breathe, the Oxygen of the air is used up, and Carbonic Acid is formed.



FIG. 2.

Experiment IV. Take a tumbler and fill it halffull of lime-water. Now take in breath and then blow gently through a glass tube or a straw for a short time.



Twenties

SCIENCE + MEDICINE

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SCIENCE + MEDICINE

TYPE & FORME TWENTIES-001

Welcome to 'Type & Forme Twenties' – a new series of themed catalogues, each formed of 20 selected items. 'Science + Medicine' from the mid-nineteenth to the mid-twentieth century is the subject of this first issue, which spans the sciences from Michael Faraday's electrical experiments to Gregory Pincus' pioneering researches into in vitro fertilisation, via John Venn (the inventor of the eponymous diagram) and Elie Metchnikoff.

One of the particular strengths of this catalogue are works popularizing scientific knowledge by major figures such as Albert Einstein, Sir Fred Hoyle – whose *Nature of the Universe* introduced the phrase 'Big Bang' – and Sir Julian Huxley. Another is the science of exploration, represented by a copy of *The Ascent of Everest* signed by Michael Ward (the expedition doctor), and *Keeping Fit for Flying*, 1943, Ross McFarland's rare occupational health study for Pan-Am, which warns against the physiological effects of drinking and smoking for air crew.

Other subjects include midwifery, surgery, public health, gerontology, evolution, genetics, psychoanalysis, oceanography, atomic theory, and the 'two cultures', encapsulated by the final item: a series of Christmas cards featuring a scientist's poetry illustrated by his artist wife's drawings.



1856

1860

1865

1865

1873

1879

1879

1897

TABLE OF CONTENTS

- FARADAY, MICHAEL. 'Experimental Researches in Electricity' in Philosophical Transactions
- ARISTOTLE. Aristotle's Works: Containing the Master-Piece, Directions for Midwives...
- BRODHURST, B.E. Practical Observations on the Diseases of the Joints
- VENN, JOHN · prize copy of Goodwin's Memoir of Bishop Mackenzie signed by Venn
- 5 ROSER, W.F. Manual of Surgical Anatomy
- 6 WURTZ, ADOLPHE. La théorie atomique · presentation copy from the author
- 7 RIDGE, J.J. The Temperance Primer
- 8 WALSH, J.F. The Anatomy and Functions of the Muscles of the Hand · presentation copy from the author
- 1903 9 METCHNIKOFF, ELIE. Études sur la nature humaine
- 1912 10 GOODRICH, E.S. The Evolution of Living Organisms
- 1926 11 BEEBE, WILLIAM. The Arcturus Adventure · association copy
- 1936 12 PINCUS, G.G. The Eggs of Mammals · association copy
- 1938 13 GOLDSCHMIDT, R.B. Physiological Genetics
- 1938 14 EINSTEIN, ALBERT & LEOPOLD INFELD. The Evolution of Physics
- 1943 15 MCFARLAND, R.A. Keeping Fit for Flying
- 1944 16 HUXLEY, JULIAN. On Living in a Revolution
- 1949 JONES, ERNEST. What is Psychoanalysis?
- 1950 18 HOYLE, FRED. The Nature of the Universe
- 1953 19 HUNT, JOHN. The Ascent of Everest · signed by Michael Ward
- 1957 20 BRONOWSKI, JACOB & RITA. Six Christmas cards with original illustrations · signed



1. FARADAY, Michael. 'Experimental Researches in Electricity – Thirtieth Series', in: *Philosophical Transactions of the Royal Society of London. For the Year MDCCCLVI. Vol. 146. – Part I*, pp. 159-180. London: Richard Taylor and William Francis [for the Royal Society], 1856.

Quarto (297 x 228mm), pp. x (title, blank, advertisement, list of recipients of copies and subscribers, blank, contents), 418, [2 (blank l.)]. 8 lithographic plates and maps by J. Basire, W. Lens Aldous, and George West after West *et al.*, printed by Day & Son *et al.*, 5 engraved plates and maps by James Basire III after Lionel Beale *et al.*, and 2 engraved graphs by Basire, one folding, letterpress tables (some full-page) and wood-engraved illustrations and diagrams in the text. (Very occasional light spotting, heavier on a few plates, short marginal tear on title due to clumsy opening, pl. IX with short tear, pl. XIII detached but present.) Original grey printed wrappers, entirely uncut and (apart from a few quires) entirely unopened. (Wrappers lightly browned and marked, extremities slightly bumped, short tear on upper wrapper, spine-ends with short splits causing small losses at foot.) A very good, fresh copy in the original wrappers. *Provenance*: [?]early-20th-century manuscript volume number on spine.

THE CONCLUSION OF FARADAY'S GROUND-BREAKING 'EXPERIMENTAL RESEARCHES IN ELECTRICITY'

First edition. Faraday (1791-1867), who was employed as a fourteen-year-old apprentice bookbinder by the bookseller George Ribeau, first encountered science when one of Ribeau's customers gave him tickets to attend four of the final lectures delivered by Humphry Davy, the professor of chemistry at the Royal Institution, in 1812. Faraday's subsequent scientific career started as an assistant at the laboratory of the Royal Institution, of which he would become the director in 1825. By the time of the publication of this present paper he had achieved international renown, which was reflected in numerous awards and honours, including fellowship of the Royal Society, membership of the Prussian order of merit and the French Légion d'honneur, etc. Published in 1856, and thus during a period of exceptional activity and innovation within the circles of the Royal Society, this issue of the *Philosophical Transactions* concludes Faraday's ground-breaking series of 'Experimental Researches in Electricity' – the papers relating his major discoveries in electricity and magnetism.

'With this work Faraday [...] perfected his methodical way of recording and keeping control of his experimental results. On 25 August 1832 he commenced numbering the paragraphs of his laboratory notebook in a sequence that would conclude on 6 March 1860 with paragraph 16,041. He would cross-refer between entries and on at least two occasions he compiled indexes allowing him quickly to locate the results of experiments conducted many years previously. Faraday published his induction work in the first of a series of papers with the overarching title Experimental Researches in Electricity. The papers were nearly all published in the *Philosophical Transactions* and their paragraphs also were sequentially numbered ending with paragraph 3430 of series thirty in 1856' (ODNB). Most of these papers were then collected in Faraday's *Experimental Researches in Electricity*, which was published in three volumes between 1839 and 1855 (concluding with paragraph 3234), and 'encompasses the entire range of Faraday's remarkable achievement, including his discovery of electromagnetic induction, his demonstration of the identity of all forms of electricity, his first general theory of electricity as a function of interparticulate strain, and the last series of researches on magnetic energy in favour of one locating the manifestation of magnetic energy in the field surrounding the magnet' (Norman 762). The present 'Thirtieth Series', which was read to the Royal Society on 15 and 22 November 1855, comprised paragraphs 3363 to 3430, and was first published in this volume of *Philosophical Transactions* in 1856, the year after the publication of the final volume of *Experimental Researches in Electricity*, and thus it forms both a supplement and a conclusion to the series.

Other works in this volume include a paper by the Irish chemist and physicist Thomas Andrews 'On the Constitution and Properties of Ozone' – Andrews 'proved that ozone is a form of oxygen' (*Encyclopaedia Britannica*), with this paper (likely the first to propose this theory) concluding that 'ozone, from whatever source derived, is one and the same body, having identical properties and the same constitution, and is not a compound body, but oxygen in an altered or allotropic condition' (p. 13); a paper by Humphrey Davy's brother John, a surgeon and naturalist whose help Darwin enlisted on the question of the survival of fertilised salmon eggs ('Some Observations on the Ova of the Salmon, in Relation to the Distribution of Species; in a Letter Addressed to Charles Darwin'); three articles by the mathematician and astronomer George Biddell Airy, who had invented the first successful mechanical system of compass correction in 1838 ('Discussion of the Observed Deviations of the Compass in several Ships, Wood-built and Iron-built...', 'Account of Pendulum Experiments undertaken in the Harton Colliery...' and its 'Supplement'); the Irish-born natural philosopher John Tyndall's 'Further Researches on the Polarity of the Diamagnetic Force', which continued his argument with Faraday, who had discovered diamagnetism in 1845; and James Prescott Joule's 'Introductory Research on the Induction of Magnetism by Electrical Currents' (i.e. electromagnetism).



2. ARISTOTLE, pseud. Aristotle's Works: Containing the Master-Piece, Directions for Midwives, and Counsel and Advice to Child-Bearing Women. With Various Useful Remedies. London: John Smith for 'the Booksellers', [c. 1840-1860].

Octavo (118 x 78mm), pp. [1]-5 (half-title, blank, title, blank, advertisement), [vi]-viii (contents), 9-352. Engraved frontispiece, engraved additional title ('The Works of Aristotle the Famous Philosopher. In Four Parts.') with vignette depicting a new-born baby with its mother and a midwife or nurse, 6 wood-engraved plates, and wood-engraved illustrations in the text. (Very light browning, a few II. with very light marginal creasing.) Original green cloth, boards blocked with blind ornamental frame within ruled border, spine blocked in blind with 5 compartments, one directly lettered in gilt, all edges green. (Slight discoloration on edges of block, some offsetting on endpapers, extremities lightly rubbed and bumped, short split at foot of spine.) A very good copy in the original cloth.

'SAFE, SPEEDY, AND COMPARATIVELY EASY' CHILDBIRTH:

PSEUDO-ARISTOTLE ON WHAT TO EXPECT WHEN EXPECTING

Reprint. In the early modern period, the popularity of manuals on conception, pregnancy and childbirth – especially Nicolas Culpeper's *Directory for Midwives* (1651) – intersected with the continued popularity of Aristotelian works, as well as the skills of writers and booksellers in reacting

quickly to such trends for their own benefit, so that the pseudo-Aristotelian Aristotle's Masterpiece (first published in 1684) became 'the best-selling guide to pregnancy and childbirth' and witnessed 'more editions than all other popular works on the topic combined' through to the late nineteenth century (Mary E. Fissell, 'Hairy Women and Naked Truths: Gender and the Politics of Knowledge in Aristotle's Masterpiece', The William and Mary Quarterly 60 (2003), pp. 43-74, at p. 43). Indeed, such was its impact on popular culture that references to it can be found in the literature of the early twentieth century; for example, Leopold Bloom is shown a copy in a Dublin bookshop in James Joyce's Ulysses (1922) with further references to the text recurring in the novel, while the second chapter of Evelyn Waugh's Vile Bodies (1930) describes customs officers at Dover searching Adam Fenwick-Symes' luggage for banned books, and consulting a list which began 'Aristotle, Works of (Illustrated)'.

The first edition of the text, which appears to have survived in three main states, was a combination mostly of Levinus Lemnius' *Secret Miracles of Nature* (1559, first and only English edition 1658) and the anonymous *Complete Midwives Practice*, which was itself a compilation of earlier texts. The text was revised, reworked, and modified throughout the following two centuries. The

present, attractive mid-nineteenth-century edition belongs to a group published between about 1840 and 1860, and continues the tradition of adapting these topics for the tastes of a contemporary audience. This copy has a slightly risqué frontispiece, in which a woman in a see-through shift consults a male doctor, apparently on one of the topics discussed in the volume, with a bust (presumably of Aristotle) presiding over the scene. This is a later rendition of the frontispiece which first appeared in the 1697 edition of *Aristotle's Masterpiece* (this edition included a poem signed by William Salmon, to whom the text is sometimes attributed), and was derived from John Sadler's popular book about uterine disorders, *The Sicke Woman's Private Looking-Glasse* (1636). The plates are somewhat stylised anatomical images of each month of pregnancy from conception to delivery, while the illustrations in the text show physical abnormalities from the wonderous to the monstrous.



ANKYLOSIS AS A SNAPSHOT OF SOCIETY IN THE MID-NINETEENTH CENTURY:



THE THIRD, GREATLY ENLARGED EDITION, PUBLISHED UNDER A NEW TITLE

3. BRODHURST, Bernard Edward. Practical Observations on the Diseases of the Joints involving Anchylosis, and on the Treatment for the Restoration of Motion... Third Edition. London: J.E. Adlard for John Churchill, '1861' [but c. 1865].

