrophies, published in five parts. In a preface to the volume, Penrose expressed a desire to continue the *Treasury* series with other subjects.

Volume 5 (1951–58) was written by Julia Bell and edited by Penrose. It focused on hereditary issues associated with digits. This volume included three parts and ended without the customary final indexing number to join the numbers in this volume together.

(4) *Questions of the Day and of the Fray*

Appendix 4 lists numbers in this series. Twelve numbers were published between 1910–23. A facsimile published by Garland reprinted numbers 1–8.[24] Possibly, the omission of number 10 relates to its availability through a different publisher, while the omission of numbers 11 and 12 relates to their biographical nature.

Pearson created this series primarily for his own purposes, writing ten of the numbers himself and contributing substantially to the remaining two. He used the *Questions* series to reply to critics, rebuke opponents, and defend the work of the GLNE. These combine disputes over data analysis with Pearson's particularly fierce argumentative rhetoric. Overall, the *Questions* series gave Pearson an amplifying tool for asserting his dominance in the research community.

(5) *Studies in National Deterioration*

Appendix 5 lists numbers in this series. The *Studies* series was published through Pearson's Biometric Laboratory as Series C of the Drapers' Company Research Memoirs, Department of Applied Statistics, University of London, University College. This placement perhaps was financial, allowing Pearson to draw on funds received from The Worshipful Company of Drapers, rather than from Galton. This allowed more sumptuous production values, and this choice is consistent with Pearson's flag-of-convenience approach when sometimes selecting venues for his writing.

Pearson launched the *Studies* series after an exchange with James Crighton-Browne in *The Times* on national deterioration before plans for the GLNE came into view later in 1906.[25] This dedicated series gave Pearson a platform for framing both the subject and the methods of investigation.

[24] Galton Laboratory, *Questions of the Day and of the Fray: The Francis Galton Laboratory for National Eugenics* (New York, NY/London: Garland, 1984).
[25] Karl Pearson, 'National Deterioration', *The Times*, 5 September 1905, p. 5; James Crighton-Browne and D.C.L., 'National Deterioration', *The Times*, 29 August 1905, p. 6.

Other printed goods

Pearson ran GLNE as a publishing business and small shop front, with income invested back into the laboratory. To supplement the research publications, Pearson regularly created ancillary products for sale. Advertisements for these products peppered the endpapers of GLNE publications. In addition to past publications from the GLNE, endpapers also promoted the sale of Pearson's statistical charts and tables essential in biometry as well as other publications from Biometric Laboratory series. Endpapers occasionally advertised publications from other publishers authored by Pearson and Galton. For instance, through GLNE Pearson continued to advertise the two-volume set of public and teaching lectures delivered earlier in his career, *The Chances of Death and Other Studies in Evolution*.[26]

Pearson's publishing business invested heavily in Galton commemoration. This was part of Pearson positioning himself as principal heir to Galton's legacy. From speeches (*Questions* 11) and essays (*Treasury*, introduction to volume 1), Pearson peppered GLNE publications with Galton's presence and vision. He added epigraphs, images, aphorisms, and citations. GLNE sold engraved portraits of Galton, buckram cases bearing an impress of a Galton bust for retaining *Treasury* volumes, and other Galton memorabilia. The most substantial contribution to his legacy was Pearson's production of the four-volume memorial, *The Life, Letters, and Labours of Francis Galton*, between 1914 and 1930.[27] Promoting Galton and Schuster's book, *Noteworthy Families*, further allowed Pearson to assert continuity between Galton's failed Eugenics Record Office and Pearson's ongoing GLNE.[28]

Accounting ledgers for GLNE have not survived, and there is little chance of learning about the profitability of it as an academic's side venture. After Pearson's retirement, the sale of additional products was reduced only to offprints. With the transfer to Cambridge University Press, endpapers reflected the Press's priorities rather than those of the GLNE.

[26] For example, see endpapers for *Treasury* volume 1. The older volume is Karl Pearson, *The Chances of Death and Other Studies in Evolution. In Two Volumes* (London: Edward Arnold, 1897). GLNE-promoted publications by Galton include the revised Francis Galton, *Life History Album. Tables and Charts for Recording the Development of Body and Mind from Childhood Upwards, with Introductory Remarks*, 2nd edn (London: Macmillan and Co., 1902).

