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ARCH : BURD

Papers (1917-1980) re the neuroscientific work of the Burden Neurological Institute (est. 1939), and of specific members of staff in the areas of neurology, neurophysiology, electroencephalography etc.

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Other 'players':

Rosa Gladys Burden, d.1939
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(William) Grey Walter, 1910-1977

- B Envelope of notes by Dr Ray Cooper, scientific director of the Burden Institute (1971-1988), accompanying the archive material, and including some correspondence re the publication of *The Burden: Fifty years of clinical and experimental neuroscience at the Burden Neurological Institute / R. Cooper & J. Bird. Bristol; White Tree Books, Redcliffe Press Ltd. 1989*
- C Lever arch file containing miscellaneous archive material. Includes photos of Paul Berger (1933), Prof. F. Golla (1933) and W. Grey Walter, photos of equipment and the Burden laboratory, readouts from equipment etc. [Prefaced by a profile, by Dr Ray Cooper, of the work of the Institute (iii + 37pp.) Apr 2000]
- D Burden Neurological Institute bibliography. 3 boxes of photocopied articles numbered A-361 (i.e. 4 + 361?)

A Main papers

1 Correspondence with Geoffrey Parr

Geoffrey Parr (b. Muswell Hill 1899), ed. Finsbury Tech. Coll. Valve Dept. engineer, Edison-Swan (1926-32); Head of Technical Services, Radio Division, Edison-Swan (1932-40); editor, *Electronic Engineering* (1940-49); Hon. Sec. Television Soc. and Technical Editor at Chapman & Hall.
Source: *Electrical Who's Who 1958-59* (London: Elec. Rev. Pubs. Ltd., 1958).

- GP1 Geoffrey Parr, ts letter 6 Jul 1941. On the lack of vibrators and resistance boxes during the emergency.
- GP2 Geoffrey Parr, ts letter 2x Aug [1941] Describes a visit with George Dawson to the Radcliffe Infirmary and Ediswan's reconstruction of the EEG machinery. Encloses bills arising from the EEG Society and the supply of electronic equipment.
- GP3 Grey Walter, carbon 27 Aug 1942. Endorsing the Edison Swan rebuilding of the C.R.O. equipment at the Radcliffe.
- GP4 Geoffrey Parr, ts letter [Nov 1942]. Inviting GW to a talk at the IEE on the stethocardiophone and suggesting improvements to the automatic recorder devised by Walter and Dawson.
- GP5 Grey Walter, carbon 27 Nov 1942. Describes the difficulties in constructing the analyser, in particular the problems of the toxicity of the calomel electrodes.
- GP6 Geoffrey Parr, ts note 12 Apr 1943. Thanking Golla for hosting a meeting of the EEG Society at the BNI.
- GP7 Grey Walter, carbon 18 Oct 1945. Enclosing form from Sariskow and requesting iron wire (gauges between 18 and 22)
- GP8 Geoffrey Parr, ts letter n.d. [Feb 1946?]. Humorous letter on his attempts to organise the scatter-brained members of the EEG Society.
- GP9 Grey Walter, carbon 31 Dec 1947. Letter to *Electronic Engineering* suggesting a new notation for amplifier frequencies.

- 2 Ediswan list
- 1 W. Grey Walter, carbon 25 Jul 1939. Confirming an order for a four channel amplifier.
- 2 Geoffrey Parr, Edison Swan Co., ts letter 26 Jul 1939. On the arrival of Grass ink writers in Liverpool.
- 3 W. Grey Walter, carbon 27 Jul 1939. Repeat order for power amplifiers to accompany Grass Ink Writers.
- 4 Geoffrey Parr, Edison Swan Co., ts 28 Jul 1939. On the delivery of an amplifier.
- 5 W. Grey Walter, Carbon 31 Jul 1939 to S. R. Snodgrass, John Sealy Hosp., Galveston, Texas. On the relative pricing of Grass and Edison Swan machines
- 6 W. Grey Walter, carbon 31 Jul 1939. Order for four channel power amplifiers to work with Grass writers. 2pp.
- 7 Geoffrey Parr, Edison Swan Co., ts 8 Aug 1939. On with switching mechanisms in prototype ECT apparatus. 2pp.
- 8 W. Grey Walter, carbon 9 Aug 1939. On the difficulties with the ECT switching mechanism and the problems of third party risk.
- 9 W. Grey Walter, carbon 10 Aug 1939. On the production of ECT equipment. Walter underlines the necessity of producing portable equipment instead of bringing patients into a room which might have evil associations.
- 10 W. Grey Walter, carbon 21 Aug 1939. Note to Harvey Flack at BMJ enclosing description of Edison Swan EEG Apparatus.
- 11 W. Grey Walter, carbon 22 Sept 1939. To Geoffrey Parr (at home) discussing the despatch of Edison Swan Amplifiers and recent trials of the ECT equipment. Notes the policy of the Board of Control who intend to install ECT apparatus in all hospitals carrying out shock therapy. 2pp.
- 12 W. Grey Walter, carbon 18 Oct 1939. On his call up to Admiralty Signals and the ongoing work on the ECT apparatus.
- 13 Edison Swan Electric, ts 19 Dec 1939. On the supply of paper rolls for EEG recorders.
- 14 Geoffrey Parr, Edison Swan Co., letter + mimeographed pamphlet, 22 Jun 1940. Note enclosing operating instructions for Ediswan Electro Convulsive Therapy Apparatus.
- 15 W. Grey Walter, carbon 10 Oct 1940. On adaptations to the ECT equipment and the construction of a portable two channel EEG machine for civilian and military use. Check MRC letters. 2pp.
- 16 J.W. Ridgeway, Edison Swan Electric Co., ts 8 Jul 1941. On the supply of SP22 valves.
- 17 K. Townend, Edison Swan Electric Co., ts 22 Jul 1941. Despatch of four SP22 valves, and a list of valve types currently in war-time production. 2pp.

- 17 K. Townend, Edison Swan Electric Co., ts 10 Mar 1942. Request from Berry Wood Hospital, Northampton asking if a commercial salt solution can be used in ECT. Attached confirmation from WGW dated 23 Mar 1942..
- 19 J.W. Ridgeway, Edison Swan Electric Co., ts 23 Mar 1942. Confirming their ongoing interest in the production of electro-medical equipment, and their need to find a replacement for Geoffrey Parr.
- 20 W. Grey Walter, carbon 27 Mar 1942. Reply to item #19.
- 21 J.W. Ridgeway, Edison Swan Electric Co., ts 8 Jan 1943. Arrangements for a meeting with Grey Walter.
- 22 W. Grey Walter, carbon 1 Apr 1943. To K. Townend, ESE, advising him on an order held by Cox Cavendish for ECT supply to Malta. Difficulties of adapting to new supply.
- 23 W. Grey Walter, carbon 20 Apr 1943. To K. Townend, ordering a replacement meter for the ECT apparatus used at Brislington House, Bristol.
- 24 K. Townend, Edison Swan Electric Co., ts 3 May 1943. Returning repaired meter for Brislington House. Mentions Board of Control's hesitation in granting new ECT licences..
- 25 J.. Ridgeway, Edison Swan Electric Co., ts 23 Jul 1943. Re: supply of screws.
- 26 J.W. Ridgeway, Edison Swan Electric Co., ts 6 Aug 1943. Outlining an agreement on intellectual property rights between WGW and Edison Swan. WGW to offer all inventions and ideas to Edison Swan for a retainer fee of £300. Requests the admittance of commercial members to EEG Soc.
- 27 W. Grey Walter, carbon 11 Aug 1943. Reply to item #26. Assenting to Edison Swan conditions and supporting the entry of commercial members to EEG Soc.
- 28 W. Grey Walter, carbon 9 Sept 1943. To C. McCallum, arranging manufacture of a low frequency analyser.
- 29 C.C. McCallum, Edison Swan Electric Co., ts 3 Sept 1943. Reply to #28. Suggesting Government service sections may manufacture low frequency analyser.
- 30 W. Grey Walter, carbon 13 Mar 1943. To K. Townend, ESE, ordering counter sunk bolts and gramophone motors for prototype analyser.
- 31 S. Bulmer, Edison Swan Electric Co., ts 3 Dec 1945. On difficulties with Spencer-Patterson regarding his portable ECT apparatus.
- 32 W. Grey Walter, carbon 11 Dec 1940. To S. Bulmer, ESE, on the design of compact ECT equipment and the superfluousness of Spencer-Patterson's endorsement.
- 33 Norman Ellis, ts 18 Feb 1946. A personal communication explaining the faults and ongoing delays with the analyser equipment at ESE. 2pp.
- 34 Norman Ellis, ms letter 1 Mar 1946. Personal communication WGW on the ongoing difficulties at Edison Swan regarding the production of the prototype EEG analyser. 3pp.