Octavo (221 x 137mm), pp. [i]-xi, [1 (blank)], [1]-120, [2 (publisher's advertisements dated 'June, 1865')], [1]-32 (publisher's catalogue, with printed border). P. 3 of publisher's catalogue misnumbered '8'. (Very lightly foxed.) **Original brown cloth**, boards with border of double blind rules, spine lettered in gilt and with ornamental blind roll-tooling, lemon-yellow endpapers. (Lightly marked, extremities somewhat rubbed and bumped causing wear at spine-ends.) A very good copy in the original cloth. **£125**

Third, enlarged and retitled edition, later issue. Brodhurst (1822-1900) was a surgeon at the London Hospital, where he had undertaken his studies, which were supplemented by travels to continental medical schools in Paris, Vienna, and Berlin. Brodhurst travelled to Rome in late 1848 or early 1849 in the company of the poet Arthur Hugh Clough (whose epistolary verse-novel *Amours de Voyage* describes the city at this time), and was in the city during Garibaldi's occupation and during the siege by the French army under General Oudinot in the spring of 1849: '300 wounded were left on the field, and these were taken into city hospitals [...]. The prisoners were afraid of the Italian surgeons,

Twenties

and begged that any foreigners might be asked to take care of them' (obituary in the *British Medical Journal*, 3 March 1900, p. 548). Since Brodhurst was the only foreign surgeon who had not fled the city at the outbreak of hostilities, the enormous task of tending the injured French prisoners fell upon him, and his endeavours were recognised by the cross of the Legion of Honour, which he was awarded by *maréchal* Baraguey d'Hilliers, the French Commander-in-Chief. In 1852 Brodhurst returned to London, joined the Royal Orthopaedic Hospital, and continued working as an orthopaedic surgeon until his death, with his work on ankylosis his most celebrated achievement.

As the preface explains, Brodhurst's first observations on ankylosis and related diseases appeared in the *Medico-Chirurgical Transactions* (1857, 'On Forcible Extension and Rupture of the Uniting Medium of Partially Ankylosed Surfaces', pp. 125-140, a selection of eight case studies, published separately in London by J.E. Adlard in the same year) and the *Medical Times and Gazette* (1858, 'On the Restoration of Motion by Forcible Extension and Rupture of the Uniting Medium of Partially Anchylosed Surfaces', comprising ten case studies and again published separately by Adlard in the same year), and these two works were subsequently combined and published under the title *On the Treatment of Anchylosis, or The Restoration of Motion in Stiff Joints* (London, 1859), with a second edition of thirty-nine pages appearing in the same year. The present 'third edition', issued under the title of *Practical Observations on the Diseases of the Joints involving Anchylosis, and on the Treatment for the Restoration of Motion,* 'has been rewritten and much new material has been added. The same views are inculcated as before, subsequent and greatly enlarged experience (embracing 114 cases) having confirmed my former statements' (p. [vii]). Of these, twenty cases were selected to be included in great detail in the book, which, at three times the length of its previous edition, may almost be considered a new work.

The work covers the identification of and distinction between true and false ankylosis, and their respective treatments (for the latter, the use of chloroform, manipulation, and surgery are discussed). The case studies include a member of the Royal Engineers who had returned from the trenches near Sebastopol with a bullet wound in 1845 and whose hip joint had lost mobility over the years; an army officer stationed in Sri Lanka who had suffered from various inflammations resulting in a similar immobility in the hip; patients who had suffered from juvenile or later rheumatism; a child who had been 'jerked up from the ground by his nurse' (p. 70) aged three and still presented with problems on the forearm five years later; and several cases of troublesome knee joints, fingers, and shoulders, caused by gonorrhoea. As such, these cases provide a snapshot of society, life, and injury in the mid-nineteenth century.

The work is dedicated to the surgeon Henry Spencer Smith (1812-1901), the professor of surgery at St Mary's Hospital who was, like Brodhurst, a Fellow of the Royal College of Surgeons.



4. VENN, John – Harvey GOODWIN. *Memoir of Bishop Mackenzie*. Cambridge and London: C.J. Clay at the University Press for Deighton, Bell, and Co. and Bell and Daldy, 1864.

Octavo (185 x 124mm), pp. xii, 439. Tinted lithographic portrait frontispiece by F. Schenck, 2 tinted lithographic plates and one folding tinted lithographic plate by Schenck after C. Meller, 2 folding lithographic maps by Stanford's Geographical Establishment, and one lithographic map by Spottiswoode & Co. Wood-engraved illustrations and diagrams in the text. (Very occasional light spotting, some very light marginal damp-marking, printing flaw on p. 80, folding plate reinforced on fold and with short marginal tears, one folding map creased on fold and chipped at fore-edge.) Contemporary full purple crushed morocco gilt prize binding by J.B. Hawes, Cambridge for the Perse School, upper board with gilt arms of the Perse School, boards with borders of triple blind-ruled frames, spine gilt in 6 compartments between raised bands, directly lettered in gilt in one and with date at foot of spine, bands enclosed by triple blind rules, board-edges roll-tooled in blind, turn-ins rolltooled in gilt, all edges gilt, cream endpapers. (Extremities lightly rubbed and bumped, very skilful old repair at head of spine.) A very good copy in a handsome prize binding. Provenance: Perse School, Cambridge (prize awarded to:) - W.J. Batchelor, 1865 (1846-1917, presentation inscription 'Perse School, Mids[umme]r 1865 Writing Prize W.J. Batchelor', signed by Charles Clayton (who wrote the last two lines of the inscription) as 'Master', and Henry Barclay Swete (who wrote the first two lines of the inscription) and John Venn (these last two identified in Swete's hand as 'Examiners'.) £400

MATHEMATICS AND CAMBRIDGE MISSIONARIES – A HANDSOME PERSE SCHOOL PRIZE SIGNED BY THE BIBLICAL SCHOLARS CLAYTON AND SWETE, AND THE LOGICIAN JOHN VENN

First edition. The Perse Free School was founded in 1615 by the will of Stephen Perse MD, a Fellow of Gonville and Caius College, and was originally situated in what is now the Whipple Museum on Free School Lane, Cambridge. After falling into decline in the eighteenth and early nineteenth centuries, the school was put back on a proper footing in 1837, and suitable staff hired for the first time for many decades. Among them was Charles Clayton (1813-1883), who was temporarily appointed Master of the Perse School for just one year in 1836, after having been elected junior fellow of Gonville and Caius. Clayton, who had won various Classical prizes and taught Hebrew and Greek, was '[w]ell known in Cambridge by his genial character, as a preacher at [Holy] Trinity church,

PELSE School hit : 1865. Toniting Prize W. J. Batchelor 1. Mayton .. Inste H. 15. Swetz Examinen.

and as the most prominent "evangelical" in the University' (John Venn, *Biographical History of Gonville and Caius College 1349-1897* (Cambridge: 1898), II, p. 218), and he remained a member of the governing body of the school. The presentation inscription in the volume was signed by Clayton and two examiners: the classical and biblical scholar Henry Barclay Swete (1835-1917), a scholar and later fellow and dean at Gonville and Caius, and Regius Professor of divinity from 1890 onwards (*cf.* Venn II, p. 316), and the philosopher and logician John Venn (1834-1923).

Twenties

4

The son of the evangelical divine and Secretary of the Church Missionary Society Henry Venn (1796-1873), John Venn graduated in mathematics from Gonville and Caius College, became a fellow of the College, and was ordained deacon at Ely in 1858 and priest in the following year. Unhappy with parochial life, Venn returned to Cambridge in 1862 (he eventually resigned from the clergy in 1883), where he taught moral sciences, and expanded his research and teaching in logic and probability studies. In 1866, the year after he signed this volume, Venn published The Logic of Chance, and in 1869 his Hulsean lectures, Some Characteristics of Belief, Scientific and Religious: 'In The Logic of Chance Venn pioneered the frequency theory of probability, in which assertions of probability are understood as purely empirically based judgements of the recurrence of types of events over time, independent of an observer's feelings. As with much of his work, Venn is here exploring the logic and limits of belief. As with his Hulsean lectures, his advice is to err in favour of scepticism. His originality does not lie in the theory of probability which he developed, nor

in his rejection of alternative theories, especially the idea that probability deals with graduations of beliefs. It is displayed in his patient analysis of the wide variety of different and yet legitimate uses of the term probability, which makes theorizing so complex and difficult, his recognition that probability theory had application to a limited proportion of human conduct, and his application of this to the moral sciences' (ODNB). In 1880 Venn published *On the Diagrammatic and Mechanical Representation of Propositions and Reasonings*, the work which created his international reputation and describes the eponymous diagrams, used to provide 'a simple, but highly versatile and functional, visual representation of logical relations using circles in various overlapping and intersecting positions. They are still used to test the validity of a syllogism' (*loc. cit.*). In tandem with his works on logic, Venn was the author of a number of works on the history of Cambridge, its university and colleges, and collegiate life, including his *Biographical History of Gonville and Caius College 1349-1897* cited above and, with his wife, *The Perse School, Cambridge: Notes from 1619* to 1864 from the Admission Registers of Gonville and Caius College and other Sources (Cambridge: 1890).

In this context, this biography of Charles Frederick Mackenzie (1825-1862), the bishop of Africa, was a particularly suitable prize, since it was written by Harvey Goodwin (1818-1891), the churchman and erstwhile lecturer in mathematics at Gonville and Caius College. Goodwin 'was much concerned with the relationship between science and religion' (ODNB), and had served at several Cambridge churches before being appointed to the deanery of Ely in November 1858 (the month that Venn was ordained deacon at the cathedral), where he wrote the *Memoir of Bishop Mackenzie*, based on Mackenzie's letters and other materials subsequently entrusted to him by Mackenzie's family. Like his biographer, Mackenzie enjoyed a talent for mathematics and was a graduate of Gonville and Caius College, whence he graduated BA from the mathematical tripos in 1848, MA in 1851, and he was a fellow of the college from 1848 until the end of his life. He held various offices in and around Cambridge, including those of examiner for mathematical honours and secretary to the Cambridge board of education, before embarking upon his career as a missionary to Africa in 1855, when he was appointed archdeacon to John William Colenso, the Bishop of Natal. After ministering to the English settlers, soldiers, and a small congregation of Africans in the Durban area, aided by his sister Alice, Mackenzie returned to England in the summer of 1859 due to illness.

In November of the same year, however, following plans begun after David Livingstone's speeches at Oxford and Cambridge in late 1857, Mackenzie became the head of the new Universities' Mission to Central Africa. He returned to Africa, was consecrated bishop of central Africa in Cape Town Cathedral on 1 January 1861, and, shortly after, met Livingstone, with whom he travelled up the Zambezi, and liberated a group of 84 slaves in the Zambezi valley. Further rescues followed, causing Mackenzie and his party to join the wars in the area – a move that was not uncontroversial: '[t]he bishop interpreted the wars as "tribal" and understood his own actions as giving support to the secular authority of his diocese. In practice, the whole region had passed under the control of warlords [...]. In December, when three of his party were exploring a shorter route to the Shire, they were attacked under the impression that they were slavers at the village of Mangasanja and two men and some goods seized. Mackenzie engaged the help

of the Makololo people, and set out on 23 October 1861 to punish those he believed to be the aggressors, burnt Mangasanja, and recovered the missing men. He then had to hasten to the confluence of the Ruo and the Shire, where Livingstone had arranged to meet him with stores on 1 January 1862' (ODNB). Problems on the journey caused delays and Mackenzie arrived too late to meet Livingstone, dying at Malo Island of a fever on 31 January 1862, as Livingstone first reported in a letter. Goodwin's final chapter considers Mackenzie, his deeds, and his controversial behaviour, from a measured point of view, emphasising the importance of continuing the mission; the verso of the title states that, '[t]he profits of the sale of this Work are given to the Funds of the Universities' Mission to Central Africa'.

This prize volume was awarded to W.J. Batchelor, who 'was a foundation scholar of Emmanuel College, Cambridge, and gained a first class in the Classical Tripos and the position of second Senior Optime in Mathematics. From 1870 to 1882 he was mathematical master and head of the Modern Side at Learnington College, [...] from there was appointed to the rectory of Horsleydown, S.E.', and subsequently he was vicar of Brompton Regis and Winsford, and rector of Whitstone, Exeter, as well as, for ten years, Rural Dean of Dunster (obituary, *The Times*, 22 November 1917, p. 9).