[27] Karl Pearson, *The Life, Letters, and Labours of Francis Galton. Volume 1. Birth 1822 to Marriage 1853* (Cambridge: Cambridge University Press, 1914); Karl Pearson, *The Life, Letters, and Labours of Francis Galton. Volume 2. Researches of Middle Life* (Cambridge: Cambridge University Press, 1924); Karl Pearson, *The Life, Letters, and Labours of Francis Galton. Volume 3a. Correlation, Personal Identification, and Eugenics* (Cambridge: Cambridge University Press, 1930); Karl Pearson, *The Life, Letters, and Labours of Francis Galton. Volume 3b. Characterization, Especially by Letters, Index* (Cambridge: Cambridge University Press, 1930). Pearson also created a display of Galtoniana in department rooms at University College. Much of this survives today as the UCL Galton Collection.

[28] Francis Galton and Edgar Schuster, *Noteworthy Families (Modern Science). An Index to Kinships in near Degrees between Persons Whose Achievements Are Honourable, and Have Been Publicly Recorded* (London: John Murray, 1906).

Conclusion

Patterns emerge from a catalogue of publications by the Francis Galton Laboratory for National Eugenics (GLNE). During Pearson's era as Galton Professor, GLNE operated as a publishing house primarily focused on his own priorities. Publishing GLNE's own research showed a burst of activity in the first decade, but this activity declined rapidly at the start of the Great War. It never recovered. GLNE's list of publications depended heavily on Pearson, and it shows important operational decisions. For instance, Pearson sometimes chose to double-count publications. He chose to create no independent review process. Differentiation between series niches broke down when convenient. Pearson used GLNE outlets for polemical and partisan purposes. In contrast, Pearson was quick to develop new series, and he displayed a keen awareness of the importance publications might have in developing disciplinary infrastructure.

Owing to how GLNE products were printed and distributed (many as privately printed separates), the scale of the Laboratory's publishing programme as a whole has been lost. Records of GLNE publications after Pearson's retirement have been incomplete. Indeed, several previous attempts to construct a comprehensive bibliography focused solely on Pearson-era publications,[29] leading to limited appreciation of legacy and pattern in GLNE publishing.

Most GLNE publications did not thrive after Pearson's retirement, and decline was the rule after Pearson's own activities slowed. The *Treasury* series was the exception that proved the rule, continuing solely from Julia Bell's perseverence. The *Memoirs* continued to 1966, but Fisher did not display a publisher's ambition. Penrose used the series to publish impressive work by students. The other lasting publication was *Annals of Eugenics*, transformed by Penrose in the early 1950s to reflect postwar expectations of peer review, editorial self-control, and collective management. In 1954, Penrose changed its name to *Annals of Human Heredity*.

Overall, GLNE publications follow the pattern predicted in general narratives about British eugenics in the early twentieth century.[30] The British mania for 'national eugenics' peaked between 1910 and 1914. Following the Great War, that nativist and supremacist variant of Anglo-Saxon racism was displaced by a 'reformed eugenics' that placed less emphasis on pseudo-anthropology and more emphasis on the relationship between nature and nurture set in a less simplistic Mendelian framework.

[29] For example, Morant and Welch, 'Bibliography of the Statistical and Other Writings of Karl Pearson', and Farrall, *Origins and Growth of the English Eugenics Movement,* appx 5.

[30] Farrall, *Origins and Growth of the English Eugenics Movement*; Daniel Kevles, *In the Name of Eugenics. Genetics and the Uses of Human Heredity* (Cambridge, MA: Harvard University Press, 1985); Diane Paul, *Controlling Human Heredity: 1865 to the Present* (Atlantic Highlands, NJ: Humanities Press, 1995); Porter, *Karl Pearson*.

Pearson was 'national' rather than 'reformed', and by the early 1920s, his approach looked decidedly old-fashioned. His increasing reliance on nostalgia and commemoration marked this decline. His personalization of research laboratories proved difficult to pass on to successors.

London

APPENDIX 1

Eugenics Laboratory Lecture Series

1 Pearson, Karl. 1909. *The Scope and Importance to the State of the Science of National Eugenics* (London: Dulau and Co., second edition). 45 pp.

Based on the Fourteenth Robert Boyle Lecture before the Oxford University Junior Science Club, 17 May 1907. First edition is 1907 in *Journal of the Oxford University Junior Scientific Club*, published by Henry Frowde (London). GLNE edition is 'second edition' in 1909. In front matter, Pearson also reported that an 'authorized translation of this lecture has appeared in Germany, and a wholly unauthorized reprint in America'. Morant (120 and 131) identifies the latter as *Popular Science Monthly*, 71 (1907), 385–412. Third edition is 1911.