- 35 S. Bulmer, Edison Swan Electric Co., ts 21 Mar 1943. Guaranteeing that the work on the prototype encephalograph has been granted a high priority.
- 36 W. Grey Walter, carbon 6 Apr 1946. Personal communication to Norman Ellis, inviting him to display the new Mervyn EEG and analyser at the May meeting of the EEG Society. Arrangments for the export of an analyser to Sariskow's Moscow Institute.
- 37 W. Grey Walter, carbon 12 Jun 1946. To K. Bulmer ESE, complaining of the long delays in the production of the EEG analysers. Details list of interested customers and suggests that the failure to produce this equipment diminishes his own reputation as a generous scientist. 2pp.
- 38 S. Bulmer, Edison Swan Electric Co., ts 1 Jul 1946. Enclosing a letter from R. Sessions Hodge, enquiring about the delay of the 6 channel EEG machine and frequency analyser.
- 39 R. Sessions Hodge, ts 20 Jun 1946.
- 40 W. Grey Walter, carbon 21 Aug 1946. To Pocock, ESE, on the callibration of the Mervyn EEG machine and problems with faulty valves.
- 41 W. Grey Walter, ts 26 Aug 1946. To S. Bulmer, ESE, on new problems connected with the production of the six channel EEG machine.
- 42 [W. Grey Walter], ts 21 Feb 1947. A list of 16 orders and 37 enquiries for the six channel EEG and wave analyser equipment. 3pp.
- 43 S. Bulmer, Edison Swan Electric Co., ts 28 Apr 1947. On a payment deduction made by Mass. Gen. Hospital
- 44 W. Grey Walter, carbon 29 Apr 1947. To K. Bulmer, ESE, on the spares to be included with orders for the new EEG machine.
- 45 S.N. Pocock, Edison Swan Electric Co., ts 14 May 1947. On choice of paper to be supplied with new EEG equipment. 2pp.
- 46 S.N. Pocock, Edison Swan Electric Co., ts 4 Jul 1947. On difficulties with ink writer in the prototype EEG machine.
- 48 J.W. Ridgeway, Edison Swan Electric Co., ts 10 Mar 1948. Covering note with memorandum of agreement between Grey Walter and ESE. Asking Walter to bring female tortoise to London. 1p. + 2pp.
W. Grey Walter, carbon 27 Apr 1948. Complaining of shoddy workmanship in the latest wave analyser.
- 49 S. N. Pocock, Edison Swan Electric Co., ts 4 May 1948. On the testing of wave analyser no. 2. 3pp.

3 Papers re EEG Club.

EEG1 Geoffrey Parr, ts letter. To Walter reporting on the disorganisation prevalent amongst members of the EEG society.
NOW LISTED AS GP8.

EEG2 Geoffrey Parr, ms note. Introducing the EEG Society's new notepaper.

EEG3 Geoffrey Parr, ts letter 12 Apr 1943. To F. Golla thanking him for allowing the BNI to host a recent meeting of the EEG society and reporting on the success of Walter's new analyser.

EEG4 W. Grey Walter, carbon 18 Oct 1945. To Geoffrey Parr enclosing application form from Professor Sariskov and requesting iron wire.

EEG5 Ts 7 Sept 1946. List of 21 overseas members of the EEG Society

4 Papers re EEG course

- 1 Charles Clayton Breakell, EEG Course Registration Form: 29 Sept 1945. Previous radar training with Royal Navy. Based at Whittingham Hospital.
- 2 Cyril Stansfield Parker, EEG Course Registration Form: 30 Sept 1945. Based at Whittingham County Mental Hospital, Preston.
- 3 Denis White, ms letter, EEG Course Registration Form, Exam Papers: 13 Dec 1947. 1p. Letter asks if he can keep pet dog whilst attending EEG course. 1p. Application. Future work at Queen's University, Ontario.
- 4 Marjorie Jean Walker, EEG Course Registration Form, Exam Papers: 28 Jan 1948. Training to work at Kingston Hospital as recordist on Grass E.E.G. 7pp. Exam answer including short essay on the concept of normality.

5 Correspondence with E.M.S. Gibb

- EG1 E.M.S. Gibb, ms letter + 2 EEG record cards 16 Nov 1943. Letter to Walter encloses 2 records of Jefferson's patients exhibiting theta waves. Offers her help in sourcing plywood.
- EG2 E.M.S. Gibb, ms letter 17 Nov 1943. Enclosing EEG tracings to accompany EEG records included in item 1.
- EG3 W. Grey Walter, carbon 24 Nov 1943. Thanking Gibb for her EEG records. Walter plans to incorporate them in a large scale statistical treatment of the correlation between theta rhythms and tumour.
- EG4 W. Grey Walter, carbon 14 Feb 1944. Letter to Gibb on the wage levels of EEG workers.

6 Papers currently held by Dr Ray Cooper

1 Anon photo, 1939. Grey Walter and 3 channel EEG machine.

2 Photo, c.1939. 3 channel oscillograph.

3 Printed card, 12 May 1939. Invitation from Mrs R.G. Burden to the opening of the Burden Neurological Institute.

4 Photo, 1943. Grey Walter and Vivian Dovey.

5 Photo, c.1964. Grey Walter and 16 channel EEG machine with barrier grid storage tubes for averaging evoked potentials.

6 Brian Brake, Magnum Photos, photo, c.1953. Grey and Vivian Walter (née Dovey) in the BNI operating theatre with toposcope.

7 John Pratt, Keystone Press Agency photo, c.1952. Janet Shipton (née Atlee), with 6 channel EEG machine plus frequency analyser.

8 Charles H. Hewitt, Picture Post photo, c.1958. Stroboscopic picture of male head with EEG electrodes.

9 Meljay Photographers, New York photo, c.1953. Grey Walter with Mechanical Tortoise.

10 Desmond Tripp, Bristol photo, 1955. Janet Shipton (née Atlee) with 6 channel EEG pen writer plus 22 channel toposcope with camera.

11 Hans Wild, photo, c.1955. Janet Shipton with 6 channel EEG plus stroboscope.

12 Brian Brake, Magnum Photos photo, 1956. Grey and Vivian Walter looking at toposcope. Cut-out brain in background.

13 Anon photo, 1958. Participants at the Moscow Colloquium on the EEG of Higher Nervous Activity. Participants listed on verso.

14 Photo, 1939. Grey Walter working at lathe. Herbert Pask at brace and bit with unidentified guest.

15 Photo, c.1952. I.R.M.A. - Innate Release of Mechanism Analogue model constructed by Grey Walter.

16 Photos on display card, 3 Oct 1956. Top photo: Spiral scan 22 channel toposcope rotating at 3 revolutions per second, showing alpha rhythm at 9 hz, 3 petals of Harold Shipton; bottom photo: 6 channel EEG machine and pen writer.

17 Photo, c.1939. Rosa Gladys Burden.

18 Desmond Tripp, Bristol photo, c.1954. Grey Walter 'Tortoise', (M. Speculatrix), negotiating obstacle on path to light source.