Mendelssohn I, p. 947; Work, A Bibliography of the Negro in Africa and America, p. 211.



The skin and fascia of the anterior humeral region has been removed. 1. Fectoralis major. 2. Deltoid muscle; between which and the preceding the caphalle vein is seen. 3. Biceps. 4. Coracobrachialis; close to which is the brachial artery. The median nerve is drawn to one side. INVITATION TO DISSECTION:

AN ANATOMICAL GUIDE FOR STUDENTS AND DOCTORS

BY A MEDICAL VETERAN OF THE FRANCO-PRUSSIAN WAR

5. ROSER, Wilhelm Ferdinand and John C. GALTON (translator). *Manual of Surgical Anatomy ... Translated from the Fourth German Edition, by Special Permission of the Author.* London: Savill, Edwards and Co. for Henry Renshaw, 1873.

Octavo (163 x 105mm), pp. [2 (publisher's advertisements)], xxi, [1 (blank), 296. Title printed in red and black. 75 wood-engraved illustrations in the text. (Very occasional very light marking, small marginal tear on a4 not affecting text.) Original dark-brown cloth, boards with blind-stamped series title within rhomboid triple blind frame, blind-ruled border, spine lettered in gilt, all edges red, chocolate-brown endpapers. (Spine slightly leant, small mark on boards, extremities lightly rubbed and bumped with small losses to edges.) A very good copy.

Twenties

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First English edition. The greatest endeavour of Wilhelm Roser (1817-1878) was the improvement of medical training and knowledge in Germany by employing the methods and insights of medical teachers and doctors in other countries. Roser studied medicine at Tubingen from 1834, lectured there from 1841 to 1846 and, following a few years in private practice, was made professor of surgery and ophthalmology in 1850 at Marburg, where he established a new surgical clinic, advancing ophthalmological studies. However, he also travelled to universities and hospitals across the German-speaking countries (Wurzburg, Halle, Berlin, Bonn, Jena, Leipzig, Vienna), and to Paris and London, and consequently came to believe that the English and French medical schools, with their emphasis on practical experience and lively exchange between students and teachers, were superior to the German system. Notably, as a consultant in the Franco-Prussian war of 1870-1871, Roser specialised in reconstructive plastic surgery, surgery on broken limbs and other orthopaedic procedures, and urinary stones (which, famously, were of much trouble to Napoleon III at the time). All these themes are present in the present work, which, with its rich illustrations providing 'window-sections' (i.e. apertures in the skin or muscle created to show what lies beneath) also shows Roser's conviction that a solid medical knowledge must be founded upon accurate physiological and pathological observations.

Based on the fourth, enlarged edition of Roser's *Chirurgisch-anatomisches Vademecum* (first published in Stuttgart in 1847 and followed by further German editions in 1852, 1863 and 1870), this is a condensed, practice-oriented guide to the human body from head to toe. In his preface to the third German edition, reproduced here, Roser remarks that this 'vade-mecum has not been put together with the intention of sparing beginners in medicine more accurate study of the dead body [...] but rather to serve preeminently as an inducement and a guide to chirurgo-anatomical exercises on the dead subject', in preparation for experience in surgery (p. ix). This publication was intended to complement Roser's more comprehensive but more theoretical *Handbuch der anatomischen Chirurgie* (first published at Tubingen in 1844, and revised and re-published in numerous editions through the nineteenth century), and was the only work of Roser's to be made available to an English-speaking audience.

The translator explains in his preface that in England 'no handbook of Surgical Anatomy has been either written, or introduced from foreign sources, in the English tongue', but that 'nearly all of those with whom I have spoken on the subject have – strange to say – regarded a manual on Surgical Anatomy and a manual of Operative Surgery on the Dead Body almost as convertible terms; thus failing to recognise the fact that a work such as the latter, all-important though it be, deals only with the carpentry, so to speak, of surgical science, while the former is concerned with the salient points to which the surgeon must ever have regard, as well in the living as in the dead body' (pp. v-vi).



A WURTZ A. WURTZ LA THÉORIE ATOMIQUE

6. WURTZ, (Charles) Adolphe. *La théorie atomique*. Paris: Imprimerie Paul Brodard for Librairie Germer Baillière et Cie, 1879.

Octavo (212 x 128mm), pp. [4 (series-title, list of series titles, title, blank)], [1]-248, [4 (advertisements for the Bibliothèque Scientifique Internationale)], [1]-32 (publisher's catalogue dated October 1878). Folding lithographic graph after Lothar Meyer, letterpress tables in the text. (Occasional light spotting, folding table slightly creased and with very small surface loss due to traces of adhesive on facing text.) Original purple cloth gilt, boards with blind-ruled borders, upper board lettered in gilt within gilt frame with series title, lower board with publisher's device in gilt, spine lettered and decorated in gilt, top edges brown, blue-green endpapers. (Spine faded, corners slightly bumped, partial superficial splitting on joints, somewhat shaken.) *Provenance*: **Hugo Heinrich Wilhelm Müller** (1833-1915, authorial presentation inscription on front free endpaper 'A Monsieur le Dr Hugo Müller F[.]R.S. hommage de l'auteur A[dolphe]W[urtz]'; by descent to his estate, by whom gifted to:) – Bedford College, University of London, May 1916 (engraved bookplate on upper pastedown, engraved donation booklabel below with Müller's name and the date added by hand; manuscript pressmarks and inkstamps on free endpapers and bookplate, early-20th-century inkstamp on title and pressmark labels on spine; late-20th-century withdrawal inkstamp on bookplate).

PRESENTATION COPY OF AN IMPORTANT & EARLY ACCOUNT OF MENDELEEV'S WORK

INSCRIBED TO THE ANGLO-GERMAN CHEMIST HUGO MÜLLER BY THE AUTHOR

First edition. The distinguished French chemist Adolphe Wurtz (1817-1884) was educated at the University of Strasbourg and then at Giessen, where he studied with Liebig. In 1844 Wurtz moved to Paris, where he held a number of positions at the École de Médecine before being appointed professor at the newly established Institut Agronomique at Versailles. Unfortunately, the Institut Agronomique was closed in 1852, so Wurtz returned to the École de Médecine to take up a newly created professorship in the following year; he then became dean of the school in 1866, resigning from the role in 1875 to move to the chair of chemistry at the Sorbonne, which had been created for him. Wurtz' important researches into organic nitrogen compounds, hydrocarbons, and glycols ensured his international reputation, and his other achievements include the discovery of phosphorus oxychloride, the synthesis of ethylamine, the development of 'Wurtz synthesis' or 'Wurtz reaction' (a technique for preparing hydrocarbons from sodium and an alkyl halide), and the discovery of aldol.

In tandem with his researches, Wurtz – who spoke French, German, and English – was an important figure in national and

international scholarly communities: in France, he was elected a member of the Académie Impériale de Médecine in 1856 (becoming its vice-president in 1869 and president in 1871) and of the chemical section of the Académie des Sciences in 1867 (becoming its president in 1881), and was a founder member of the Association Française pour l'Avancement des Sciences. He was also a corresponding or foreign member of many overseas scientific academies and societies, and was elected a foreign member of the Royal Society in 1864, winning its prestigious Copley Medal in 1881.

La théorie atomique was published in the series 'Bibliothèque Scientifique Internationale', and is an important text on atomic theory and its history, divided into two parts. The first, 'Les atomes', commences with a historic survey of the work of earlier figures such as Richter and Dalton, followed by six chapters on the development of the discipline through the nineteenth century under the titles 'Loi des volumes: Gay-Lussac, Avogadro et Ampère, Berzelius', 'Hypothèse de Prout. Loi des chaleurs spécifiques. Isomorphisme', 'Système des équivalents chimiques', 'Système actuel des poids atomiques: Gerhardt et Laurent; M. Cannizzaro', 'Le nouveau système des poids atomiques respecte et permet de faire ressortir les analogies qui existent entre les corps', and 'Volumes atomiques et moléculaires'. The second part, 'L'atomicité', comprises four chapters dedicated to 'Définition et développement historique de la notion de l'atomicité', 'L'affinité et l'atomicité, deux propriétés distinctes des atomes', 'Constitution des corps déduite de la théorie de l'atomicité', and 'Hypothèses sur la constitution de la matière', followed by four brief 'Notes' and a folding graph of 'Propriétés des corps simples fonctions périodiques des poids atomiques' by Lothar Meyer.

The book is particularly interesting for its account of the work of Dimitri Mendeleev and Lothar Meyer on the periodic arrangement of the elements some ten years earlier, and Wurtz praises the former's work with these words: 'Dans ces derniers temps, les travaux de M. Mendéléeff ont jeté un jour nouveau sur les relations qui existent entre les poids atomiques des corps simples et leurs propriétés. Celles-ci sont fonction des poids atomiques, et cette fonction est *périodique*. Telle est la proposition énoncée par le chimiste russe. Elle n'est point limitée à tel ou tel groupe d'éléments: elle embrasse tous les corps simples de la chimie. Elle ne se borne pas à poursuivre certaines analogies, mais elle considère l'ensemble des propriétés physiques et chimiques. Elle est simple dans son principe, féconde dans ses conséquences' (p. 112). Equally, Meyer's important researches are discussed (his graph plotting the relationship between the atomic weights of the elements and their physical properties is reproduced by Wurtz at the end of the volume), and the section concludes with the judgment that the discoveries of the previous decade form 'un chapitre important auquel MM. Mendéléeff et Lothar Meyer ont eu le talent d'ajouter de beaux développements' (p. 122). However, as M.D. Gordin records, the German translation of *La théorie atomique* included unauthorised additions, which increased the emphasis on the importance of Meyer's work, thus setting the German chemist at odds with both Wurtz and Mendeleev, and re-awakening the dormant dispute over priority between Meyer and Mendeleev (*cf. Scientific Babel: How Science Was Done Before and After Global English* (Chicago and London: 2015), pp. 51-64). The first edition of 1879 was followed by a second in the same year, which is known with catalogues dated March 1879 (for example, the Bodleian Library copy, acquired before 12 November 1879), suggesting that the first edition was published early in 1879 (or even at the end of 1878), and *La théorie atomique* had reached an eighth edition by 1898. This copy was inscribed by Wurtz to his scientific colleague, the Anglo-German chemist Hugo Müller, who had been educated at the universities of Leipzig and Göttingen. In 1853 Müller joined Liebig in Munich as an assistant, and in 1854 he moved to England, to take up the position of private assistant to Warren De la Rue at the De la Rue printing company in London, where he befriended a group of talented chemists, including Friedrich August Kekulé, Peter Griess, Carl Alexander Martius, and William Henry Perkin. Müller enjoyed a successful career at De La Rue, where his scientific abilities and commercial acumen led to a series of promotions, culminating in a directorship of the company. He was also very active in scientific circles, publishing widely; was elected a Fellow of the Royal Society in 1866; appointed Foreign Secretary of the Chemical Society (1869-1885; President 1885-1887); and held the position of President of the Mineralogical and Crystallographic Society of Great Britain from 1901 to 1904. After his death, Müller's widow and daughter donated £1000 to the Chemical Society, to fund both research and the triannual Hugo Müller Lecture, and his widow also gave a number of books from his library, including this, to Bedford College, University of London.



SCIENTIFIC EXPERIMENTS FOR YOUNGSTERS:

A TEMPERANCE PRIMER BY A 'PIONEER IN THE MEDICO-SOCIOLOGICAL STUDY AND EXPOSITION OF THE ALCOHOL PROBLEM'

7. RIDGE, John James. The Temperance Primer. An Elementary Lesson Book, Designed to Teach the Nature and Properties of Alcoholic Liquors, and the Action of Alcohol on the Body. London: Barrett, Sons and Co. for National Temperance League, 1879.

Octavo (163 x 101mm), pp. [i]-viii, [9]-158. 17 wood-engraved illustrations and letterpress chemical formulae in the text, wood-engraved tailpieces. Original green cloth, upper board blocked in black with border with floral cornerpieces, border repeated in blind on lower board, upper board and spine lettered in black, lemon-yellow endpapers. (Extremities lightly rubbed and bumped, mark on lower board.) A very good, clean copy. **f95**

First edition. *The Temperance Primer* is, essentially, a chemistry set in book form, encouraging its young readers to experiment with everyday objects (candles, glasses, straws, etc.), combining the moral lessons of temperance with the excitement of the 'familiar science' and home experiments that permeated much Victorian scientific literature for the young.