2 Pearson, Karl. 1909. *The Groundwork of Eugenics* (London: Dulau and Co.). 39 pp.

Second edition is 1912.

3 Elderton, Ethel M. 1909. *The Relative Strength of Nurture and Nature* (London: Dulau and Co.). 40 pp. Includes two Appendices: Appendix A, 'Home Conditions and Eyesight', by Karl Pearson (noted as reprinted from *British Medical Journal*), pp. 34–39, and Appendix B, 'Cleanliness and Vision', signed Karl Pearson, pp. 439–40.

The preface notes that this Lecture summarizes three *Memoirs* (V, VII, and VIII). Second edition is 1915, noted as 'much enlarged edition' of two parts (60 pp. in total): Part I. The Relative Strength of Nurture and Nature. Second edition, revised. By E. M. Elderton; and Part II. Some Recent Misinterpretations of the Problem of Nurture and Nature. First issue. By Karl Pearson.

4 Elderton, Ethel M. 1909. *On the Marriage of First Cousins* (London: Dulau and Co.). 39 pp.

Second edition is 1911.

5 Pearson, Karl. 1909. *The Problem of Practical Eugenics* (London: Dulau and Co.). 38 pp.

Based on a course of lectures given in May 1909. Reprinted 1910. Second edition is 1912.

6 Pearson, Karl. 1910. *Nature and Nurture, the Problem of the Future* (London: Dulau and Co.). 31 pp.

Based on Presidential address delivered on 28 April 1910, annual meeting of the Social and Political Education League. GLNE reprint is 'Second edition' 1910.

7 Pearson, Karl. 1911. *The Academic Aspect of the Science of National Eugenics. A Lecture Delivered to Undergraduates* (London: Dulau and Co.). 27 pp.

8 Pearson, Karl. 1912. *Tuberculosis, Heredity and Environment; Being a Lecture Delivered at the Galton Laboratory for National Eugenics, 12 March 1912* (London: Dulau and Co.). 46 pp.

9 Pearson, Karl. 1912. *Darwinism, Medical Progress and Eugenics. The Cavendish Lecture, 1912. An Address to the Medical Profession* (publisher not specified). 29 pp.

This separate is a hybrid of two publishing processes. It was circulated with GLNE endpapers, but the text is in a different style and format compared to the previous eight numbers in the series. A note on the title page reads 'This lecture was delivered to the West London Medico-Chirurgical Society as the Cavendish Lecture for 1912, and originally published in the West London Medical Journal, vol xvii, pp. 165–93, 1912'.

10 Pearson, Karl. 1914. *On the Handicapping of the First-Born; Being a Lecture Delivered at the Galton Laboratory, University College, London, March 17, 1914. With Frontispiece and Four Diagrams* (London: Dulau and Co.). 68 pp.

11 Pearson, Karl. 1919. *National Life from the Standpoint of Science. Second edition* (Cambridge: Cambridge University Press). 64 pp.

First published as Karl Pearson. 1901. *National Life from the Standpoint of Science; An Address delivered at Newcastle, November 19, 1900, by Karl Pearson* (London: A. and C. Black). 62 pp. Second edition under same publisher is 1905. GLNE listing is 1919 reprint by Cambridge University Press and titled 'second edition'. It includes new preface but same three appendices as the 1905 edition by A. and C. Black: Appendix I, 'National Deterioration', pp. 65–85 (previously published in *The Times*, 25 August 1905 and 5 September 1905); Appendix II, 'Recent Work in Heredity. An Abstract of a Lecture delivered in November, 1904', pp. 85–94; Appendix III, 'The Bearing of Our Present Knowledge of Heredity upon Conduct', pp. 95–106.

12 Pearson, Karl. 1919. *The Function of Science in the Modern State*, second edition (Cambridge: Cambridge University Press). 97 pp.

First published as Karl Pearson. 1902. 'The Function of Science in the Modern State', *Encyclopaedia Britannica*, volume 32. GLNE reprint is second edition 1919.

13 Pearson, Karl. 1921. *Side Lights on the Evolution of Man; Being a Lecture Delivered at the Royal Institution, Friday, May 14, 1920* (London: Cambridge University Press). 27 pp.

14 Pearson, Karl. 1927. *The Right of the Unborn Child; Being a Lecture Delivered on November 13, 1926 to Teaching from the London County Council Schools* (London: Cambridge University Press). 26 pp.