19 Photo, 1939. Burden Neurological Institute.

20 Photo, c.1939. Burden Neurological Staff. F.L. Golla seated with dog;

standing from second on left: Leslie D. MacLeod, Greta Reiss, Grey Walter, Max Reiss, Arthur Tingey, [?], [?], Herbert Pask.

- 21 Photocopy, 1941. Neurosurgical register for EMS at BNI. First five patients, 1939-40, patient 20 first U.K. leucotomy performed by F.W. Willway, 15 Feb 1941
- 22 Photo, 1957. Burden Staff Party. From left: second Janet Shipton, fifth Harold Shipton; front row centre standing, F.L. Golla, centre sitting Grey Walter, right of Walter standing, Harry Crow. Ray Cooper standing back row extreme right.
- 23 Photo, 1964. Grey Walter sitting with Ray Cooper by 16 channel EEG machine.
- 24 Photo, 1959. First patient to be treated by multifocal leucotomy using chronically-indwelling electrodes. Picture taken after first coagulation. Also in picture Ray Cooper and Grey Walter, with 8 channel EEG machine. Extreme right, secretary taking shorthand notes of reactions. Technique continued from 1959 -1985. Photograph badly torn.
- 25 [New York University] photo, 30 Sept 1972. Delegates at Manfred Sakel Institute. Back row left to right: Friedman, Jose Delgado, Maurice Dangier, Paleoetta [?], Ray Cooper. Front row left to right: Sam Bogash, Natasha Bechtereva, Grey Walter, Mrs Gimbal, unknown.
- 26 Ray Cooper photo, c.1956. Staff of Burden Neurological Institute. Front row from left to right: Alisdair Mundy-Castle, [?], [?], Harold Shipton, Grey Walter. Second row fourth from left: John Shaw.
- 27 Photo, 1973. Meeting on Psychosurgery, Sydney, Australia. From left to right: Frank Eeven (Boston), John Sidney Smith, Ray Cooper (Bristol), Harry Crow Bristol).
- 28 Photo, 1975. Retirement party of Grey Walter. Left to right: Ray Cooper, presenting copy of selected works of Grey Walter, with comments by eminent colleagues; Cheyne McCallum; Grey Walter.
- 29 Photo, 1951. Display of Walter mechanical tortoise at Festival of Britain.
- 30 Photo, c.1961. Patient with intracerebral electrodes in thalamus for treatment of torticollis.
- 31 W. Grey Walter, ts 1966. 'Traps, Tricks and Triumphs in EEG, 1936-66, The Second Geoffrey Parr Memorial Lecture, 8 Oct 1966.' Walter describes his early collaboration with Geoffrey Parr at Maida Vale Hospital; the Lewes Gaol Case, 1938; experiences in World War II; the discovery of delta waves; the use of stroboscopes in epilepsy research; the role of amateurs in scientific research; the physiological effects of the experimenter/subject relationship; the discovery of contingent negative variation (CNV - the problems of the statistical approach; possible applications of the CNV). 17pp + i.
- 32 W. Grey Walter, ts c.1960. 'Accomplishments of an Artefact'. Three short talks accompanied by fourteen slides, illustrating the learning process in *M. Speculatrix*; *M. Docilis* and a human subject connected to an EEG monitor. 3pp.
- 33 W. Grey Walter, ts 1964. 'Frontal lobe function in sensory processing in

man' [a talk prepared for the Lord Adrian Celebration Meeting, Mar 1964]. A study of non-specific responses to sensory stimulation revealed through chronically implanted electrodes. Two photos attached showing EEG recordings of contingent negative variation. 2pp + 2 photographs.

- 34 W. Grey Walter, ts 1938. A confidential report prepared by Walter for the Rockefeller Foundation detailing his first three years research (1935-1938) at the Central Pathological Laboratory, London. Describes the construction of the EEG machine; research on the inhibition of the alpha rhythm through visual stimulation; the discovery of delta waves and the localisation of cerebral tumours; the correlation of delta waves and epilepsy; EEG readings of patients treated with Cardiazol and the use of the EEG as a diagnostic technology in the neurosurgical treatment of epilepsy. Describes work of L.C. Cook and Wylie McCissock. 19pp. incl. bibliog.
- 35 [W. Grey Walter], ts c.1939. 'The Ediswan Electroencephalograph'. Documentation produced by Ediswan in co-operation with Grey Walter, detailing the function and potential uses of the EEG apparatus. Includes two photographs of the apparatus; six figures on the location of electrodes; a bibliography, and an appendix entitled: 'Specification for amplifying equipment for electroencephalograph.' 12pp.
- 36 W. Grey Walter, ts 1966. 'Intracerebral Bioelectric and Metabolic Signs of Mental Activity' [paper presented at Leningrad Symposium on the Physiology Of Deep Structures of the Human Brain, 26-28 Jul, 1966]. A description of the therapeutic work carried out at the Burden Neurological Institute using chronically indwelling intra-cerebral electrodes. 5pp.
- 37 W. Grey Walter, ts 1932. 'The Effect of Fatigue on End Plate Delay'. [Draft of a paper published in the J Physiol. 76 (Sept, 1932): 116-126]. 11pp. incl bibliog.
- 38 W. Grey Walter, holograph c. 1970. 'The Genesis of Frenchay'. Hand-written reminiscences of Walter's work with the U.S. Army Medical Corps at Frenchay Hospital. Describes the difficulty of electroencephalography on head wounded soldiers fitted with tantalum plates. 3pp.
- 39 W. Grey Walter, off-print 1976. 'The Application of Evoked Response and Slow Potential Studies to Clinical Problems', repr. [Bulg. Acad. Sci.], Structure and Functions of the Brain 1 (1976): 145-48. 4pp.
- 40 Ts 1945. Memorandum regarding the cost of 4 channel electro-encephalograph, designed and built at the Burden Neurological Institute, Jun, 1945. 2pp.
- 41 Various, ts + tables and hand-written notes, c.1968. Notes on a joint research project between the Shackleton Therapeutic Unit and the Burden Neurological Institute, on the CNV ratings of six disturbed patients from Brentry Hospital. 9pp.
- 42 Ts 1960. Chronological list of the Burden Neurological Institute's notable achievements. 1p.
- 43 [The Burden Trust], legal deed [photocopy] 21 Dec 1917. Deed of conveyance of Stoke Park Manor and grounds from the Duke and Duchess of Beaufort to Harold Nelson and Katherine Mary Burden. 18pp. including copy of original deeds.
- 44 National Institutions for Persons Requiring Care and Control, legal deed