The object of its chapters is to teach the chemical composition of air; the oxidation and composition of food and its 'heat-giving' and 'flesh-forming' components; the connections between sugar, malt, yeast, and beer in fermentation; the differences between beer, wine and spirits; the properties of alcohol; the function of digestion in the human body and the influence of alcohol on it; and the effects of alcohol on blood vessels, the heart, the brain, and the nerves. The volume concludes with questions regarding alcohol and longevity, the material cost of drinking, and whether total abstinence or moderation is the best course; '[t]he best possible advice which can be given on this question of drinking Alcohol is – NEVER BEGIN' (p. 131). The terminology used is accurate for the time, referencing oxygen, nitrogen, phosphorus, sulphur, carbon, but appropriately explained for its juvenile audience. Each chapter ends with 'exercises' in the form of exam-like questions, to ensure that the subject matter has been understood, and a glossary of technical terms are given in the end.

The temperance movement in Britain had risen out of the Victorians' concerns about drunkenness as the root of many of the evils that plagued the conurbations, including crime, violence, social unrest and poverty. Britain saw a succession of organisations promoting temperance: the British Association for the Promotion of Temperance was formed in 1835, and was followed by the National Temperance Society in 1842 and the London Temperance League, which 'grew out of a series of special demonstrations held in connection with the Great Exhibition of 1851' (John Turner Rae, *National Temperance: A Jubilee Biography of the National Temperance League Instituted 1856* (London: 1906), p. 17). In 1856 the National Temperance Society and the London Temperance League merged to form the National Temperance League, which opened a temperance hospital in London in 1873 and also pursued an education programme through publications such as this. The spirit of self-improvement found in many temperance organisations encouraged the study and pursuit of temperance as a pastime for its practitioners, resulting in publications including temperance almanacks, readers, song books, and lesson-books, and the *Primer* appears to belong to this tradition. The author, John James Ridge (1847-1908), 'M.D., B.S., B.A., B.Sc. Lond.; University Scholar in Surgery, and Gold Medallist of the University of London; Medical Officer to the London Temperance Hospital' (title) was hailed by an obituarist in the *British Journal of Inebriety* as the 'pioneer in the medico-sociological study and exposition of the Alcohol Problem' (July 1908, p. 59).





8. WALSH, J. Francis. The Anatomy and Functions of the Muscles of the Hand and of the Extensor Tendons of the Thumb. Philadelphia, PA: Charles H. Walsh, 1897.

Octavo (228 x 147mm), pp. [5 (title, imprint, preface, blank, contents)], [1 (blank)], [5]-51, [1 (blank)]. Errata slip tipped in facing title. 10 wood-engraved illustrations in the text. Original brown cloth gilt, upper board and spine lettered in gilt. (Upper board slightly marked, extremities lightly rubbed and bumped.) A very good copy, in the original cloth. Provenance: William Anderson FRCS (1842-1900, autograph presentation inscription on front free endpaper 'To Mr Wm Anderson with compliments of J.F. Walsh', pencilled correction [?by Walsh] on errata slip; ?bequeathed or gifted by Anderson to:) -University of London (early 20th-century armorial bookplate on upper pastedown and small inkstamps on verso of title and final page, later small 'Withdrawn' stamp on upper pastedown).

£150

INSCRIBED TO A DISTINGUISHED SURGEON & PROFESSOR OF ANATOMY AT THE ROYAL ACADEMY

A RARE, BOYLSTON PRIZE-WINNING ANATOMICAL MONOGRAPH

First edition, with an early state of the errata slip. J. Francis Walsh of Camden, NJ (b. 1855) had begun to study medicine in Philadelphia in 1872 with Dr William Williams Keen, the first neurosurgeon in the United States, who had served as attending doctor to both Grover Cleveland and Franklin D. Roosevelt, and was president of the Philadelphia School of Anatomy from 1875 to 1889. Walsh graduated from the University of Pennsylvania in 1876, winning the first prize, and he then served in the hospitals and dispensaries of Philadelphia, until he settled in Camden, New Jersey, in November 1878. For this essay on *The Anatomy and Functions of the Muscles of the Hand* he was awarded the Boylston Prize for 1897 (Department of Anatomy and Physiology), by the Boylston Medical Committee, Boston, MA.

The Anatomy and Functions of the Muscles of the Hand is based on evidence gathered from the dissection of fifty-three hands, and divided into six illustrated chapters, on the extensor tendons of the thumb; the muscles of the thumb; the functions of the abductor, flexor brevis and opponens pollicis; the muscles of the little finger; the interosseous muscles; and the lumbrical muscles. These are followed with a further six parallel chapters analysing and criticising other writers' descriptions of the same muscle groups, which contrast Walsh's findings with those of his intellectual predecessors. The work concludes with a bibliography.

This copy was presented by the author to the distinguished British anatomist and writer on art William Anderson FRCS, who studied at the Lambeth School of Art (where he won a medal for artistic anatomy) and then at St Thomas's Hospital, where he studied surgery under Sir John Simon and Le Gros Clark, won several awards, and became surgical registrar and assistant demonstrator of anatomy. 'His ability to illustrate his teaching of anatomy by drawing was admired by successive generations of students' (ODNB), and in 1873 he was appointed professor of anatomy and surgery at the newly founded Imperial Naval Medical College at Tokyo, returning to St Thomas's as senior lecturer on anatomy in 1880 and attracting 'a stream of Japanese students' to the institution (*loc. cit.*). Anderson was also Examiner in Surgery for both the University of London and the Royal College of Surgeons of England, and in 1891 he was elected Professor of Anatomy at the Royal Academy. In 1896 he published on *The Deformities of the Fingers and Toes*, and it seems likely that Walsh would have sent Anderson this copy of his own book in recognition of that work, and that this copy then entered the University of London's collections from the latter's library, either as a gift or a bequest.

We have identified two states of the errata slip, which is tipped in opposite the title: the first (as here) lists three errata on pp. 12, 31, and 37; however, the last occurs on p. 43 (as stated by a pencil note, probably by Walsh, on the errata slip in this copy this copy) and not p. 37. In the second state of the errata slip, this page number is corrected to '43', and a further erratum on p. 33 is added. **This work is scarce in UK institutions,** and COPAC only lists copies at Cambridge and the Royal College of Surgeons.

To Ner How Anderson, inthe complements of J. I. Hoalch



9. METCHNIKOFF, Elie. Études sur la nature humaine. Essai de philosophie optimiste. Paris: L. Barnéoud & Cie for Masson & Cie, 1903.

Octavo (219 x 132mm), pp. [6 (half-title, verso blank, title, verso blank, dedication, verso blank)], II (preface), 399, [1 (blank)]. 20 illustrations in the text, 5 full-page. (A few light marks.) Contemporary [?]French roanbacked marbled boards, red cloth tips, spine gilt in compartments, gilt leather lettering-piece in one, marbled endpapers, all edges sprinkled red. (Spine slightly faded, extremities a little rubbed and bumped, upper hinge partially cracked). A very good copy in a contemporary binding. **f150**

METCHNIKOFF ON THE PRESERVATION OF LIFE:

'[S'IL] EST IMPOSSIBLE DE VIVRE SANS FOI, CELLE-CI NE POURRA ÊTRE QUE LA FOI DANS LA PUISSANCE DE LA SCIENCE'

First edition. The Russian zoologist and pathologist Metchnikoff (1845-1916), is best known for his pathological work in the second half of his life, following his discovery in 1882 of the phenomenon of phagocytosis at the private laboratory he had established in Messina. On his return to Russia he was appointed head of the newly-established bacteriological institute in Odessa, a position he resigned in 1887 due to difficulties at the institute. Searching for a new home, Metchnikoff travelled to Paris, where his friend and scientific associate Louis Pasteur offered him a position at the newly

founded Institut Pasteur, and the Metchnikoff family moved permanently to Paris in 1888, where they remained. 'Metchnikoff quickly became a revered member of the small circle of the Institute, where friendships and working relationships were close. He began to attract students to his laboratory and set most of them to work answering the various objections to the theory of phagocytosis, elucidating ways in which the white blood cells were attracted to and ingested bacteria, or determining how, in general, the mechanism of immunity worked. Among his many talented students was Bordet, who in 1919 received the Nobel Prize for his work on complement fixation' (DSB IX, p. 334). Metchnikoff's continued researches into immunity culminated in his comprehensive *L'immunité dans les maladies infectieuses* (1901), 'a magnificent review of the entire field of both comparative and human immunology' (*loc. cit.*), and in 1908 Metchnikoff and Paul Ehrlich were awarded the Nobel Prize for their work on immunity.

In Paris Metchnikoff enjoyed some of the happiest years of his life, in a stable and supportive environment that was conducive to a more positive spirit, and the pessimism that had marked his earlier years (which had included two attempts to take his own life), was replaced by a more optimistic philosophical position. 'In a series of books and lectures between 1903 and 1910 Metchnikoff developed his thoughts on the prolongation of life. He stressed proper hygienic and dietary rules. His idea of orthobiosis, or right

living, included careful attention to the flora of the intestinal canal. He believed that intestinal putrefaction was harmful and that the introduction of lactic-acid bacilli, as in yogurt, accounted for the longevity of the Bulgars. He introduced sour milk into his own diet and thought that his health improved' (*op. cit.*, pp. 334-335).

The first of these books was *Études sur la nature humaine*, which is divided into three parts: the first, 'Les désharmonies de la nature humaine' discusses pathological failures in both animals and humans; the second discusses the efforts of philosophical and theological systems to ameliorate the problems of aging and mortality; and the third outlines the defences against illness, aging, and death that science can provide. Metchnikoff – who felt that the philosophical systems of the nineteenth century offered little besides pessimism and that only science could offer a credible solution – concluded his study with the words, '[s]i un idéal capable de réunir les hommes dans une sorte de religion de l'avenir est possible, il ne peut être basé que sur des principes scientifiques. Et s'il est vrai, comme on l'affirme souvent, qu'il est impossible de vivre sans foi, celle-ci ne pourra être que la foi dans la puissance de la science' (p. 392).

This work contains the first use in a book of the word 'gérontologie', which Metchnikoff coined, on p. 386, and the Oxford English Dictionary also cites the English translation of this work as the first use of the word 'gerontology' in English.

Cf. Waller 19978 (2nd ed., Paris: 1904).



GOODRICH'S IMPORTANT POPULAR WORK ON EVOLUTION, WHICH

'FIRST SYNTHESIZES SELECTION AND MENDELIAN GENETICS IN A FULL FASHION'

10. GOODRICH, Edwin Stephen. *The Evolution of Living Organisms.* London and New York: Ballantyne, Hanson & Co. for T.C. & E.C. Jack and Dodge Publishing Co., [1912].

Octavo (163 x 108mm), pp. [2 (half-title, verso blank)], [i]-v (title, verso blank, preface, blank, contents), [1 (blank)], 7-108, [2 (publisher's advertisement)]. Illustrations and letterpress tables in the text [?after Goodrich], 4 full-page. Original green cloth, upper board blocked in black with series design and lettered in black, spine lettered and ruled in black. (Offsetting onto free endpapers, spine slightly faded, extremities slightly rubbed and bumped.) *Provenance*: F.J. Parsons Ltd, Folkestone (early-20th-century bookseller's ticket on upper pastedown). **£75**

First edition. The eminent zoologist Edwin S. Goodrich FRS, FLS, FZS (1868-1946) was educated in France and England, before enrolling in 1888 at the Slade School of Fine Art, University College London,

where he encountered the Jodrell Professor of Zoology, Sir Edwin Ray Lankester. Under the influence of Lankester – who had known Darwin and studied under his distinguished disciples Ernst Haeckel and Anton Dohrn – Goodrich changed direction and embarked on the study of zoology. In 1891 Lankester was appointed to the Linacre Chair of Zoology at Oxford, where Goodrich joined him as his assistant, entering Merton College as a commoner in 1892. 'While much of his time was taken up with his own researches, demonstrating and teaching, Goodrich was also responsible for reorganizing the exhibition cases of the University Museum. This he did with much gusto, but with regard only to the scientific visitor – his attitude being that "one need seek neither to attract the nursery-maid nor to amuse children, nor … satisfy the idle curiosity of the sightseer" [...], an attitude which would now be considered curatorially, if not politically, incorrect' (ODNB). A series of scholarships and fellowships enabled him to travel and study in Naples, India, and Sri Lanka, before he was appointed Aldrichian Demonstrator in Comparative Anatomy in 1898, and elected a fellow of Merton in 1900. A special professorship of comparative embryology was created for Goodrich in 1919, and in 1921 he was appointed to the Linacre Chair, holding the position until his resignation in 1945. 'Goodrich's first paper, an account of a large and rare squid which had been caught off Salcombe, Devon, was published in the *Journal of the Marine Biological Association* in 1892, and his researches in the dozen years which followed [...] led to his being elected FRS in 1905. For more than half a century he worked without intermission on nearly all the groups of the animal kingdom, in every case making contributions to knowledge of the first importance' (ODNB).