APPENDIX 2

Eugenics Laboratory Memoirs

1 Schuster, Edgar and Elderton, Ethel Mary. 1907. *The Inheritance of Ability: Being a Statistical Study of the Oxford Class Lists and of the School Lists of Harrow and Charterhouse*. (London: Dulau and Co.). 42 pp. Includes an appendix by Karl Pearson, 'Influence of Academic Selection on Correlation Coefficients', pp. 41–42.

2 Heron, David. 1907. *A First Study of the Statistics of Insanity and the Inheritance of the Insane Diathesis* (London: Dulau and Co.). 33 pp.

3 Schuster, Edgar. 1907. *The Promise of Youth and the Performance of Manhood, being a Statistical Inquiry into the Question Whether Success in the Examination for the B.A. Degree at Oxford is Followed by Success in Professional Life* (London: Dulau and Co.). 16 pp.

4 Elderton, Ethel Mary. Assisted by Karl Pearson. 1907. *On the Measure of the Resemblance of First Cousins* (London: Dulau and Co.). 53 pp.

5 Barrington, Amy and Pearson, Karl. 1909. *A First Study of the Inheritance of Vision and of the Relative Influence of Heredity and Environment on Sight* (London: Dulau and Co.). 61 pp.

6 Pearson, Karl (ed.). 1909. *Treasury of Human Inheritance*. Parts I and II (double part, 'Pedigrees of physical, psychical, and pathological characters in Man'): Prefatory Note by Francis Galton; Preface by Karl Pearson; 'Diabetes insipidus' (by W. Bulloch); 'Split-Foot' (by T. Lewis); 'Polydactylism' (by T. Lewis); 'Brachydactylism' (by T. Lewis); 'Pulmonary Tuberculosis' (by W. Bulloch and W. C. Rivers); 'Deaf-Mutism' (by Johnson Horne and the Eugenics Laboratory); 'Legal Ability' (by the Eugenics Laboratory); and 'Chronic Hereditary Trophoedema' (by W. Bulloch) (London: Dulau and Co.).

7 Rhodes, Edmund Cecil. 1921. *On the Relationship of the Condition of the Teeth in Children to Factors of Health and Home Environment* (London: Cambridge University Press). 80 pp.

Prefatory Note by Karl Pearson, pp. v–vi. This project was undertaken by Rhodes in 1911–12, and Pearson's preface stresses the value of slow project development. *Memoir* 7 is frequently recorded wrongly. This is because Pearson advertised a different publication as *Memoir* 7 'shortly' to appear in endpapers from 1910 (i.e. *Memoir* 8) through 1920 (i.e. *Lecture* 12). That missing publication was Ethel Mary Elderton (1909) 'The Influence of Parental Occupation and Home Conditions on the Physique of the Offspring'. This was not published as such, but elements were published as *Memoir* 10.

8 Heron, David. 1910. *The Influence of Defective Physique and Unfavourable Home Environment on the Intelligence of School Children, Being a Statistical Examination of the London County Council Pioneer School Survey* (London: Dulau and Co.). 60 pp.

9 Pearson, Karl (ed.). 1909. *Treasury of Human Inheritance*. Part III. 'Angioneurotic Oedema' (by W. Bulloch); 'Hermaphrodisism' (by W. Bulloch); 'Insanity' (by A. R. Urquhart and the Eugenics Laboratory); 'Deaf-Mutism' (by the Eugenics Laboratory); 'Ability' (by the Eugenics Laboratory) (London: Dulau and Co.).

10 Elderton, Ethel Mary, assisted by Karl Pearson. 1910. *A First Study of the Influence of Parental Alcoholism on the Physique and Intelligence of the Offspring* (London: Dulau and Co.). 46 pp.

Second edition also is 1910.

11 Pearson, Karl (ed.). 1910. *Treasury of Human Inheritance*. Part IV. Section XII, 'Hare-Lip and Cleft Palate'. Section VIbeta, 'Deaf-Mutism'. Section XIII, 'Congenital Cataract' [authors not specified] (London: Dulau and Co.).

12 Pearson, Karl (ed.). 1911. *Treasury of Human Inheritance*. Section XIV, 'Haemophilia' (London: Dulau and Co.).

13 Pearson, Karl, and Elderton, Ethel Mary. 1910. *A Second Study of the Influence of Parental Alcoholism on the Physique and Ability of the Offspring. Being a Reply to Certain Medical Critics of the First Memoir and an Examination of the Rebutting Evidence Cited by Them* (London: Dulau and Co.). 35 pp.

14 Barrington, Amy, and Pearson, Karl, assisted by David Heron. 1910. *A Preliminary Study of Extreme Alcoholism in Adults* (London: Dulau and Co.). 55 pp.