- [Photocopy] 10 Sept 1930. Appointment of Rosa Gladys Burden as Warden of the NIPRCC. 1p.
- 45 NIPRC, ts [photocopy] 25 Oct 1932. Loose copy of final page of NIPRCC Minutes on the purchase of land from Great Stoke Park Estates Ltd
- 46 NIPRCC, ts [photocopy] 9 Mar 1933. Two loose pages from the NIPRCC Minutes on the purchase of Heath House and the establishment of a research fund at Stoke Park Colony under the directorship of R.J. Berry.
- 47 Rosa Gladys Burden, ts report 27 Jun 1935. Warden's Annual Report to the Trustees of the National Institutions for Persons Requiring Care and Control. 2pp.
- 48 NIPRCC, ts [photocopy] 14 May 1936. Memorandum on the provision of a pension for Mr William Parks, head gardener at Whittington Hall. 2pp.
- 49 NIPRCC, ts [photocopy] 24 Aug 1936. Memorandum on the acceptance of a bid from James Carmichael (Contractors) for the erection of a medical research building. 1p.
- 50 NIPRCC, ts 1936. Minutes of the Meeting of the Trustees of the NIPRCC on 5 October 1936. The Trustees approval of a scheme to found a Mental Research Clinic at Stoke Park Colony is noted.
- 51a Rosa Gladys Burden, ts 17 Aug 1937. Warden's report on Stoke Park Colony for the year ended 31 Mar 1937. Contains a progress report on the building of the Medical Research Clinic at Stoke Park Colony. 2pp
- 52a Rosa Gladys Burden, ts 10 Jun 1936. Warden's report to the Trustees of the NIPRCC. [Item attached to 51a.] 3pp.
- 51b NIPRCC, ts 8 Sept 1938. Minutes of the meeting of the Trustees of the NIPRCC. Contains proposals for the financing of the Burden Neurological Clinic. [This item attached to 52a.] 2pp.
- 52b Rosa Gladys Burden, ts 1938/9. Leaf from the Warden's report to the NIPRCC, noting Sir Laurence Brock's suggestion that F.L. Golla should be appointed director of the Burden Neurological Clinic. 1p.
- 53 NIPRCC, ts 14 Nov 1939. Minutes of the meeting of the Trustees of the NIPRCC. Notes the appointment of Max Reiss. 1p.
- 54 Albert Mitchell, holograph [photocopy] 24 Apr 1938. Letter to an unnamed member of Bristol Univ. Medical Faculty. 1p.
- 55 Albert Mitchell, ts letter [photocopy] 30 Jun 1938. To Dr H.H. Carleton, Clifton, Bristol. 1p.
- 56 Hugh H. Carleton, ts letter [photocopy] 2 Jul 1938. To Albert Mitchell. 1p.
- 57 Thomas Loveday, ts letter [photocopy] 1938. To R.G. Burden on the foundation of the Burden Neurological Clinic. 1p.
- 58 Albert Mitchell, ts letter [photocopy] 7 Jul 1938. To Thomas Loveday on the Burden Neurological Clinic. 2pp.
- 59 Rosa Gladys Burden, ts letter [photocopy] 7 Jul 1938. To Thomas Loveday. 1p.
- 60 Albert Mitchell, legal deed 30 Nov 1938. Memorandum constituting the

- Committee of the Burden Neurological Clinic. 3pp.
- 61 Albert Mitchell, legal deed 1938. Two copies of item #61. 6pp.
- 62 NIPRCC, legal deed [photocopy] 16 Dec 1938. Agreement re services between the NIPRCC and the Committee of the Burden Neurological Clinic. 2 copies. 6pp.
- 63 NIPRCC, legal deed [photocopy] 16 Dec 1938. Instrument of Demise between the Trustees of the NIPRCC and the Committee of the Burden Neurological Clinic. 5pp.
- 64 NIPRCC, legal deed [photocopy] 1938. Copy of item #64.
- 65 Rosa Gladys Burden, legal deed [photocopy] 1938. Guarantee and covenant between R.G. Burden and the Committee of the Burden Neurological Clinic. 3pp.
- 66 Ts [photocopy] May 1939. Warden's report to the Trustees of the NIPRCC for year ended 31 Mar 1939. 5pp.
- 67 NIPRCC, legal deed [photocopy] 1940. Instruction to counsel on the Trust Deeds and Governors of the Incorporation. Includes notes on the appointment of Lt.Col. E.C. Brown as Warden after death of R.G. Burden. 5pp.
- 68 [Rosa Gladys Burden], legal deed [photocopy] 23 Jan 1939. Will, and codicils (1 Aug & 14 Sept) of Mrs R.G. Burden, incl. map of Stoke Park Colony. 12pp.
- 69 NIPRCC, ts [photocopy] 30 Aug 1940. Minutes of the meeting of the Trustees of the NIPRCC. 3pp.
- 70 [Burden Neurological Institute], legal deed [photocopy] 1 Oct 1948. Agreement between the BNI and Dr Effie Lillian Hutton on pension policy. 4pp.
- 71 NIPRCC, legal deed [photocopy] 21 Jun 1955. Constitution of the Committee of Management of the Burden Neurological Institute. 3pp.
- 72 NIPRCC, legal deed [photocopy] 1955. Loose copy of the final one and a half pages of item #72.
- 73 NIPRCC, legal deed [photocopy] 1955. Copy of item #72.
74. Trustees of the Burden Trust, legal deed [photocopy] 3 Feb 1968. Agreement for the sale of The Burden Neurological Institute land and equipment to the Ministry for Health. Includes map of the Burden Neurological Institute and Stoke Park Colony. 4pp.
- 75 [Burden Neurological Institute], legal deed [photocopy] 22 Aug 1955. Agreement with Arthur Guinness Son & Co. (Park Royal) to found the Guinness-Burden Research Unit for work on the therapeutic effects of alcohol on the human system. 2 copies, both 5pp.
- 76 Hugh H. Carleton, ts 2 May 1938. Proposals for the foundation of a neurosurgical clinic at Stoke Park Colony with covering letter. The outline includes a system for local authority funding and a set of costings provided by Prof. Hugh Cairns. 4pp.
- 77 Albert Mitchell, ts letter 13 May 1938. To Hugh H. Carleton in response to item #77. 2pp.

- 78 Hugh H. Carleton & Albert Mitchell, ts 1938. Correspondence surrounding the proposals for the Burden Neurological Clinic and its relationship to the Univ. of Bristol. Dated between 27 May and 2 July 1938. 11pp.
- 79 Ts, 1938/9 [?] Description of Rosa Gladys Burden's work with Stoke Park Colony; the Burden Mental Research Trust and the Burden Neurological Institute. 4pp.
- 80 Ts 1938/9[?] Minute on the appointment of the Committee of the Burden Neurological Institute. 1p.
- 81 Ts 13 May 1939. Outline of proceedings at the formal inauguration of the Burden Neurological Clinic. 1p.
- 82 Ts 1939. Description of the work of the NIPRCC and the foundation of the Burden Neurological Institute. 2pp.
- 83 [Burden Neurological Institute], ts 1950. Staff and equipment lists of the Burden Neurological Institute. 3pp.
- 84 [Burden Neurological institute], ts 1954. Copy of item #84 with hand-written amendments. 3pp.
- 85 W. Grey Walter, ts letter 7 Dec 1942. To Surg.Lt.Cdr. Mallinson, on the repair of faulty ECT equipment. 1p.
- 86 W. Grey Walter, ts 5 Mar 1948. Memorandum on 'The Grading and Remuneration of Technical Workers in Electro-physiological Laboratories.' 1p.
- 87 C.S. Sherrington, holograph letter [photocopy] 9 Mar 1923. Recommending F.L. Golla for the post of Pathologist to the London County Asylums. 1p.
- 88 Frederick Lucien Golla, ts report [photocopy] 1940 [?] On the temporary housing of the Clifton Downs Clinic (renamed the Bristol Clinic) within the Burden Institute. Contains photocopy of a leaflet detailing the services offered by the Bristol Clinic. 3pp.
- 89 Geoffrey Jefferson, ts letter [photocopy] 1946. To F.L. Golla, expressing his appreciation of the Burden Institute's work during the recent war and informing him of the proposed move of EMS Neurosurgical unit to Frenchay Hospital. 1p.
- 90 Alan Elphick, ts letter 1980. Personal reminiscences of Don Barron and Grey Walter. 1p
- 91 F.J. Henald, Medical Research Council, ts letter 28 Nov 1940. To Grey Walter offering a grant of £100 for a portable electro-encephalograph. 1p.
- 92 W. Grey Walter, ts 16 Aug 1941. Progress report to the Medical Research Council on a beat frequency oscillator, resistance capacitance bridge, three channel ink writing oscillograph and a portable EEG machine, brought with MRC funds. 2pp.
- 93 Albert M. Grass, ts letters 21 Jan, 20 Feb & 16 Aug 1939. To Grey Walter on the order and installation of a four channel ink-writing oscillograph. Each 1p.
- 94 W. Grey Walter, ts letter 28 Aug 1939. To Albert M. Grass on the installation of the Grass Ink Writer.