The Evolution of Living Organisms, Goodrich's first book, was written for 'The People's Books' series, an ambitious series of popular books for a lay audience written by leading figures in the field (for example, the title on *Women's Suffrage*, also published in 1912, was written by Millicent Garrett Fawcett). Goodrich's book was, nonetheless, written within the best traditions of Victorian popular scientific works, and is an early example of the synthesis of Darwinism and genetics that would characterise the progress of evolutionary debates in the coming decades; as P.J. Bowler commented, it 'presented an overview that included a discussion of the new ideas of heredity [Mendel's ideas had been rediscovered in 1900] and the renewed interest in the selection theory. He made it clear that evolution was as much a record of life's failures and blind alleys as it was of the occasional progressive steps. Goodrich also linked the latest developments in evolutionism to the debates over a nonmaterial life force, throwing his weight behind the mechanists' (*Science for All: The Popularization of Science in Early Twentieth-Century Britain* (Chicago and London: 2009), p. 46).

Michael Ruse judged that Goodrich's book was 'the chief direct contribution that he made to the story of evolution', calling it remarkable for its 'full and comprehensive discussion of Mendelism as known at that point [...]. Through vigorous argument, the causal framework of evolution was shown to be natural selection brought on by a struggle for existence. But, as Goodrich stressed, selection demands a theory of heredity. And Goodrich showed that Mendelism, supposing that there are factors passed on

uncontaminated from generation to generation, according to fixed laws, provides such a theory. The effects of selection are preserved, and not swamped or blended out of existence by sexual reproduction. Moreover, it is a reasonable assumption that every now and then there appear some new variations. [...] Hence, even though these changes would occur entirely without regard to the predicament of their possessors, it is also reasonable to suppose that over time genuine evolution will occur' (*Monad to Man: The Concept of Progress in Evolutionary Biology* (Cambridge, MA and London, 2009), p. 287). Indeed, Ruse characterises *The Evolution of Living Organisms* elsewhere as the book 'that (to the best of my knowledge) first synthesizes selection and Mendelian genetics in a full fashion' (*Defining Darwin: Essays on the History and Philosophy of Evolutionary Biology* (2009), p. 72).

Following this first edition, *The Evolution of Living Organisms* was reprinted in 1914, and then succeeded by a second, 'entirely revised' edition in 1919, before Goodrich enlarged the text into a more comprehensive treatment of the subject, published by the Clarendon Press as *Living Organisms: An Account of their Origin & Evolution* (Oxford: 1924).

'Scientific Works of E.S. Goodrich' in G.S. de Beer, ed., Evolution. Essays on Aspects of Evolutionary Biology Presented to Professor E.S. Goodrich on his Seventieth Birthday (Oxford: 1938), p. [337].



FIG. 6.—Divergent evolution among Placental Mammals in adaptation to various modes of life. Undifferentiated early Mammal from the Eccene, 1 (Condylarthra). Herbivorous forms with defensive horns and weapons: Rhinocerosids, 2 (Rhinoceros); Amblypod, 3 (Tinoceras); Titanothere, 4 (Brontops); Decora, 6 (Giraffe), 7 (Red Deer), 8 (Buffalo); Proboscidea, 5 (Mammoth). S. American Herbivore, Litopterna, 9 (Macrauchenia). Fiesh-earling Carnivora, 11 (Jaguar). Gnawing Rodentia, 15 (Beaver). Insectivorous and herbivorous forms with defensive armour and spines: Edentata, 12 (Armadillo), 14 (Glyptodont), 13 (Scaly Anteater); Insectivora, 17 (Hedgehog). Marine swimming forms: Carnivora, 18 (Seal); Sirenia, 19 (Dugong); Cetacea, 20 (Killer Whale). Climbing arboreal forms: Edentata, 23 (Sloth); Primates, 22 (Orang). Flying forms: Rodentia, 16 (Flying Squirrel); Cheiroptera, 21 (Bat).



11. BEEBE, (Charles) William. The Arcturus Adventure. An Account of the New York Zoological Society's First Oceanographic Expedition. New York and London: The Knickerbocker Press for G.P. Putnam's Sons, 1926.

Octavo (235 x 158mm), pp. xix, [1 (blank)], 439, [1 (blank)]. Title printed in red and black. Colour-printed frontispiece with printed tissue guard, 7 colour-printed plates with printed tissue guards after Isabel Cooper, Don Dickerman, Dwight Franklin, and Helen Tee-Van, and 25 monochrome plates with illustrations, diagrams, maps, etc. after Franklin, Dickerman, Charles Livingston Bull, John Tee-Van, Ernest Schoedsack, *et al.*, all but one printed recto-and-verso. (Some very light marginal browning, a few light marks.) Original green cloth, upper board lettered in gilt and with blind-ruled border, spine lettered in gilt, top edges gilt, others uncut, colour-printed endpapers after Cooper. (Spine a little faded, extremities lightly rubbed and bumped, slight cracking on upper hinge.) A very good copy. *Provenance*: erased pencil presentation inscription 'from Dad' dated Christmas 1926 on front flyleaf – John Leonard Cloudsley-Thompson, Pembroke College, Cambridge, 9 March 1945 (1921-2013, ownership inscription and inkstamp on front flyleaf, further ownership signature and typed paper booklabel on upper pastedown, and notes of catalogue prices from 1973 to 1991 on front flyleaf and upper pastedown).

£50

Twenties

BY THE CO-INVENTOR OF THE BATHYSPHERE

DEEP-SEA OCEANOGRAPHY IN THE GALÁPAGOS ISLANDS & SOUTH PACIFIC ISLANDS

First edition, fourth printing (published in the same year as the first). The American natural historian, oceanographer, traveller and writer Beebe (1877-1962) was born in Brooklyn, grew up in New York and New Jersey, and then studied natural history at Columbia University between 1896 and 1899, leaving without a degree. Following posts as Assistant Curator and then Curator at the New York Zoological Society's Zoological Park, Beebe undertook a series of travels for research, publishing the results in numerous articles and books, often intended for a popular audience: 'Beebe's work and his many publications unquestionably exemplified the work of the Zoological Society for many Americans, particularly young people, from the 1920s to the early 1940s' (*American National Biography*). One of Beebe's greatest contributions was to the area of deep-sea oceanography, particularly using a weighted copper helmet in the Galapágos Islands in 1925, which is described in chapters III, VII, XI, XI, and XII of the present work and depicted in a number of the illustrations. These researches led the development of the bathysphere by Beebe and the American engineer Otis Barton (also an alumnus of Columbia) in 1930, and their 1934 dive to 3,028 feet off Nonsuch Island, Bermuda established a record that would stand until 1949, when Barton himself broke it.



The Arcturus Oceanographic Expedition (the ninth New York Zoological Society expedition, but the first oceanographic one) left Brooklyn on 11 February 1925 and returned to New York on 30 July of that year, having covered some 13,600 miles and visited Norfolk, Bermuda, Panama, Cocos Island and the Galapágos Islands. According to Beebe's preface, '[t]he avowed objects of the Arcturus Expedition were the investigation of the Sargasso Sea and the Humboldt Current. Owing to continual storms the former was in such a disintegrated condition that I soon decided to postpone detailed study until a more favorable time. In the Pacific, to our surprise, we found that there was absolutely no trace of the Humboldt Current about the Galapagos. The inexplicable absence of this great, cold, Antarctic current was more than made up for by the presence of equally unexpected natural conditions. Among the totally unexpected and inestimably valuable phenomena – the high lights of the expedition – were the great volcanic eruption on Albemarle [...]; the albatross rookery on Hood [...]; the remarkable results of hundreds of dives in a copper helmet and bathing suit [...]; the temporary current rip in mid-ocean [...]; and the deep sea work in the submerged Hudson Gorge, only one hundred miles from New York City [...]. Finally, the accomplishment which, scientifically, proved the most valuable of all, was the result of my decision to make a ten-day stay in one spot in mid-ocean [...], where continual dredging vielded very remarkable collections of fish and Crustacea, equivalent to any two months of the less intensive work' (pp. ix-x).

This copy is from the scientific library of the distinguished zoologist and traveller Professor John Cloudsley-Thompson FRES, FLS, FZS, etc., whose undergraduate studies at Cambridge were interrupted by World War II, during which he served as a tank commander in North Africa and Europe. On his return to Cambridge in 1945 (when he acquired this volume), Cloudsley-Thompson completed his degree and then

a doctorate, which was followed by the positions of lecturer in zoology at King's College, London (1950-1960), professor of zoology at the University of Khartoum (1960-1971), and, finally, professor of zoology at Birkbeck College, London (1972-1986), becoming emeritus professor upon his retirement. He was the recipient of numerous prizes and honours, and also the author, co-author, or editor of some fifty books.

Troelstra, Bibliography of Natural History Travel Narratives, p. 60.

EXPERIMENTAL BIOLOGY MONOGRAPHS

12. PINCUS, Gregory Goodwin. The Eggs of Mammals. New York: The Macmillan Company, 1936.

Octavo (216 x 140mm), pp. ix, [1 (blank)], 160, [6 (final blank II.)]. Diagrams, letterpress tables, and half-tone illustrations in the text, 8 full-page. Original green cloth, upper board lettered in gilt with series title 'Experimental Biology Monographs' and with blind-ruled border, spine lettered in gilt. (Extremities a little rubbed and bumped, spine darkened and rubbed with loss of gilt.) *Provenance:* '\$3.75' price inkstamp on front free endpaper with slight offset onto facing pastedown – **Joseph Edwards, Cambridge 1937** (1905-1992, ownership inscription on front free endpaper). **£150**

AN ASSOCIATION COPY OF PINCUS' 'PIONEER WORK' ON FERTILISATION AND REPRODUCTION, WHICH ANTICIPATED HIS WORK ON THE CONTRACEPTIVE PILL

First edition. The American endocrinologist Pincus (1903-1967) is best known today for his critical role in the development of the contraceptive pill. *The Eggs of Mammals*, Pincus' first book, brings together the results of his researches into mammalian reproduction, and forms an important step towards his engagement with contraception: the work documents his success with in vitro fertilisation and embryo transfer with rabbits. Quickly recognised as a 'pioneer work' (*op. cit.*, p. 610), the book

prompted a public debate into the ethical issues raised by the possibility of human in vitro fertilisation. In 1944 Pincus and his friend Hudson Hoagland established the Worcester Foundation for Experimental Biology, where Pincus and his associate M.C. Chang undertook research into synthesised hormones which could inhibit ovulation in animals and thus prevent pregnancy, and '[i]n collaboration with J. Rock and C.R. Garcia, Pincus immediately extended these studies to humans and perfected the oral contraceptive pill' (DSB X, p. 611). As Chang wrote of his colleague, 'Pincus was prominent in the study of mammalian reproductive physiology and endocrinology for more than thirty-five years. Some of his contributions in the early 1930's concerned processes involved in mammalian fertilization and development. With increasing knowledge of steroid hormones in the early 1940's, his attention became increasingly focused on the roles of these substances in general physiology and especially in reproduction. In the early 1950's, when powerful, orally active, synthetic hormonelike compounds were produced, Pincus and his associates seized the opportunity to develop an oral contraceptive. Their success was such that they produced that pharmaceutical rarity, a chemical agent that is virtually 100 percent effective. More important, the work of Pincus and his colleagues has transformed family planning in all the parts of the world in which it is systematically employed' (*loc. cit.*).