15 Pearson, Karl (ed.). 1912. *Treasury of Human Inheritance*. Section XV, 'Dwarfism' (London: Dulau and Co.).

16 Pearson, Karl (ed.). 1912. *Treasury of Human Inheritance. Name and Subject Indices to Volume I. With Frontispiece Portraits of Sir Francis Galton and Ancestry* (London: Dulau and Co.).

17 Heron, David. 1912. *A Second Study of Extreme Alcoholism in Adults, with Special Reference to the Home-Office Inebriate Reformatory Data* (London: Dulau and Co.). 95 pp.

18 Elderton, Ethel Mary, Amy Barrington, H. Gertrude Jones, Edith M. M. de G. Lamotte, H. J. Laski, and Karl Pearson. 1913. *On the Correlation of Fertility with Social Value. A Co-Operative Study* (London: Dulau and Co.). 72 pp.

19–20 Elderton, Ethel Mary. 1914. *Report on the English Birthrate: Part I. England, North of the Humber* (London: Dulau and Co.). 246 pp.

No masthead on this publication. Number 19 in the series is advertised in some endpapers as 'A First Report on the Condition of the People from

the Standpoint of National Eugenics'. The multiple numeration for 19–20 is confirmed in later endpapers (e.g. *Memoir* 39).

21 Bell, Julia. 1922. *Treasury of Human Inheritance*. Volume II. Part I. 'Retinitis Pigmentosa and Allied Diseases', 'Congenital Stationary Night-Blindness', 'Glioma Retinae' (Cambridge: Cambridge University Press).

Also listed as *Treasury* 2:1. Includes: Karl Pearson. 1922. Prefatory Note, pp. v–vii; and J. B. Lawford. 1922. 'A Memoir of Edward Nettleship', pp. ix–xv.

22 Stocks, Percy, and Amy Barrington. 1925. *Treasury of Human Inheritance*. Volume III. Part I. 'Hereditary Disorders of Bone Development' (Cambridge: Cambridge University Press).

Also listed as *Treasury* 3:1.

23 Bell, Julia. 1926. *Treasury of Human Inheritance*. Volume II. Part II. 'Colour-Blindness' (Cambridge: Cambridge University Press).

Also listed as *Treasury* 2:2.

24 Bell, Julia. 1928. *Treasury of Human Inheritance*. Volume II. Part III. 'Blue Sclerotics and Fragility of Bone' (Cambridge: Cambridge University Press).

Also listed as *Treasury* 2:3.

25 Elderton, Ethel Mary. 1928. *On the Relative Value of the Factors which influence Infant Welfare* (Cambridge: Cambridge University Press). 307 pp.

26 Bell, Julia. 1931. *Treasury of Human Inheritance*. Volume II. Part IV. 'Hereditary Optic Atrophy' (Cambridge: Cambridge University Press).

Also listed as *Treasury* 2:4.

27 Bell, Julia. 1932. *Treasury of Human Inheritance*. Volume II. Part V. 'On Some Hereditary Structural Anomalies of the Eye and On the Inheritance of Glaucoma' (Cambridge: Cambridge University Press).

Also listed as *Treasury* 2:5.

28 Bell, Julia. 1933. *Treasury of Human Inheritance*. Volume II. [Part VI.] Name and Subject Index to Volume II (London: Cambridge University Press).

29 Bell, Julia. 1934. *Treasury of Human Inheritance*. Volume IV. Part I. 'Huntington's Chorea' (London: Cambridge University Press).

30 Bell, Julia. 1935. *Treasury of Human Inheritance*. Volume IV. Part II. 'On The Peroneal Type of Progressive Muscular Atrophy' (London: Cambridge University Press).

31 Bell, Julia, assisted by E. Arnold Carmichael. 1939. *Treasury of Human Inheritance*. Volume IV. Part III. 'On Hereditary Ataxia and Spastic Paraplegia'. (London: Cambridge University Press).

32 Bell, Julia. 1943. *Treasury of Human Inheritance*. Volume IV. Part IV. 'Pseudohypertrophic and Allied Types of Progressive Muscular Dystrophy' (London: Cambridge University Press).

33 Bell, Julia, with Clinical Notes by J. Purdon Martin. 1947. *Treasury of Human Inheritance*. Volume IV. Part V. 'Dystrophia Myotonica and Allied Diseases' (London: Cambridge University Press).

34 Bell, Julia. 1948. *Treasury of Human Inheritance*. Volume IV. [Part VI.] Name and Subject Index to Volume IV (London: Cambridge University Press).