- 95 Clementine S. Churchill, ts letter 23 Oct 1945. To Grey Walter on the purchase of EEG apparatus for Prof. Sariskov's Brain Institute, Moscow. 1p.
- 96 W. Grey Walter, ts letter 24 Oct 1945. To Clementine Churchill on the gift of EEG apparatus to the Brain Institute, Moscow. 2pp.
- 97 Mabel Johnson & W. Grey Walter, 5 ts letters 30 Oct-14 Nov 1945. Correspondence surrounding the purchase and export of EEG apparatus from Grey Walter by the Aid to Russia Committee of the Red Cross. Each 1p.
- 98 S. Sarkisov and W. Grey Walter, 3 ts letters 23 & 29 Apr 1946. Correspondence on the Bernstein method and brain research in Russia. Each 1p.
- 99 Mabel Johnson & W. Grey Walter, ts letters 6 & 8 May 1947. Correspondence on the refusal of the Russian authorities to allow a technician to accompany the export of EEG apparatus to Russia.
- 100 W. Grey Walter, ts letter 22 Feb 1945. To Mullard Wireless Co. returning demagnetised magnets. 1p.
- 101 Denis Hill, 5 ts letters 1-28 Jun 1943. On the commissioning and calibration of a two-channel EEG machine for Sutton EMS Hospital. Each 1p.
- 102 W. Grey Walter, ts letter 2 Jul 1943. On the production and calibration of EEG apparatus for Sutton EMS Hospital. 1p.
- 103 Denis Hill, 4 ts letters 30 Aug-16 Nov 1943. To Grey Walter on the production and calibration of EEG apparatus. Each 1p.
- 104 Denis Hill & W. Grey Walter, 4 ts letters 23 Dec 1943-18 Jan 1944. An exchange re Silverman's work and the correlation of theta waves and psychopathic personality. Each 1p.
- 105 Denis Hill, ts letter 8 Jul 1944. On bomb damage to Sutton EMS Hospital. 1p.
- 106 Denis Hill, ts letters 10 May & 27 Jul 1945. To Grey Walter on the publication arrangements for Electro-encephalography (O.U.P., 1945). Both 1p.
- 107 W. Grey Walter, ts letter 1945. To Dennis Hill on the publication of Electro-encephalography. 1p.
- 108 Press Cutting 10 Apr 1947. 'Truth Machine' in Evening Standard.
- 109 Press Cutting 23 Sept 1947. 'Aid from Rockefeller Foundation: £12,500 Bristol Research Grant' in Bristol Evening Post.
- 110 Frank George, press cutting [photocopy] 1956. 'Robots on the March: Dr Frank George, mathematician and psychologist previews the new age that faces mankind. Within ten years we could leave most of our work to machines.' On cybernetics and the Walter Mechanical Tortoises. [Un sourced - John Bull?]. 3pp.
- 111 Press cutting. 'Gone Begging'. On W. Grey Walter and the shortage of nuts and bolts used in the construction of EEG apparatus. [Un sourced]
- 112 Robert K. Plumb, press cutting 11 Jun 1957. 'Brain Waves get New Yard-

stick' || Weiner Says Use of Harmonic Analysis Equipment Could Provide Accurate Index || Aid to Medicine Seen || Finer Measurements of Skin Changes and Heartbeats Forecast for Physicians' in New York Times.

- 113 Press cutting c.1958. 'Electronic Patterns of the Brain || Atlee's daughter has her brain waves measured to help neurologist prove they mirror personality' [On the use of 'Topsy' and 'Annie' for EEG analysis.] 'The Love Machine' tests compatibility' [On alpha rhythms and personality types]. [Un sourced - poss. Life]
- 114 Press cutting 13 Aug 1968. 'Muere El Psicoanalisis?' [On Walter's work with chronically indwelling cerebral electrodes and cybernetics] in Panorama.
- 115 Alan Burns, press cutting 12 Dec 1971. 'What A Sexy Brainwave' in Sunday Mirror.
- 116 Magazine, Jun 1972. 'Careers Could Ride on Brain Waves: Scientists are measuring personality traits through a technique which someday may be applied to hirings, firings, promotions and demotions' in Nations Business.
- 117 Johnathan Shorney, press cutting 28 Oct 1972. 'The Gazette Photo Review: Burden Research Institute' in The Gazette [Bristol].
- 118 Peter Rickwood, press cutting 25 Jul 1973. 'Offenders could face brain wave tests' in [Bristol] Evening Post. 2 copies
- 119 Mary Wright, press cutting 25 Jul 1973. 'The "Guinea Pig" Girl' || This is a revolution, say brain scientists [On computerised methods of EEG analysis] in Western Daily Press. 2 copies
- 119a Press cutting, 13 Aug 1973, 'Top brains in talks - on brain medicine' in Evening Post
- 120 Maurice Weaver, press cutting 1977 [?]. 'I nod off watching radar'. [On the Burden Institute EEG research into boredom and fatigue] in Daily Telegraph.
- 121 Martin Wainwright, press cutting 20 Jan 1977. 'Wired up to break the boredom barrier' [On the Burden Institute EEG research into boredom and fatigue] in Evening Standard
- 122 John Hemsley, press cutting 3 Feb 1977. 'It's all so boring ... and it could save lives' [On the Burden Institute EEG research into boredom and fatigue] in Slough Evening Mail.
- 123 Press cutting c.1977. 'Proefkonijn'. Dutch magazine cutting on the work of Colin MacEachern and the Burden Institute research into fatigue and boredom in Panorama no.6-64.
- 124. Evening Post, Bristol, photo 1958. Burden staff at F.L. Golla's 80th birthday. Front row fourth from left: Grey Walter, F.L. Golla, Mrs Golla, [?], [?], Alasdair Mundy-Castle, Harold Shipton. Second row fourth from left: Matron Wardley, R. Sessions-Hodge.

7 Papers and reprints

- 1 W. Grey Walter, ts Mar 1937 'The Electro-Encephalograph in Cases of Cerebral Tumour' Proc R Soc Medicine
- 2 W. Grey Walter, reprint + carbon + letter + corrected proof 1940 'Electro-encephalography in the Diagnosis of Cerebral Tumour and Abscess', Practica-oto-rhino-laryngologica. Includes 10 line summary and 1 page of corrections submitted by Walter.
- 3 V. Dovey & W. Grey Walter, report + carbons + case summary Feb/Mar 1945 'Location of Cerebral Abscess under Tantalum Plate'. Reports on the EEG testing of a brain injured G.I. who had tantulum plate
- 4 W. Grey Walter + A.E. Ritchie, reprint + cover letter Jun 1945 'Electronic Stimulators: For Medical and Physiological Purposes' Electronic Engineering (Jul 1945), pp.585-88, 608. Includes cover letter from E.H. Gibb dated 22/6/45
- 5 W. Grey Walter + Alan A. Brooks, reprint + cover letter Jul 1947 'Portable Two Channel Amplifier and Ink Recorder', Electronic Engineering (Jul 1947), pp. 221-6.

8 Correspondence with John Walton

- W1 W. Grey Walter, carbon letter 20 Jan 1943. To John Walton enclosing draft plans of the Frequency Analyser.
- W2 John Walton, ts letter 25 Jan 1943. To Grey Walter clarifying his patent claim for the EEG wave integrator.
- W3 W. Grey Walter, carbon letter 2 Feb 1943. To John Walton answering questions about the relation of scanning mechanisms to storage registers in the proposed wave integrator.
- W4 W. Grey Walter, carbon letter 3 Feb 1943. To John Walter suggesting an alternative summation method for the new analyser.
- W5 John Walton, ts letter 7 Feb 1942(3). To Grey Walter enclosing provisional patent specification for a new Frequency Analyser.
- W6 John Walton, ts letter 11 Feb 1943. To GW reporting the filing of his patent and discussing Hickman's work in the US.
- W7 W. Grey Walter, carbon letter 16 Feb 1943. To John Walton acknowledging receipt of patent specification.
- W8 W. Grey Walter, carbon letter 20 Feb 1943. To John Walton enclosing plans for Frequency Analyser.
- W9 W. Grey Walter, carbon 19 Mar 1943. To John Walton informing him of provisional acceptance by Patent office.
- W10 John Walton, ms letter 23 Mar 1943. To Grey Walter discussing Hughes and Marconi as possible manufacturers of the frequency analyser.
- W11 W. Grey Walter, carbon letter 1 Apr 1943. To John Walton giving his poor opinion of all the possible manufacturers of the analyser
- W12 John Walton, ms letter 18 Apr 1943. To Grey Walter suggesting a series of calibration experiments to test the accuracy of the integrator.
- W13 W. Grey Walter, carbon letter 29 Apr. To John Walton agreeing to tests suggested in W12.
- W14 W. Grey Walter, carbon letter 21 Jun 1943. To John Walton enclosing a two page document (of 16 Jun 1943): Improvements in or relating to Wave-Form analysing apparatus. 1p +2pp.