Pincus had gained a BS in agriculture from Cornell University in 1924 before graduating from Harvard University – where he studied genetics and physiology under W.E. Castle and W.J. Crozier – with a master's degree and a doctorate in science in 1927. From

1929 to 1930 Pincus undertook research in Europe, studying at Cambridge University under the pioneers of reproductive biology F.H.A. Marshall and Sir John Hammond, and at the Kaiser Wilhelm Institut für Biologie in Berlin under the geneticist R.B. Goldschmidt (for whom see further the following item). On his return to the United States in 1930 Pincus was appointed an instructor in biology at Harvard and in the following year an assistant professor, a position which he held until 1938. In 1937-1938 Pincus was a visiting investigator at Cambridge University; in 1938 he was appointed a visiting professor of experimental zoology at Clark University, Worcester, MA (holding the position until 1945); from 1944 onwards he organised the first annual Laurentian Hormone Conference, continuing to do so until his death; from 1946 to 1950 he held a titular professorship in physiology at Tufts Medical School; and then a titular professorship in biology at Boston University Graduate School from 1950 until his death in 1967.

This copy of *The Eggs of Mammals* was acquired in Cambridge, shortly after publication, by the British scientist Joseph Edwards, who had been educated at Glasgow University (BSc) and the University of Minnesota (MSc). In 1932 Edwards joined Sir John Hammond's team at Cambridge University's newly-established Animal Research Station, which was working on artificial insemination (AI), frequently using rabbits due to budgetary constraints. As one obituarist wrote, '[a]part from his work with AI, Edwards's main interest was in the relatively new concept of progeny testing, whereby a sire was judged by the performance of his offspring rather than by his ancestry, which had been the usual method. He published several papers on the subject, but progress was slow because of the difficulty of assembling enough animals. Edwards was quick to realise that AI was the way to progress as a result of the numbers of progeny generated' (*The Independent*, 28 July 1992). Given the shared research interests, it seems very likely that Edwards would have met Pincus at Cambridge in 1937-1938, through Sir John Hammond, and may even have acquired this copy in 1937 as the result of such an encounter.

Joath Edwards. Cambridge '37.



PHYSIOLOGICAL GENETICS

BY RICHARD GOLDSCHMIDT, Ph.D., M.D., D.Sc. Professor of Zoology, University of California

FIRST EDITION

McGRAW-HILL BOOK COMPANY, Inc. NEW YORK AND LONDON 1938 **13. GOLDSCHMIDT, Richard Benedict.** *Physiological Genetics.* New York and London: The Maple Press Company for McGraw-Hill Book Company, Inc., 1938.

Octavo (227 x 150mm), pp. xi, [1 (blank)], 375, [3 (blank)]. Half-tone illustrations, diagrams, and letterpress tables in the text, some full-page. (A few light marks.) Original green-brown cloth, upper board with blind-ruled border, spine lettered in gilt on dark-brown title-panel, and directly lettered and ruled in gilt, a few quires unopened. (Small mark on upper board, corners slightly rubbed and bumped.) A very good copy.

£75

GOLDSCHMIDT'S 'COMPREHENSIVE REVIEW AND CRITICAL ANALYSIS OF ALL KNOWN IMPORTANT FACTS ON GENIC ACTION' -

HIS FIRST BOOK WRITTEN AT BERKELEY

First edition. 'A zoologist, biologist, and geneticist of exceptional ability, an original thinker, a great traveller, and an indefatigable worker' (DSB), the distinguished German-Jewish scientist Goldschmidt (1878-1958) was educated at the universities of Heidelberg and Munich, continuing his researches and working at the latter until 1913, when he was appointed director of the genetics department of the Kaiser Wilhelm Institut für Biologie in Berlin. A grant enabled Goldschmidt to travel to Japan to pursue his researches there, but World War I broke out during his return journey

via the United States, and the British blockade made his passage from America to Germany impossible. Therefore, he worked at the University of California and Yale University, before the entry of America into hostilities led to his detention as an enemy alien in 1917. When he was eventually repatriated to Germany, Goldschmidt resumed his work at the Kaiser Wilhelm Institut, but the ascent of the Nazi party in the 1930s and the consequent anti-Semitic policies and legislation caused Goldschmidt to emigrate in 1936 to the United States, where he was appointed Professor of Zoology at the University of California, Berkeley. At Berkeley Goldschmidt 'began a new life [...]. He rapidly organized a laboratory and formed a group of students and friends' (*op. cit.*), and *Physiological Genetics* was not only the first book that he published at the university where he would remain for the rest of his life, but also the first book that he wrote in English. The work was prepared while Goldschmidt was waiting for an office and laboratory to be built for him, as his colleague R.M. Eakin recalled: 'I remember that each morning immediately upon arrival he seated himself at a desk with a sheaf of unlined paper and a pen, and he wrote page after page from margin to margin, almost without pausing. His ideas had been formulated the night before or earlier in the morning. After filling ten to twenty pages, he gave them to our departmental secretary [...]. He read her ribbon copy and usually made only a few changes. It was published almost as he penned it' ('Contributions to the Department of Zoology, University of California, Berkeley, California' in L.K. Piternick, ed., *Richard Goldschmidt: Controversial Geneticst and Creative Biologist* (Basel: 1980), p. 67).

As Goldschmidt explains in his preface, *Physiological Genetics* was the third book that he had published on this subject (the other two were *Die quantitative Grundlage von Vererbung und Artbildung* and *Physiologische Theorie der Vererbung*, published in 1920 and 1927 respectively), and the years since the second appeared had 'witnessed an ever-growing interest in the field and a correspondingly increasing amount of work, which, with the introduction of new methods, is expanding more and more. As it is emphasized over and over again by writers of texts and by general speakers that we know next to nothing of the action of the hereditary material in controlling development, it seems advisable to present the entire material available. Not only has this material been assembled and reviewed, but an attempt has been made to organize it into the skeleton of a future science of physiological genetics' (pp. v-vi).

Goldschmidt succeeded in these aims, as Curt Stern wrote in a memoir nearly thirty years later: '*Physiological Genetics* not only furnished another outline of Goldschmidt's dynamic developmental views but was actually a comprehensive review and critical analysis of all known important facts on genic action. As such it served for many years as a basic text in this area of genetics. An important change in the author's viewpoint from earlier years concerned the nature of the gene. He abandoned the idea of alleles being different quantities of the same molecule in favor of looking at a chromosome as a single gigantic macromolecule in which local "steric changes [account for] deviations from Wild type which may be described as mutations, even as point mutations, though no actual Wild-type allelomorph and therefore no gene exists"' (C. Stern, 'Richard Benedict Goldschmidt 1878-1958. A Biographical Memoir' in *Biographical Memoirs of the National Academy of Sciences*, 39 (1967), p. 161).

C. Stern, 'Richard Benedict Goldschmidt', p. 187.

EINSTEIN AND INFELD ON 'THE ETERNAL STRUGGLE OF THE INVENTIVE HUMAN MIND

FOR A FULLER UNDERSTANDING OF THE LAWS GOVERNING PHYSICAL PHENOMENA'

14. EINSTEIN, Albert and Leopold INFELD. The Evolution of Physics. The Growth of Ideas from the Early Concepts to Relativity and Quanta. (The Cambridge Library of Modern Science, gen. ed. C.P. Snow). Cambridge: W. Lewis at the Cambridge University Press, 1938.

Octavo in 16s (188 x 130mm), pp. x, 319, [1 (imprint)]. Pp. [i]-[ii] printed on front free endpaper, as issued. 3 black-and-white plates, numerous diagrams and tables in the text. (Occasional light spotting, heavier on first and last II.) Original blue cloth, upper board with central device blocked in silver, series title lettered in blind, spine lettered in silver and blocked in silver with publisher's device, price-clipped dustwrapper. (Endpapers lightly spotted, extremities slightly rubbed and bumped, spine slightly leant, dustwrapper slightly rubbed and marked, spine darkened, edges with small tears and losses.) A very good copy in a very good dustwrapper. *Provenance*: R.J. Woodrow (early pencilled ownership signature and quotations on upper pastedown).

THE EVOLUTION of PHYSICS

The CAMBRIDGE LIBRARY of MODERN SCIENCE



By ALBERT EINSTEIN & LEOPOLD INFELD First edition, British issue. The Evolution of Physics was published in 1938, shortly after Einstein had left Germany and settled permanently at the Institute for Advanced Study at Princeton, NJ in 1933. Einstein's co-author, the Polish Jew Leopold Infeld (1898-1968), had met Einstein while undertaking research in Berlin in 1920-1921, and between 1933 and 1935 Infeld had worked at Cambridge University with Max Born, developing Born-Infeld Electrodynamics. Infeld returned to Poland in 1935, but the worsening political situation in Europe and Einstein's encouragement convinced him to leave for America, where he joined Einstein at the Institute for Advanced Study in 1936, remaining there until 1938. The Evolution of Physics was written while the two scientists were at the Institute and was intended for a popular audience, as they explain in their preface: '[b]efore you begin reading, you rightly expect some simple questions to be answered. For what purpose has this book been written? Who is the imaginary reader for whom it is meant? [...] We have not written a textbook of physics. Here is no systematic course in elementary physical facts and theories. Our intention was rather to sketch in broad outline the attempts of the human mind to find a connection between the world of ideas and the world of phenomena. We have tried to show the active forces which compel science to invent ideas corresponding to the reality of our world. But our representation had to be simple. Through the maze of facts and concepts we had to choose some highway which seemed to

us most characteristic and significant. Facts and theories not reached by this road had to be omitted. [...] Whilst writing the book we had long discussions as to the characteristics of our idealized reader and worried a good deal about him. We had him making up for a complete lack of any concrete knowledge of physics and mathematics by quite a great number of virtues. We found him interested in physical and philosophical ideas and we were forced to admire the patience with which he struggled through the less interesting and more difficult passages. He realized that in order to understand any page he must have read the preceding ones carefully. He knew that a scientific book, even though popular, must not be read in the same way as a novel. The book is a simple chat between you and us. You may find it boring or interesting, dull or exciting, but our aim will be accomplished if these pages give you some idea of the eternal struggle of the inventive human mind for a fuller understanding of the laws governing physical phenomena' (pp. [v]-vi).

The Evolution of Physics was well received by critics – for example, V.F. Lenzen wrote that '[i]n recent years the discoveries of modern physics have been the theme of many popular accounts. The book under review is a distinguished contribution [...]. In thoroughness of treatment and precision of statement it sets a standard that will be difficult to surpass' (*Isis* 30 (1939), p. 124). It remained in print through the twentieth century and into the twenty-first. The first edition was published simultaneously in England by the Cambridge University Press, in Holland by A.W. Sythoff, and in the United States by Simon and Schuster, Inc..

Cf. Boni, Russ, Laurence 235 (US issue).

KEEPING FIT FOR FLYING

AN ANALYSIS OF IMPORTANT FACTORS INFLUENCING THE HEALTH AND THE EFFICIENCY OF CIVIL AIRMEN

PAN AMERICAN AIRWAYS SYSTEM

15. MCFARLAND, Ross Armstrong. Keeping Fit for Flying. An Analysis of Important Factors Influencing the Health and the Efficiency of Civil Airmen. [New York]: Pan-American Airways, Inc., 1943.

Quarto (277 x 215mm), pp. V (title, imprint, foreword, blank, contents)], [1 (blank)], 325, [1 (blank)]. Mechanically-reproduced typescript. Numerous illustrations, diagrams and tables in the text. (Occasional very light marking.) Original grey-blue wrappers, upper wrapper and spine printed in dark blue. (Lightly marked, indentations on lower cover, extremities lightly rubbed, short splits at spine-ends). A very good copy in the original wrappers. **£150**

BY THE LEADING EXPERT IN THE FIELD: PILOT HEALTH IN 1940S AMERICA: A RARE EARLY GUIDE FOR PAN-AMERICAN AIRWAYS

First edition, privately published. Written by Ross A. McFarland (1901-1976), for the training programme of pilots for Pan-American Airways in 1943, and thus just for internal circulation to Pan-Am pilots, *Keeping Fit for Flying* describes, illustrates, and presents scientific findings on the nature and causes of fatigue in pilots, on the effects of high altitude and lack of oxygen, on the importance of diet and physical exercise in aviation, and on the detrimental effects of alcohol and smoking. It further provides advice on keeping healthy in tropical climates and the use of one's eyes in difficult conditions (i.e., at night and in bright sunlight), and attempts to answer the question 'How Long

Can the Airman [safely] Fly?' – the answer being that, if he is in good health, his working life as a pilot will be extended.