35 Bell, Julia. 1951. *Treasury of Human Inheritance*. Volume V. Part I. 'On Brachydactyly and Symphalangism' (London: Cambridge University Press). 36 pp. Trevor, Jack Carrick. 1953. 'Race Crossing in Man. The Analysis of Metrical Characters' (London: Cambridge University Press). 45 pp.

36 Trevor, Jack Carrick. 1953. *Race Crossing in Man. The Analysis of Metrical Characters* (London: Cambridge University Press). 45 pp.

37 Harris, Harry. 1953. *An Introduction to Human Biochemical Genetics* (London: Cambridge University Press). 96 pp.

Foreword by L. S. Penrose.

38 Bell, Julia, and Lionel S. Penrose. 1953. *Treasury of Human Inheritance*. Volume V. Part II. 'On Syndactyly and Its Association with Polydactyly' (London: Cambridge University Press).

39 Bell, Julia. 1958. *Treasury of Human Inheritance*. Volume V. Part III. 'The Laurence-Moon Syndrome' (London: Cambridge University Press).

40 Veale, Arthur Milton Oliver. 1965. *Intestinal Polyposis* (London: Published for the Galton Laboratory, University College London, by the Cambridge University Press). 104 pp.

Preface by L. S. Penrose.

41 Moran, Patrick Alfred Pierce, and Cedric Austen Bardell Smith. 1966. *Commentary on R. A. Fisher's Paper on 'The Correlation between Relatives on the Supposition of Mendelian Inheritance'* [published in *Transactions of the Royal Society of Edinburgh*, 52 (1918), 399–433] (London: Published for the Galton Laboratory, University College London, by the Cambridge University Press). 62 pp.

Preface by L. S. Penrose.

42 Court Brown, William Michael, Ptricia A. Jacobs, Karin E. Buckton, Ishbel M. Tough, E. V. Kuenssberg, and J. D. E. Knox. 1966. *Chromosome Studies on Adults* (London: Cambridge University Press, for the Galton Laboratory, University College London). 91 pp.

Preface by L. S. Penrose.

APPENDIX 3

The Treasury of Human Inheritance

Volume I (1912) [volume is untitled; theme is 'Pedigrees of physical, psychical, and pathological characters in Man']

Parts I and II. 1909. 'Diabetes insipidus', 'Split-Foot', 'Polydactylism', 'Brachydactylism', 'Tuberculosis', 'Deaf-Mutism', and 'Legal Ability' (London: Dulau and Co); contributors include W. Bulloch, P. Fildes, N. Bishop Harman, Jobson Horne, T. Lewis, H. Rischbieth, W. C. Rivers, A. R. Urquhart, A. Barrington, and the Galton Laboratory. (Co-listed as *Memoirs* number 6.)

Part III. 1909. 'Angioneurotic Oedema' (by W. Bulloch); 'Hermaphrodisism' (by W. Bulloch); 'Insanity' (by A. R. Urquhart and the Eugenics Laboratory); 'Deaf-Mutism' (by the Eugenics Laboratory); 'Ability' (by the Eugenics Laboratory) (London: Dulau and Co.). (Co-listed as *Memoirs* number 9.)

Part IV. 1910. Section XII. 'Hare-Lip and Cleft Palate'. Section VIbeta. 'Deaf-Mutism'. Section XIII. 'Congenital Cataract' (London: Dulau and Co), contributors not specified. (Co-listed as *Memoirs* number 11.)

Parts V and VI. 1911. Section XIV. 'Haemophilia', by William Bulloch and Paul Fildes (London: Dulau and Co). (Co-listed as *Memoirs* number 12.)

Part VII. 1912. Section XV. 'Dwarfism', by H. Rischbieth and Amy Barrington (London: Dulau and Co). (Co-listed as *Memoirs* number 15.)

[Part VIII]. 1912. 'Prefatory Matter and Indices to Volume I with Frontispiece Portraits of Sir Francis Galton and Ancestry', includes: Karl Pearson. 1912. Preface, pp. iii–vi (London: Dulau and Co). (Co-listed as *Memoirs* number 16.)

Volume II: *Nettleship Memorial Volume on Anomalies and Diseases of the Eye* (1933)

Part I. 1922. 'Retinitis Pigmentosa and Allied Diseases', 'Congenital Stationary Night-Blindness', 'Glioma Retinae', by Julia Bell and includes: Karl Pearson. 1922. Prefatory Note, pp. v–vii; and J. B. Lawford. 1922. 'A Memoir of Edward Nettleship', pp. ix–xv (London: Cambridge University Press). (Co-listed as *Memoirs* number 21.)