9 Correspondence with E.D. Adrian

On Adrian (1889-1977), see A.L. Hodgkin in Biog Mem Fellows R Soc 25 (1979); DNB (1971-80): 7-9.

- 1 W. Grey Walter, xerox copy 28 Jun 1939. Offering to resign from an unnamed committee
- 2 W. Grey Walter, xerox copy 11 Jun 1942. Congratulating Adrian on his birthday honours.
- 3 E.D. Adrian, autograph letter 15 Jun 1942. On his birthday honours, praising Walter for his own contributions to the electro-encephalographic location of cortical tumour. A reply to item #2.
- 4 E.D. Adrian, autograph letter 19 Jun 1942. On his suggestion that Walter may help Haldane with the EEG recording of fits induced by high oxygen pressure.
- 5 W. Grey Walter, xerox copy 8 Oct 1942. On the MRC grant to develop a portable two channel EEG machine, and its possible future manufacture by Marconi. Mentions a meeting held with (E.A.) Carmichael; (George) Dawson; (Denis) Hill; and (Denis) Williams to try and pressurise the government into sponsoring EEG manufacture and the creation of a national network of EEG centres. 3pp.
- 6 W. Grey Walter, xerox copy 11 Feb 1943. On the alarm amongst service personnel on the effects of short wave radiation.
- 7 E.D. Adrian, autograph letter 12 Feb 1943. Reply to item #6.
- 8 W. Grey Walter, xerox copy 16 Feb 1943. Arrangements for a meeting in London.
- 9 W. Grey Walter, xerox copy 25 Feb 1943. Arrangements for a meeting in London.
- 10 W. Grey Walter, xerox copy 26 Mar 1943. Enclosing a report on the Oxford EEG meeting.
- 11 E.D. Adrian, autograph letter 2 Apr 1943. Declining the idea of starting an Electrophysiology Society during the war. Discusses the difficulty of co-ordinating clinical and academic electro-encephalographic research and the need for placing Walter's informal network of EEG workers on a firmer footing.
- 12 W. Grey Walter, xerox copy 1943. On the possible contribution of J.Z. Young's group (working on peripheral electrophysiology) to an Electrophysiology Society, and the need for such a group given the public and legal aspects of electrophysiology. Ref. to Lees Smith trial.
- 13 E.D. Adrian, autograph letter 21 May 1943. On Sariskov's proposed visit to the BNI.
- 14 F.L. Golla, xerox copy 24 May 1943. Reply to item #13.
- 15 W. Grey Walter, xerox copy 25 May 1943. Reply to item #13. Also inviting Adrian to become President of the EEG Society.

- 16 W. Grey Walter, xerox copy 11 Aug 1943. Inviting Adrian to accept the Presidency of the EEG Society. Informing that Brian Matthews has already been made a member.
- 17 E.D. Adrian, autograph letter 20 Aug 1943. On his unwillingness to accept the presidency of the proposed EEG society. 2pp.
- 18 W. Grey Walter, xerox copy 25 Aug 1943. Outlining the limited role of the EEG Society President.
19. E.D. Adrian, autograph letter 2 Sept 1943. Accepting the presidency of the EEG Society and inquiring if any EEG department in London could produce readings for private patients.
- 20 W. Grey Walter, xerox copy 9 Sept 1943. Reply to item #19. Suggests Denis Hill as a possible electro-encephalographer for wealthy/neurotic private patients.
- 21 E.D. Adrian, autograph letter 1 Dec 1943. On a Ministry of Health request for comments on the Marconi EEG Machine.
- 22 E.D. Adrian, autograph letter 5 Sept 1945. On Walter's candidature for the Cambridge D.Sc. and his reluctance to provide an introduction for an EEG Book. Suggest dedicating the work to Golla. 2pp.
- 23 E.D. Adrian, autograph letter 29 Oct 1945. On Walter's candidature for the Cambridge D.Sc. and his reluctance to provide an introduction for an EEG Book. This seems to be a reply to item #24. 2pp.
- 24 W. Grey Walter, xerox copy 26 Nov 1945. Enclosing translations of Sariskov's and Livanov's papers. Enquiring about D.Sc. procedure.
- 25 E.D. Adrian, autograph letter + ms 14 Dec 1945. Modest covering letter for proposed introduction to volume on electroencephalography. Includes comments on Livanov's paper translated by Grey Walter. Introduction attributes growth of EEG to war time experience, but warns against the high expectations engendered by the new technology. 3pp.
- 26 E.D. Adrian, autograph letter 27 Apr 1946. On the proposed date for the forthcoming EEG Congress. 2pp.
- 27 E.D. Adrian, autograph letter 10 May 1946. On the arrangements and election of president in the forthcoming EEG Congress.
- 28 E.D. Adrian, autograph letter 20 Jul 1946. On the intended construction of ink recorders for physiology students. Mentions Craik's previous intention to construct a recorder.
- 29 W. Grey Walter, xerox copy 26 Jul 1946. On the meeting of the French EEG Society and the arrangements for the international congress in 1947. Expresses his concerns over the invitation to German workers.
- 30 E.D. Adrian, autograph letter 8 Jun 1947. On proposed visits to the Cambridge Laboratories after the EEG Congress.
- 31 W. Grey Walter, xerox copy 12 Jun 1947. Reply to item #30. Reports a recent meeting with Wiener, comparing his work to that of Craik but with much less sparkle and humour.

10 MARCONI list

- MME1 6 metres. Designed for therapeutic application. Enclosure with item #M2.
- MME2 C. Horne, Medical Section, Marconi Instruments, ts letter 12 Jun 1941. To Golla offering the loan of MME-7 for testing, and carbon, 30 Oct 1940. Brief Specification for Apparatus Mme. 7. A short-wave generator operating with a continuous variable wavelength of 4 to investigative purposes. Enclosure: 'Notes for Professor Golla', suggesting that the specific thermal effect of short-wave radiation will be pyretic and inhibitory to malignant cell formation. Suggest use in the treatment of meningitis and cerebral tumour.
- MME3 F.L. Golla, carbon letter 17 Jun 1941. To C. Horne, welcoming offer of MME7. Raises question of of RAF permission for experiments.
- MME4 C. Horne, ts letter 20 Jun 1941. To Golla, offering equipment and screening cage.
- MME5 W. Grey Walter, carbon note 24 Jun 1941. On the construction of a screening cage.
- MME6 C. Horne, ts letter 30 Jun 1941. To Golla, advising on the construction of a screening cage and the purchase of a mains filter unit.
- MME7 C. Horne, ts letter 10 Sept 1942. To Walter, discussing the need for Adrian's sanction before they can begin production of EEG equipment. Orders must be established before the Ministry of Supply and Aircraft Production will give permission for such a venture.
- MME8 Photo, Marconi ink recorder
- MME9 Photo, Marconi ticker tape recorder.
- MME10 Photo, Marconi high speed recorder.
- MME11 Photo, Marconi double pen recorder.
- MME12 D L Johnston, Baddow, blueprint 4 Aug 1944. Preliminary Issue of EEG circuit, power unit and two channel amplifier.
- MME13 D L Johnston, Baddow, blueprint 15 Aug 1944. Preliminary Issue of Electrode Selector Wiring.13