Keeping Fit for Flying presents a wealth of information that seems remarkably prescient for the era in which it was written. Particularly interesting are, for example, the incorporated studies on accidents (e.g. the loss of air cabin pressure), where McFarland proposes that the danger of a lack of oxygen in the cabin 'could easily be overcome by having emergency oxygen masks available' (p. 110). While many of the topics discussed here are relevant to non-air bound humans, too – for instance, a lack of oxygen and extreme environments at high altitudes are significant dangers to mountaineers, and the consequences of alcohol and tobacco consumption would increasingly reach the awareness of a general public in the following decades – the early date, detail, and scientific precision of the results presented here are very striking.

For example, the chapter dedicated to nicotine and smoking (covering 62 pages followed by a six-page bibliography) is introduced with critical thoughts on the role of advertising in the increasing number of smokers and the unreliability of studies on the subject, and then analyses not only the properties and effects on the human physiological system of tobacco, smoke, nicotine, and carbon monoxide, but also the effects of smoking on health, longevity, and chronic illnesses. Particularly notable are the sections on the relation of tobacco to cancer, which presents very strong evidence for a causality between the two. The advice here, as for drinking, is for the aviator to refrain from excessive smoking, since it has an even stronger effect on those who fly than on other persons.

McFarland's engagement with the theme had begun as a young man, when he was a Research Student at Trinity College, Cambridge under Sir Joseph Barcroft and Professor F.C. Bartlett in 1927-1928. At Cambridge he had studied transportation safety using Royal Air Force student pilots, demonstrating how the lack of oxygen on simulated flights could impair behaviour and cause lack of insight and loss of judgment – studies which would lead to further investigations of aviation accidents, fatigue, mental illness, and aging (especially the effects of carbon monoxide on the brain functions of the elderly). He received, among other honours, the Longacre Award of the Aero Medical Association (the first to be awarded), the Exceptional Service Award of the United States Air Force, and the Distinguished Civilian Service Award of the Department of the Army.

The careful and cutting-edge nature of *Keeping Fit for Flying* results from a combination of the latest literature from a variety of related fields with experiments and empirical insights gleaned by the author himself. McFarland, who would become the Daniel and Florence Guggenheim Professor of Aerospace Health and Safety at Harvard, was 'a leader in the development of the new field of human factors engineering, or biotechnology' and 'an international authority in the design of equipment to meet human capabilities', who specialised in experimental psychology and physiology, but also used a variety of other disciplines to investigate environmental stresses (*New York Times* obituary, 9 November 1976). MacFarland had previously published *Studies on High Altitudes in the Andes* (1937), but his focus was primarily transport, especially aviation, and the current volume – which is mostly original material first published here, but also incorporates and updates material from smaller studies McFarland had produced for Pan-Am in the late 1930s and early 1940s – precedes his celebrated post-war publications for engineers that resulted from his work in the fatigue laboratory at Harvard: *Human Factors in Air Transport Design* (1946) and *Human Factors in Air Transportation; Occupational Health and Safety* (1953).

Although WorldCat locates nineteen copies of this privately-published work in United States institutional collections, it does not locate any abroad, and COPAC confirms that there are no copies in UK institutional collections.



16. HUXLEY, Sir Julian Sorrell. On Living in a Revolution. London: T. and A. Constable Ltd for Chatto & Windus, 1944.

Octavo (210 x 136mm), pp. xii, 196. One table and one full-page map in the text. (A few light marks, L3 with short marginal tear.) Original blue cloth, spine lettered and decorated in gilt, dustwrapper, not price-clipped (12s. 6d.), with advertisement for the BBC 'addressed to readers outside Great Britain' on lower flap. (Corners very lightly bumped, dustwrapper lightly spotted and marked, slightly rubbed and chipped at edges, a few short tears.) A very good copy.

'THIS REVOLUTION IS THE FIRST IN WHICH SCIENTIFIC KNOWLEDGE

AND CONSCIOUS PLANNING IS ABLE TO PLAY A PART'

First edition. A typical diverse and broad-ranging collection of fifteen essays by the zoologist, philosopher, and pre-eminent popularizer of science Huxley (1887-1975), whose wife Juliette once mused: 'So many fingers in so many pies [...]. What a pity you haven't got a few more fingers!' (ONDB). The essays collected here comprise 'On Living in a Revolution'; 'Economic Man and Social Man'; 'The War: Two Jobs, Not One'; 'Philosophy in a World at War'; 'War as a Biological

Phenomenon'; 'Darwinism To-day'; 'Thomas Henry Huxley and Julian Huxley: An Imaginary Interview'; 'Dr. Spooner: The Growth of a Legend'; 'Birds And Men on St. Kilda'; 'Animal Pests In War-time'; 'Tennessee Revisited: The Technique of Democratic Planning'; 'Colonies in a Changing World'; 'Reconstruction and Peace'; '"Race" in Europe'; and 'Education as a Social Function'. These essays were first published between 1939 and 1943 in UK and overseas journals, apart from '"Race" in Europe', which was first published in the volume *We Europeans* (1939), and 'Reconstruction and Peace', which was first published as a pseudonymous pamphlet.

The author's preface notes that, '[w]ith two exceptions, all the essays in this volume were written during the course of this war' (p. vii) – '[n]ever, I suppose, has the process of re-thinking been so intense as in these past four years. There has been the re-thinking of old problems, the transvaluation of values; and there has been the re-direction of thought to new fields, the compulsory cross-fertilization of ideas. As a result, we now live in a quite different world. There has been a revolution of thought, both reinforcing and reinforced by the revolution of economic and social fact' (*loc. cit.*). Huxley concludes his prefatory thoughts with the words, '[t]o live in a revolution is a dubious privilege, and to live in this particular revolution is in some respects particularly unpleasant. But it has one compensation. This revolution is the first in which scientific knowledge and conscious planning is able to play a part. History is being made at greater speed than ever before, and if we are willing to make the effort, we who live in this revolution have the privilege of helping history' (p. xii).

On Living in a Revolution was produced using poor-quality, war-time paper stock, and the text is usually browned and the dustwrapper either missing or badly worn; this copy is unusually bright and the dustwrapper has suffered very little damage.

LIVING IN A REVOLUTION

ON

Fifteen Essays by JULIAN HUXLEY

Twenties

17. JONES, (Alfred) Ernest. What is Psychoanalysis? London: Jarrold and Sons Ltd for George Allen & Unwin Ltd, 1949.

Octavo (184 x 124mm), pp. 126, [2 (blank l.)]. (A few light marks.) Original cream cloth, spine lettered in blue, top edges blue, dustwrapper, not price-clipped. (Very slight discoloration on spine, light offsetting on endpapers, dustwrapper slightly darkened on spine, slightly creased at edges, with small mark and short tear on upper panel.) A very good, fresh copy. **£45**

A POPULAR TEXT BY 'THE SINGLE MOST IMPORTANT FIGURE

ERNEST

JONES:

WHAT IS

PSYCHO-

ANALYSIS?

IN THE INSTITUTIONAL DEVELOPMENT OF PSYCHOANALYSIS IN BRITAIN'

First UK revised edition and the definitive text. The pioneering British neurologist and psychoanalyst Ernest Jones (1879-1958) was Freud's principal disciple in Britain (and later his biographer), a member of the 'Secret Committee', the first president of the British Psycho-Analytical Society, and 'the single most important figure in the institutional development of psychoanalysis in Britain, and its main public spokesman' (ODNB). In 1928 Jones published *Psycho-Analysis*, a popular work intended to serve as an introduction to the still new discipline of psychoanalysis for the lay-person, and, some twenty years later, Jones revised and enlarged the

text for publication under the present title of *What is Psychoanalysis*? The author explains in the introductory paragraph of the Addendum (dated 1947): 'Although nearly twenty years have elapsed since this book was first drafted I find on re-reading it little that needs changing. There was of course very much that could have been added to what was after all only a sketch of the elements of psychoanalysis and there is much more now. I must confine myself here to indicating the modern trends and problems of psychoanalytic research into the old contrasts between inborn and environmental factors in the production of human character and personality' (p. 109). The Addendum (which spans pp. 109-121) provides a conspectus of recent work in Britain by Melanie Klein, Joan Riviere, and Donald Winnicott, and in the United States by Karen Horney, and is followed by an enlarged bibliography, which includes works issued after 1928.

What is Psychoanalysis? was first published at New York in 1948 (possibly due to post-war paper shortages in Britain), and then issued at London in this edition. Interestingly, a comparison of the bibliographies in the American and British editions shows some variations: for example, in the British edition's bibliography, amongst other changes, the 1948 edition of Jones' own Papers on Psycho-Analysis replaced the 1938 edition; Melanie Klein's Contributions to Psycho-Analysis is given the date 1948 (it was undated in the American edition, possibly as it was still in press or due to typographical error); the 1949 second edition of Jones' *Essays in Applied Psycho-Analysis* is added to the entry for that title; and the 1949 edition of S. Lorand's Psychoanalysis Today replaces the 1944 American edition. Therefore, this edition contains the definitive text of Jones' work.

THE NATURE of the UNIVERSE



FRED HOYLE

18. HOYLE, Sir Fred. The Nature of the Universe. A Series of Broadcast Lectures. Oxford: A.R. Mowbray & Co. Limited for Basil Blackwell, 1950.

Octavo (186 x 119mm), pp. v, [1 (blank)], 121, [1 (blank)]. Half-tone frontispiece and 5 half-tone plates. (Very light browning and light marginal marking on a few pp. and one plate.) Original red cloth, spine lettered in gilt, dustwrapper, not price-clipped. (Dustwrapper very lightly spotted, lightly rubbed, spine darkened, edges slightly chipped and with short tears.) A very good, crisp copy. **£95**

THE FIRST USE OF THE PHRASE 'BIG BANG' IN A BOOK -

BROADCASTS BY HOYLE, 'THE FIRST TRUE "BBC ASTRONOMER"'

First edition. Sir Fred Hall (1915-2001) was born in Yorkshire and educated at Bingley Grammar School and Emmanuel College, Cambridge, where he read mathematics, graduating BA in 1936 and then MA in physics three years later, winning 'the tripos part two Mayhew prize (1936) and the Smith's prize (1938), while a research student under Paul Dirac (a satisfactory arrangement because Dirac never liked supervising students and Hoyle did not need supervision)' (ODNB). In 1939 Hoyle was awarded a research fellowship at St John's College. Apart from wartime work on radar for the Admiralty (1939-1945), Hoyle remained at Cambridge until 1973, becoming a University

Lecturer in Mathematics in 1945, Plumian Professor of Astronomy and Experimental Philosophy in 1958, and Director of the Institute of Theoretical Astronomy at Cambridge, which he founded, from 1967 to 1972. Among the numerous awards and distinctions conferred upon Hoyle were fellowship of the Royal Society (1957), the presidency of the Royal Astronomical Society (1971-1973), a knighthood (1972), the Gold Medal of the RAS (1968), and the Bruce Medal and Royal Medal of the Royal Society in 1970 and 1974 respectively.

In the late 1940s and 1950s, Hoyle undertook important research into the structure and evolution of the stars, publishing his first book, *Some Recent Researches in Solar Physics* in 1949, and developing the 'steady state theory' of the universe with his friends Hermann Bondi and Thomas Gold. As Sir Patrick Moore stated in the ODNB, 'during the early 1950s [Hoyle] was the world's leading astrophysicist'. Hoyle was first invited to talk on radio by the BBC in 1948, which marked the beginning of his remarkably successful career as a broadcaster and populariser of astronomy – Moore considered Hoyle 'in fact the first true "BBC astronomer"' (*op. cit.*). Further broadcasts followed in 1949, during which Hoyle coined the phrase 'big bang' as a derogatory description of a hypothesis he found unsustainable; the BBC then commissioned a series of five lectures on the universe and cosmology in 1949, which provided Hoyle with a platform to make the case for the steady state theory over the big bang theory.