Part II. 1926. 'Colour-Blindness', by Julia Bell (London: Cambridge University Press). (Co-listed as *Memoirs* number 23.)

Part III. 1928. 'Blue Sclerotics and Fragility of Bone', by Julia Bell (London: Cambridge University Press). (Co-listed as *Memoirs* number 24.)

Part IV. 1931. 'Hereditary Optic Atrophy', by Julia Bell (London: Cambridge University Press). (Co-listed as *Memoirs* number 26.)

Part V. 1932. 'On Some Hereditary Structural Anomalies of the Eye and On the Inheritance of Glaucoma', by Julia Bell (London: Cambridge University Press). (Co-listed as *Memoirs* number 27.)

[Part VI]. 1933. 'Name and Subject Indices to Volume II', by Julia Bell (London: Cambridge University Press). (Co-listed as *Memoirs* number 28.)

Volume III: *Bone Development* (1925)

Part I. 1925. 'Hereditary Disorders of Bone Development', by Percy Stocks and Amy Barrington (London: Cambridge University Press). (Co-listed as *Memoirs* number 22.)

Volume IV: *Nervous Diseases and Muscular Dystrophies* (1948)

Part I. 1934. 'Huntington's Chorea', by Julia Bell (London: Cambridge University Press). (Co-listed as *Memoirs* number 29.)

Part II. 1935. 'On The Peroneal Type of Progressive Muscular Atrophy', by Julia Bell (London: Cambridge University Press). (Co-listed as *Memoirs* number 30.)

Part III. 1939. 'On Hereditary Ataxia and Spastic Paraplegia', by Julia Bell assisted by E. Arnold Carmichael (London: Cambridge University Press). (Co-listed as *Memoirs* number 31.)

Part IV. 1943. 'Pseudohypertrophic and Allied Types of Progressive Muscular Dystrophy', by Julia Bell (London: Cambridge University Press). (Co-listed as *Memoirs* number 32.)

Part V. 1947. 'Dystrophia Myotonica and Allied Diseases', by Julia Bell with Clinical Notes by J. Purdon Martin (London: Cambridge University Press). (Co-listed as *Memoirs* number 33.)

[Part VI]. 1948. 'Name and Subject Indices to Volume II', by Julia Bell (London: Cambridge University Press). (Co-listed as *Memoirs* number 34.)

Volume V: *On Hereditary Digital Anomalies* (1951–58)

Part I. 1951. 'On Brachydactyly and Symphalangism', by Julia Bell (London: Cambridge University Press). (Co-listed as *Memoirs* number 35.)

Part II. 1953. 'On Syndactyly and Its Association with Polydactyly', by Julia Bell and Lionel S. Penrose (London: Cambridge University Press). (Co-listed as *Memoirs* number 38.)

Part III. 1958. 'The Laurence-Moon Syndrome', by Julia Bell (London: Cambridge University Press). (Co-listed as *Memoirs* number 39.)

APPENDIX 4

Questions of the Day and of the Fray

1 Pearson, Karl. 1910. *The Influence of Parental Alcoholism on the Physique and Ability of the Offspring. A Reply to the Cambridge Economists* (London: Dulau and Co.). 26 pp.

2 Heron, David. 1911. *Mental Defect, Mal-Nutrition, and the Teacher's Appreciation of Intelligence. A Reply to Criticism of the Memoir on 'The Influence of Defective Physique and Unfavourable Home Environment on the Intelligence of School Children'* (London: Dulau and Co.). 34 pp.

3 Pearson, Karl. 1911. *An Attempt to Correct Some of the Misstatements made by Sir Victor Horsley, FRS, FRCS, and Mary D. Sturge, MD, in their Criticisms of the Galton Laboratory Memoir: 'A First Study of the Influence of Parental Alcoholism, etc.'* (London: Dulau and Co.). 42 pp.

4 Pearson, Karl. 1911. *The Fight Against Tuberculosis and the Death-rate from Phthisis* (London: Dulau and Co.). 35 pp.

5 Pearson, Karl. 1912. *Social Problems: Their Treatment, Past, Present and Future, A Lecture Delivered at the Galton Laboratory for National Eugenics, March 19, 1912* (London: Dulau and Co.). 40 pp.

6 Pearson, Karl. 1912. *Eugenics and Public Health. A Lecture Delivered to the York Congress of the Royal Sanitary Institute, July 30th, 1912* (London: Dulau and Co.). 34 pp.