11 'Molly' Brazier list

- MB1 Molly Brazier, ts letter 7 Jan 1944. Ordering a frequency analyser for the EEG Laboratory at Mass. Gen. Claims that her current work in frequency measurement has revealed a correlation between the grading of normal EEGs and the success of cadets at pilot training. Also notes the changes in EEG pattern due to blood sugar level (in normal breathing) and in psychoneurotics. Promises to extend research to the effects of amytal adrenalin and mecholyl. Reports her use of the Grass Ink writing oscillograph and cathode ray oscillograph in the production of myograms for the investigation of infantile paralysis.
- MB2 Grey Walter, carbon 16 Feb 1944. Replying to MB1 accepting order and noting the similarity of their current research.
- MB3 Molly Brazier, ts letter 4 Oct 1945. Discussing her recent visit to the BNI and suggesting that Walter's work with the synthesiser should be regarded as a 'milestone' in EEG research. Requesting a beauty-wave cap.
- MB4 Grey Walter, carbon 18 Oct 1945. Reply to MB3. Reporting on the progress of the analyser (and its increased cost - between £300 to £500). Sending beauty-wave cap.
- MB5 Molly Brazier, ts letter 9 Dec 1945. Attempting to arrange an invitation for WGW to lecture to the APA and the ANA.
- MB6 Grey Walter, carbon 19 December 1945. Thanking her for her efforts in securing an invitation to the U.S. and funding. He notes the difficulty of a Spring visit since he is already committed to work in France and Russia in May or Jun.
- MB7 Molly Brazier, ts letter 4 Jun 1946. Warning Grey that a maverick nurse (David Tower aka. David Hellman) has been using his name as a reference to obtain employment and membership of the American EEG Society. Attempts of arrange Autumn visit by Grey to Boston.
- MB8 Grey Walter, carbon 13 Jun 1946. Reply to MB7. Thanking MB for her advice with regard to Hellman says that he has been in frequent contact with the Burden. Promises to try to reach the States in the autumn. Discusses the political difficulties surrounding his planned export of an EEG to Russia. Curious word missing: 'there would appear to be considerable political difficulties at the moment though my [XXXX] [word deleted/not typed on carbon] tell me that these clear up quite frequently. Concludes by noting the superior quality of MB's work in comparison with her American counterparts - who fail to reference the work of others.
- MB9 Molly Brazier, ts letter 4 Nov 1945. Arranging Grey's berth for return trip from the US. Promises a Boston cocktail party for him on 30 Nov so that 'you have the opportunity to meet most of your protagonists [sic] in their cups before you meet them on the battle ground.'
- MB10 Grey Walter, carbon 12 Nov 1946. Reply to MB9. Reporting on the poor workmanship of Ediswan and noting how much effort the BNI has expended preparing the analyser for final export.
- MB11 Molly Brazier, ts letter 16 Jun 1947. Reporting on the Atlantic City meeting of the American EEG Soc and offering to present Jack Kershman's ideas on the placement of electrodes to the British group. Notes that her presentation on the frequency analyser was attacked by 'our friend from Chicago' but claims that he received no support from the floor. Hand-

written addenda notes her difficulties in achieving a bias voltage of 0.8 v on both Annie's oscillator and integrator valves.

- MB12 Molly Brazier, carbon 9 Jan 1948. Reporting that the Boston analyser is now working normally and suggests that the troubles may have vanished with the summer humidity. Notes current Army sponsored research into the effects of sleeping pills on the EEG. Offers to report any new findings of Grey's to the Eastern EEG Association at Montreal on 27 Feb. Notes the redecoration of the offices at Mass. Gen. and suggests that she is considering having 'ruffled curtains of white Organdie for my room and Annie's just to show we are both feminine'
- MB13 Grey Walter, carbon 13 Jan 1948. Reply to MB12. On redecoration he notes 'I cannot feel that white organdie would be the quite the thing for Annie; I have a leaning to black satin myself with lace peepholes tactically disposed!'. Promises to try to find a paper for the Montreal meeting.

12 Correspondence with George Dawson

On Dawson (1911-1983) electro-encephalographer at Queen Square, see BMJ (10/12/83): 1803-4. Dawson pioneered summation as a technique for identifying small signals against background noise.

- GD1 George Dawson, ms letter (David Lewis Colony) 8 Aug 1943. On a recent visit of Geoffrey Parr and Mollie Heppenstal where they worked on the phase shift phenomenon in electrolytes. Parr and Saunders are able to obtain a 90° shift at extremely low voltages. Details problems with Grass writers and the difficulties of creating appropriate coils with British gauge wire.
- GD2 W. Grey Walter, carbon 11 Aug 1943. Reply to GD1. Confirms phase shift effect at low voltages and promises further investigation. Comments that his Grass writer coils are now prepared by the Admiralty.
- GD3 George Dawson, ms letter (David Lewis Colony) 26 Aug 1943. Describes the success of his coil winding attempts with the Grass writers. Uses 46 and 47 swg which creates high resistance coils giving 3500 ohms and 5000 ohms respectively. [Referenced records no longer attached]
- GD4 W. Grey Walter, carbon 9 Sept 1943. Confirming his own success with coils formed from 46 swg. Describes the continuing competition between firms to produce EEG apparatus to Dennis Hill specifications and his ongoing work with the 'harmonicar' and photo integrator.
- GD5 George Dawson, ts letter (David Lewis Colony) 16 Sept 1943. Describing how the writer's coils shorted in the humidity which followed a thunderstorm. On rebuilding their insulation was shown to be inadequate - moreover Dawson discovered that a 50% reduction in the spring attaching the coil arm to the pen reduced resonance and increased amplitude.
- GD6 Describes the crescendo of cortical spikes preceding myoclonic jerks and agrees with Walter that these could be attributed to a scanning process in the basal area of the brain.
- GD7 W. Grey Walter, carbon 24 Sept 1943. Replying to GD5 confirming Dawson's findings. Requests a meeting to discuss Dennis Hill's specification for LCC EEG apparatus. Returning copies of Wireless World.
- GD8 W. Grey Walter, ts 30 Dec 1943. Describing his conversion of the analyser pen to tube feed and the use of softer coupling springs in the Grass writer. Describes Lay (Marconi) bid for the LCC EEG contract.
- GD9 W. Grey Walter, carbon 22 Feb 1944. Praising Dawson's recent work.
- GD10 George Dawson, ms letter (David Lewis Colony) 26 Feb 1944. Describing the persistent flat top saw tooth motif in myoclonal jerks. Argues that spike polarity may be due to either spread and recession in the frontal electrode or a spread from deep to superficial layers of the brain. Notes that the discharge can move in any plane parallel to the surface.
- GD11 W. Grey Walter, carbon note 1 Mar 1944. Thanks for tracings enclosed with GD9.
- GD12 George Dawson, MRC Unit, Queen Square, ts letter 17 July 1944. Reporting Horne of Ediswan's defensive attitude about the construction of the EEG. Volunteering himself for Brown and Young's committee [MRC Nerve Injuries?]