These five talks 'were incredibly successful and Hoyle became a well-known figure, one of the first media dons' (P.G. Ferreira, The

Perfect Theory: A Century of Geniuses and the Battle over General Relativity (Boston and New York: 2014), p. 92). The talks were published in the present volume (Hoyle's second book), which 'was itself immensely successful' (ODNB), remaining in print throughout the 1950s and the 1960s. In 'Man's Place in the Expanding Universe', the fifth and final lecture, Hoyle puts forward the case for the steady state theory, commenting that '[i]n the older theories [of creation] all the material in the Universe is supposed to have appeared in at one instant of time, the whole creation process taking the form of one big bang' (p. 105). Since Hoyle had only coined the phrase shortly before *The Nature of the Universe* was published, it seems reasonable to assume that this is the first use of the phrase 'big bang' in a book.

Hoyle's broadcasts and this book were an important introduction to astronomy for many of the next generation of astronomers; for example, Ian Morrison, Gresham Professor of Astronomy, wrote in the preface to A *Journey through the Universe* (Cambridge: 2015), '[a]s I write, I have my father's thin, red bound, copy of Fred Hoyle's book *The Nature of the Universe* on the desk beside me. It was this book that inspired me to become an astronomer' (p. xi).

SCIENCE AT THE SUMMIT: THE ASCENT OF EVEREST SIGNED BY MICHAEL WARD,



THE EXPEDITION DOCTOR AND CO-AUTHOR OF APPENDIX VII, 'PHYSIOLOGY AND MEDICINE'

19. HUNT, (Henry Cecil) John, Baron HUNT. *The Ascent of Everest.* London: Hazell, Watson and Viney Ltd for Hodder and Stoughton, 1953.

Octavo (220 x 143mm), pp. xx, 300. Colour-printed photographic frontispiece, 7 colour-printed photographic plates, 48 half-tone plates with 70 photograph illustrations recto-and-verso, 3 full-page maps, full-page view of the mountain with ascent route, and illustrations and diagrams in the text. Original blue publisher's cloth, spine lettered in gilt, top edges blue, dustwrapper with design after W. Heaton Cooper, not price-clipped. (Light offsetting on endpapers, extremities lightly rubbed and bumped, dustwrapper slightly faded on spine and a little creased and chipped on edges). A very good, internally clean copy. **f75**

First edition, signed by Michael Ward on the front free endpaper. 'The story of success after 32 years and 12 expeditions. 1953 was the year of the British. They knew this would be their last chance for the mountain [...]. The British picked as leader Colonel John Hunt, the Himalayan veteran who was a military officer and an expert in logistics. The expedition included some of the finest climbers in Great Britain, as well as George Lowe and Edmund Hillary from New Zealand, and Tenzing Norgay' (*Classics in the Literature of Mountaineering*).

Written by the expedition leader Hunt, this detailed account of the ascent of Everest is illustrated with portraits of the team and photos taken *en route*, including '[t]he photograph of Tenzing standing on the summit, the flags streaming from his ice axe, [which] has become famous, and the exploits of Hillary and Tenzing legendary, entering a lore and mythology of mountaineering. The ultimate mountaineering goal, the summit of the world, had been achieved' (*loc. cit.*).

Scientific and medical preparations – especially the open-circuit oxygen equipment – were essential to the Everest expedition's success. The appendices in this work bring together, among other things, T.D. Bourdillon's illustrated essay on the oxygen equipment, Griffith Pugh and Michael Ward's essay on physiology and medicine, and Griffith Pugh and George Band's contribution on the carefully-calculated diet for the mountaineers – a fine balance between nutrition, changing appetites at high altitude, and pleasure.

This copy has been signed by Michael Ward CBE, FRCS, FRGS (1925-2005), who had been mountaineering since the age of 15, and continued in Cambridge University's mountaineering club (where he met Wilfred Noyce), while reading natural sciences at Peterhouse. Ward was the surgeon and expedition doctor of the 1953 expedition, and, as Jim Perrin wrote, 'the medical linchpin of the successful 1953 ascent of Everest. As well as this, he organised the vital reconnaissance expedition in 1951 which explored the possibility of tackling Everest from the south, rather than the north, starting in Nepal, then a closed country. Ward's discovery of a potential route to the summit from the south happened during his national service with the Royal Army Medical Corps when [...] he unearthed a dusty packet of aerial photographs [...] of this unexplored side of Everest. Its climbable features were immediately apparent to Ward, who was an all-round mountaineer of considerable natural talent. Ward also came across a forgotten 1930s map, compiled from photographs and a photogrammatic survey. Convinced this was the key to the problem of climbing Everest from Nepal, he approached the Joint Himalayan Committee of the Alpine Club and the Royal Geographical Society, faced down scepticism about a route into the Western Cwm through the perilous complexities of the Khumbu icefall, and persuaded committee members to approve the 1951 exploratory expedition. This project, led by Eric Shipton and which included Edmund Hillary, laid the groundwork for the latter's successful ascent two years later. It led to an invitation for Ward to join [...] [the] expedition of 1953' (obituary, *The Guardian*, 27 October 2005).

Following the 1953 expedition, Ward returned to a career in the newly inaugurated NHS, working at London hospitals and specialising in research on the physiological effects of altitude while joining expeditions in Snowdonia, China, and elsewhere. In 1983 he was appointed CBE and awarded the Founder's Medal of the Royal Geographical Society for medical research, exploration and mountaineering in the Himalayas.

Classics in the Literature of Mountaineering 39; Neate H135; NLS, Mountaineering, a703; Perret 2304; Yakushi H470a.



20. BRONOWSKI, Jacob and Rita BRONOWSKI [*née* **COBLENTZ].** A series of 6 Christmas cards, each with a printed poem by Jacob Bronowski and an original gouache illustration by Rita Bronowski, and inscribed 'Best wishes', 'With best wishes from', or 'With warm good wishes from' by Jacob Bronowski, and further signed and dated in his hand ('J Bronowski Xmas 1951 [–1955; –1957]' or 'J&R Bronowski Xmas 1953 [–1954; –1956]').

6 card bifolia (5 landscape and one portrait format) (125 x 165mm), each with illustrations drawn by Rita Bronowski in body-colour and watercolour on the cover, some with pencil underdrawings, one with applied silver star, all signed with initials 'RB', and with autograph inscriptions by Jacob Bronowski facing his printed poems on the inner pages. (Some variable light spotting or browning, card for 1953 with vertical crease affecting image.) Overall in very good condition. *Provenance*: **Gritta Weil** (1924-2009). **£250**

Jacob Bronowski (1908-1974), the mathematician, poet, and humanist, was one of the most famous public intellectuals in the postwar era. He was of Polish extraction, but after living in Germany during World War I his family moved to England in 1920, where Bronowski studied at Jesus College, Cambridge. At Cambridge he achieved a first class degree, then earned a doctorate in 1933 (the same year in which he became a naturalized British subject), and was elected an honorary fellow of Jesus College in 1967. Bronowski's work as a scientist was as varied as it was significant: after pioneering the field of operational research methods for the war effort from 1942 onwards, as 'scientific deputy to the British joint chiefs of staff mission to Japan in 1945 he applied these methods to write a report, *Effects of the Atomic bombs at Hiroshima and Nagasaki*' (ODNB). After the war he 'extended this approach to government research on industrial problems [...] [and] elaborated his research into smokeless fuel. During this time he acted as a consultant to UNESCO (1948) in Paris and as Carnegie visiting professor at the Massachusetts Institute of Technology (1953). Especially significant to his future work in popularizing science, Bronowski began to work as a commentator for the British Broadcasting Corporation. There (particularly in a series called *The Brains Trust*) he displayed remarkable talent for explaining and conveying scientific concepts to a lay audience' (*loc. cit.*).

'THE TWO CULTURES' ILLUSTRATED: JACOB AND RITA BRONOWSKI'S CHRISTMAS CARDS,

WITH ORIGINAL GOUACHE DRAWINGS AND LETTERPRESS POEMS

Besides his work in algebraic geometry, topology, statistics, and mathematical aspects of biology, Bronowski's intellectual interests had already expanded to include philosophy and literature, particularly poetry: 'Bronowski saw art and science, the "two cultures", as "twin expressions of the human imagination" [...]. During his Cambridge years he had sought to understand literature as a form of universal knowledge. Bronowski gradually turned from poetry to science as revelatory of imagination, "a shift of emphasis rather than a shift of position". It was perhaps his wrestling with the betrayal of human values exemplified by the holocaust and the atomic bombing of Japan that caused Bronowski to reverse his earlier views about the value-transcendent quality of imaginative thought' (*loc. cit.*).

This desire to understand and explore the relationships between C.P. Snow's 'two cultures' informed Bronowski's 'first major work, *The Poet's Defence* (1939), in which he wrestled with the relationship between the truth of poetry and that of science. It marked the real beginning of his attempts to "create a philosophy for the twentieth century which [is] ... all of one piece"' (*loc. cit.*). This was followed by *William Blake 1757-1827: A Man without a Mask* (1944), a study of William Blake's poetry. With the encouragement of his friends the poets Laura Riding and Robert Graves, Bronowski also began writing poetry himself. Although he 'published little of his poetry [...] each year his Christmas card to friends and family featured one of his pieces' (*loc. cit.*). These six cards form part of this tradition, with poems relating to the subject of the nativity and other Biblical themes, and, interestingly, also science.

For example, the second stanza of the poem for 1955 tells of the scientific revolution and Newton's optical experiments:

Till Isaac Newton showed the Pope The clockwork in the horoscope And, because each hated each, Split the spectrum like a peach.

The card for 1957 takes Copernicus for its central character:

In sixteen centuries Copernicus, Until the supernova split the sky, Died unregarded with his master-key.

It is particularly interesting to note that these cards date from the later period of Bronowski's life, which was dedicated to developing the theme of the humanistic dimensions of science: 'In his *Science and Human Values* of 1956 (derived from his lectures at Massachusetts Institute of Technology in 1953), Bronowski argued that civilization's failures were associated with an arrogant faith in the panacea of value free science unshaped by its social environment. [...] Contemporaries have identified this work as initiating the two cultures debate, and C. P. Snow himself acknowledges Bronowski's contributions in *The Two Cultures: and a Second Look* (1963)' (*loc. cit.*). An ice age and a rage of heat Taught the prodigious sun deceit. The prophets thundered at eclipse Oracular in racing tips.

Till Isaac Newton showed the Pope The clockwork in the horoscope And, because each hated each, Split the spectrum like a peach.

Now the savage blazing tree Must relight the century, Doubt and passion form a boy To spin the sunbeam like a toy— A cat's cradle of light that hums Gold from golden thumb to thumb.

J. Bronowski

The cover designs of these cards are original gouaches by Bronowski's wife, the sculptor and artist Rita, who was descended from a London orthodox Jewish family, had trained at St Martin School of Art, and worked as a sculptor under the name of Rita Colin. The couple had married in 1941 and had four daughters, among them the celebrated historian and historian of science Lisa Jardine (1944-2015). In her obituary for her mother (*The Guardian*, 22 September 2010), Jardine wrote that, '[s]hortly after they met, Rita Coblentz asked her husband-to-be, Jacob Bronowski, to pose for a life drawing, and offered him a volume of William Blake's poems to pass the time while he sat for her in the nude. Thus began Jacob's (or Bruno's – since everyone, including his children, called him that) lifelong interest in Blake. This story is typical of the way my mother [...] made her own distinctive

contribution to Bruno's stellar career as a public intellectual during their more than 30 years of married life. Rita put aside her own ambitions to support him in every possible way as he rose to become a TV celebrity'.

These cards are not only a rare and personal demonstration of Rita's artistic skills, but also a poignant testament to the couple's creative relationship, her original gouache drawings counterpointing Jacob's poems. They were sent to Gritta Weil, a German refugee from Nazi Germany who was recruited to *The Observer* by David Astor and was dubbed by her colleagues the 'Mother Superior' of the foreign writers' desk between 1945 and 1984.