Reprinted from *Journal of Royal Sanitary Institute. Transactions*, 33 (1912), 304–335.

7 Heron, David. 1913. *Mendelism and the Problem of Mental Defect. I. A Criticism of Recent American Work* (London: Dulau and Co.). 62 pp.

8 Pearson, Karl, and Jaederhølm, Gustav A. 1914. *Mendelism and the Problem of Mental Defect. II. On the Continuity of Mental Defect* (London: Dulau and Co.). 47 pp.

9 Pearson, Karl. 1914. *Mendelism and the Problem of Mental Defect. III. On the Graduated Character of Mental Defect and on the need for Standardizing Judgments as to the Grade of Social Inefficiency Which Shall Involve Segregation* (London: Dulau and Co.). 51 pp.

10 Pearson, Karl. 1920. *The Science of Man: Its Needs and Its Prospects. Being the Presidential Address to Section H. of the British Association for the Advancement of Science* (London: Cambridge University Press). 17 pp.

11 Pearson, Karl. 1922. *Francis Galton,1822–1922. A Centenary Appreciation. With Frontispiece Drawing of Francis Galton* (London: Cambridge University Press). 23 pp.

12 Pearson, Karl. 1923. *Charles Darwin, 1809–1882. An Appreciation. With Frontispiece Portrait and Plate of Noah's Ark. Being a Lecture Delivered to the Teachers of the London County Council, March 21, 1923* (London: Cambridge University Press). 27 pp.

APPENDIX 5

Drapers' Company Research Memoirs. Studies in National Deterioration

1 Heron, David. 1906. *On the Relation of Fertility in Man to Social Status, and On the Changes in This Relation That Have Taken Place in the Last Fifty Years* (London: Dulau and Co.). 22 pp.

2 Pearson, Karl. 1907. *A First Study of the Statistics of Pulmonary Tuberculosis* (London: Dulau and Co.). 26 pp.

3 Pope, Ernest G. (deceased), edited and revised by Karl Pearson. 1908. *A Second Study of the Statistics of Pulmonary Tuberculosis: Marital Infection. With an Appendix on Assortative Mating from Data Reduced by Ethel M. Elderton* (London: Dulau and Co.). 36 pp.

Title page and endpapers do not specify this as a publication in this series, but structure and format is followed, and the item is listed as number 3 in later endpapers.

4 Pearson, Karl. 1910. *On the Relationship of Health to the Psychical and Physical Characters in School Children* (London: Dulau and Co.). 77 pp.

Advertised on endpapers as 'The Health of the School-Child in Relation to its Mental Characters'. This was reprinted in 1923 by Cambridge University Press. 77 pp.

5 Goring, Charles. 1909. *On the Inheritance of the Diatheses of Phthisis and Insanity. A Statistical Study Based Upon the Family History of 1500 Criminals* (London: Dulau and Co.). 28 pp.

6 Elderton, William Palin, and Sidney J. Perry. 1910. *A Third Study of the Statistics of Pulmonary Tuberculosis. The Mortality of the Tuberculous and Sanatorium Treatment* (London: Dulau and Co.). 36 pp.

Includes Prefatory Note by Karl Pearson, p. 2.

7 Snow, Ernest C. 1911. *The Intensity of Natural Selection in Man* (London: Dulau and Co.). 43 pp.

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8 Elderton, W. Palin, and Sidney J. Perry. 1913. *A Fourth Study of the Statistics of Pulmonary Tuberculosis: The Mortality of the Tuberculous: Sanatorium and Tuberculin Treatment. Based on (i.) Dr. Lawrason Brown's Adirondack Sanitarium data. (ii.) Data from Two Scottish Sanatoria. (iii.) Dr. Austin Flint's Data from Pre-Sanatorium Days* (London: Dulau and Co.). 55 pp.

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9 Williams, Mary H. [*sic*: Frances], Julia Bell, and Karl Pearson. 1914. *A Statistical Study of Oral Temperatures in School Children with Special Reference to Parental, Environmental, and Class Differences* (Cambridge: Cambridge University Press). 124 pp.

10 Karn, Mary Noel, and Karl Pearson. 1922. *Study of the Data Provided by a Baby-Clinic in a Large Manufacturing Town* (Cambridge: Cambridge University Press). 128 pp.

11 Stocks, Percy, assisted by Mary Noel Karn. 1924. *Blood Pressure in Early Life. A Statistical Study* (Cambridge: Cambridge University Press). 88 pp.