- GD13 W. Grey Walter, carbon 19 Jul 1944. Reply to GD11. Offering help with the reconstruction of EEG equipment destroyed at Sutton and elsewhere during the flying bomb raids. Has written to York to try and obtain a place for Dawson on the nerve injuries committee as it has become packed with clinical peripheral neurologists with very unsophisticated views.
- GD14 George Dawson, MRC Unit, Queen Square, ts letter 1 Aug 1944. Describing a visit to Chelmsford to inspect the Marconi EEG, a machine which suffers badly from noise which the workers have not attempted tracing.
- GD15 George Dawson, MRC Unit, Queen Square, ts letter 12 Aug 1944. Arranging a visit by GW to Sutton.
- GD16 George Dawson, MRC Unit, Queen Square, ms letter 7 Sept 1944. On the ability of the new preamps to filter out inphase inputs making possible simultaneous ECG work on muscles etc. [Enclosing records - no longer extant].
- GD17 W. Grey Walter, carbon 19 Sept 1944. Thanks for GD15
- GD18 George Dawson, Royal Oak Hotel, Keswick, ms letter 24 Sept 1944. Describing his construction of a new amplifier - like a very early circuit Offner made for Gerrard but with a spice of Matthews and Schmidt and Goldberg. Use of cathode followers has largely reduced output impedance.
- GD19 George Dawson, MRC Unit, Queen Square, ms letter 6 Mar 1945. On Marconi's failure to progress with EEG production and Greenfields use of a four channel Hughes writer at St Mary's Medical School.
- GD20 George Dawson, MRC Unit, Queen Square, ms letter 16 Mar 1945. On the forthcoming meeting attached to Denis Hill's book launch. On McPhail's work and the difficulties of the resetting the recording reed to zero in the 46 swg amplifiers.
- GD21 George Dawson, MRC Unit, Queen Square, ms letter 12 Apr 1945. Describing the ongoing difficulties with the Marconi EEG project. Their most recent prototype (which they claimed was working) produces little more than noise and artefacts. Notes that Marconi has asked the Ministry of Supply Valve Committee for permission to produce American SC7s for the EEG and the Ministry of Supply's justified scepticism given the Queen Square group's successful production of this machine using British equipment.
- GD22 George Dawson, MRC Unit, Queen Square, ms letter 17 May 1945. On Carmichael's scheduling of a meeting with GEC to discuss the production of EEG, ECG and analyser equipment. And the production by Horne (Marconi) of an apparently adequate EEG reading. The equipment to be tested by Denis Hill.
- GD23 George Dawson, MRC Unit, Queen Square, ms letter 1 Aug 1945. On the mix up regarding the MRC's interest in electric stimulators - which was only corrected through the appearance of Walter and Ritchie's article in Electronic Engineering 17 (1945): 585-88. Describes experiments inspired by Rushton on the use of saline solution in the analysis of cramp.
- GD24 W. Grey Walter, carbon 7 Sept 1945. Enclosing tss of his technical chapters on the EEG and noting the favourable reception of his letter to Wireless World.
- GD25 W. Grey Walter, carbon 1 Oct 1945. Enclosing Jim Lassitar's EEG Society subscription.

- GD26 W. Grey Walter, carbon 29 Oct 1945. Enclosing copy of letter to Clark of the Ministry of Health. [Enclosure missing]
- GD27 George Dawson, MRC Unit, Queen Square, ms letter 12 Nov 1945. Commenting on Marconi circuit.
- GD28 W Grey Walter, carbon 14 Nov 1945. On Marconi's delayed production of the EEG prototype.
- GD29 George Dawson, MRC Unit, Queen Square, ms letter 19 Nov 1945. On Carmichael's willingness to publish the new EEG specification in J. Neurology, Neurosurgery and Psychiatry 8 (1945): 61-64.
- GD30 W. Grey Walter, carbon 20 Nov 1945. Agreeing to Carmichael's suggestion and trying to ensure further notice in the weekly press.
- GD31 George Dawson, MRC Unit, Queen Square, ms letter 8 Mar 1946. On an unusual EEG pattern in a case of myoclonal jerking and the MRC demand that all commercial EEG equipment should be tested via Denis Williams.
- GD32 George Dawson, MRC Unit, Queen Square, ms letter 19 Sept 1947. On the hold-up in EEG production due to the shortage of valves and GW's plan to produce cheaper EEG machines by collaborating with Harry Shipton's brother.
- GD33 W. Grey Walter, carbon 24 Sept 1947. Reply to GD31.
- GD34 W. Grey Walter, carbon 16 Oct 1947. On a delivery of valves from Herbert. Is sickened by commercial collaboration after the prototype analyser was damaged in transit due to shoddy packaging.

13 William Cobb

WC1 William Cobb, ts letter 19 Jul 1944. Requesting comments on an enclosed draft paper on the relationship between tumours and the theta rhythm.

WC2 W. Grey Walter, ts letter 26 Jul 1944. Reply to item 1. Argues that the abnormality of a tumour record is normally a product of cell destruction rather than the internal pressure of the CSF.

WC3 William Cobb, ts letter 3 Aug 1944. Reply to item #2. Thanking Walter for his comments and arguing that their differences over localisation techniques are ones of outlook and emphasis.

WC4 W. Grey Walter, ts letter 23 Nov 1945. Enclosing two requested records from tumour cases.

WC5 W. Grey Walter, ts letter 24 Sept 1946. Introducing Prof. Gastaut of Marseille.

14 Robert Schwab list

- RS1 Robert Schwab, carbon 18 Oct 1947. Congratulating him on his Rockefeller grant. Requesting details of European papers on the EEG published late in 1947 so that he can include them in his contribution to Recent Advances in Medicine (Philadelphia: Spiegel). Notes the difficulties of maintaining a constant heater voltage in the circuits and suggest possible rearrangements for Ediswan. Notes his use of the analyser in measuring changes in the alpha rhythm following the treatment of myxedema and the changes in theta and delta rhythm following carbon monoxide poisoning. Notes the request from Marquis Publishing Co. for an entry on WGW for Who's Who in New England.
- RS2 Robert Schwab, ts letter 6 Feb 1948. On the arrangements for setting up the American EEG Journal; requesting a list of possible European subscribers from Grey. Refers to Grey's claim that frequency analysis suggested that *petit mal* seizures originated in the thalamus and asks for reference to include in his forthcoming review article. Also requests news of Cobb's work on tumour location by EEG.
- RS3 Robert Schwab, ts letter 5 Mar 1948. On the difficulties of inter-channel analysis, stating that they do not get the cumulative out of phase voltage predicted in Grey's 1946 paper. Note by James Casby explaining the difference in predicted inter-channel out phase results.

15 Correspondence with Reginald Bickford

- RB1 Reginald Bickford, ts letter 23 Jul 1944. Based at St. Hughs attached to RAF. Application for membership to the EEG Society.
- RB2 Grey Walter, carbon 6 Jul 1944. Detailing the progress in the manufacture of the analyser and the correct dimensions for a synthesiser shutter for producing sine waves.
- RB3 Reginald Bickford, 17 Aug 1946. Inquiring on the availability of analysers, since he plans to take one with him when he takes up his new post at the Mayo Clinic. Ask for a reprint of the Electronic Engineering article on the photomechanical wave synthesiser and inquires after work on the implantation of sub-cortical electrodes.
- RB4 Grey Walter, carbon 19 Aug 1946. On his planned visit to Mass. Gen. Hospital in Nov and the possibility of escorting an analyser to Rochester. Reports the success of his work with the stroboscope and implanted electrodes.
- RB5 Reginald Bickford, ts letter 24 Oct 1946. On his arrival in America and his meeting with Brazier, Denny-Brown, Schwab and Lennox at Mass Gen. Describes the luxurious working conditions at the Mayo Clinic.
- RB6 Reginald Bickford, ts letter 30 Sept 1947. On his preparation for the Oct meeting of the Central EEG Society. Asks for G.W.'s advice on dealing with Gibb's possible objections to the use of silver chloride electrodes.
- RB7 Reginald Bickford, ts letter 27 Jan 1948. On the new arrangements within the Mayo Clinic and his plans to reproduce Jaspers' experiments on thalamic stimulation. Inquires after possible delivery of the analyser.
- RB8 Reginald Bickford, ts letter 29 Apr 1948. On the arrival of the analyser. His experiments with flicker - though he doubts Walter's claim that rate is a crucial variable in the induction of *petit mal* attack. Describes his observations of a boy who had the habit of waving his hand in front of his eyes to encourage attacks. Describes his plans to work on the thalamic stimulation of a rabbit using a Horsley Clark machine.