



Sheetlines

The journal of
THE CHARLES CLOSE SOCIETY
for the Study of Ordnance Survey Maps

This edition of *Sheetlines* was published in 1993 and the articles may have been superseded by later research.

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for the Study of Ordnance Survey Maps
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The Charles Close Society was founded in 1980 to bring together all those with an interest in the maps and history of the Ordnance Survey of Great Britain and its counterparts in the island of Ireland. The Society takes its name from Colonel Sir Charles Arden-Close, OS Director General from 1911 to 1922, and initiator of many of the maps now sought after by collectors.

The Society publishes a wide range of books and booklets on historic OS map series and its journal, *Sheetlines*, is recognised internationally for its specialist articles on Ordnance Survey-related topics.



SHEETLINES

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August 1993

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Editorial

Assuming the editorship of any publication is never easy. In my own case I feel that it will be very difficult for I am succeeding an editor whose knowledge of cartography in general and Ordnance Survey in particular is superb; I shall never know even as much as he has undoubtedly forgotten of his subject. May I, on behalf of all the members of the Society, thank Richard Oliver for all his work and dedication in the production of the past nine issues of *Sheetlines*.

My own interest in Ordnance Survey dates from the 1940s when I was a member of the Boy Scouts and hiking was part of the activities, and also had a strong interest in railways. (The latter interest is still very much to the fore.) Later, in the 1950s and early 1960s, I became involved in motor rallying, both as a participant and organiser. Our bibles were the 6th, and then 7th, editions of the one inch OS; the rate of change to roads and the countryside was relatively slow at that time and so one implicitly believed what the map portrayed. My knowledge of the content became "quite good" and the opportunities for producing contorted navigational clues were legion! Taking part in one, I well remember leaving one check point along a yellow road which was disfigured by the county boundary (well, on the map!); everyone else, including the marshals, had interpreted the road as a cart track, and since I had a lady navigator their thoughts were entirely wrong. (Incidentally, I'm conceited enough to say we came first!)

The first secondhand OS map that I bought was from Foyle's in Charing Cross Road in 1947/8; it was a ¼-inch second edition copy of Southern England, cost 6d, and I bought it because all the railways marked were with the pre-grouping companies! I still have and treasure it.

Thank you to all the members who have wished me "Good Luck". But from all I'm told I shall need more than luck -- what will be needed are contributions from **all** members, not just "the professionals". So *PLEASE keep my post box rattling with contributions, however small.*

Lionel Hooper

Obituary

Members will be sad to hear of the death in July of Rod Monnington. A keen letter writer, Rod was unfailing in checking his maps in response to requests in *Sheetlines* for information, and totally unselfish in sharing any information he had. It is an understatement to say that Rod derived great pleasure in hunting maps — he will be missed at all the book fairs in the north west, and most of the book shops over an even greater area.

Two or three times each year Rod would call in to see us, bringing with him new acquisitions and queries. Over a sandwich lunch we would talk maps, the Charles Close Society and map hunting. I always tried to find something new to show him, and he would invariably have something new to show or tell us.

Rod had a quiet enthusiasm for Ordnance Survey maps and was very specific in his collecting, reflecting his precise and thoughtful personality. He lived in Knutsford and sought to have every state of every OS map with Knutsford on it. Not an easy task. He also had a specimen map collection and "H Collection" of pictorial covers.

Everyone who met or corresponded with Rod will know what a loss the Society has suffered, and our thoughts go out to his wife Mikki and family.

David Archer

Marginalia

Not to be taken literally!

Brian Adams reports a quote from BBC Radio 4's "News Quiz" on 8th May. The extract from a school newsletter recorded that the Venture Scouts had been raising money by arranging a series of sponsored cycle rides ' across the width of the local Ordnance Survey map '.

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"Translations"

David Binns has sent details of a play performed as part of the Covent Garden Festival during June and July.

The play "Translations", by Brian Friel, is set in August 1833 at a hedge school in the townland of Baile Beag (Ballybeg) - an Irish speaking community in Donegal. Encamped in a nearby field is a detachment of the Royal Engineers preparing the first Ordnance Survey of Ireland. For the purposes of cartography, the local Gaelic place names have to be recorded and rendered into English.

In exploring the effects of this operation on the life of the community, Friel poignantly reveals the far reaching personal and cultural consequences of an action which at first sight purely administrative.

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'How many towns in London Town?'

Guy Messenger posed this question in Sheetlines 35, (p.36), and his list is as follows:

Areas: Angell Town; Camden Town; Canning Town; Cubitt Town;

De Beauvoir Town; Kent Town; Kentish Town; Silvertown;

Somers Town; Summers Town, (total: 10).

New Suburbs: Camden New Town; Deptford New Town; Chiswick New Town;

Kensal New Town; Norwood New Town; Stratford New Town,

(total: 6).

Stations: Acton Town; Enfield Town; Hounslow Town; Sudbury Town;

Wandsworth Town, (total: 5).

There are also the *cities* of London and Westminster and the *villages* of Dulwich, Hampstead, and Highgate.

One which is not on Guy's list is Agar Town.

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A new symbol for the Ordnance Survey maps?

"Supermarkets do not yet feature on Ordnance Survey maps, but if they did the cartographers would have a full time job keeping up with the building work.

The little — —, or whatever symbol the OS might choose to use,"

(*Bath 'Evening Chronicle', 31 May, 1993*)

Members might like to submit to the editor suitable suggestions for a supermarket symbol ... a selection of submissions will be published.

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Walter Patterson has drawn my attention to a poem by William Wordsworth published in "The Mountains of Snowdon" by Carr and Lister, in a chapter on Cartography and Maps. There are several pages on the OS and suitable maps for walkers and mountaineers, and states that"Col. Sir Charles Close, in a paper on the Ordnance Survey of the United Kingdom, refers to the experiences of the officers and men of the Survey on the mountain tops of Wales, and quotes a little known poem by Wordsworth, originally written with a slate pencil on a stone on the side of Black Comb in Cumberland."

Mr Patterson wonders how many members are aware of the poem .

Stay, bold Adventurer ; rest awhile thy limbs
 On this commodious seat ! for much remains
 Of hard ascent before thou reach the top
 Of this huge Eminence, -- from blackness named,
 And, to far travelled storms of sea and land,
 A favorite spot of tournament and war !

Know, if thou grudge not prolong thy rest,
 That on the summit whither thou art bound,
 A geographic labourer pitched his tent,
 With books supplied and instruments of art,
 To measure height and distance ; lonely task,
 Week after week pursued ! -- To him was given
 Full many a glimpse (but sparingly bestowed
 On timid man) of Nature's processes
 Upon the exalted hills. He made report
 That once while there he plied his studious work
 Within that canvas dwelling, colours, lines
 And the whole surface of the outspread map,
 Became invisible : for all around
 Had darkness fallen -- unthreatened, unproclaimed --
 As if the golden day itself had been
 Extinguished in a moment ; total gloom,
 In which he sate alone, with unclosed eyes,
 Upon the blinded mountain's silent top !
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Gazetteered - for what? (O.S. Leaflet No. 41/34)

George Sasiemack has responded to the query from Tim Nicholson expressing doubt that the leaflet refers to the London 3-inch Gazetteer, since the Gazetteer covered all four London sheets and cost 2/-, whereas the leaflet talks about '...names appearing on this sheet...' and a price of 1/2d. Its print reference of O.S.O. - 10,000 - 2-34 seems inconsistent, too, with the 6000/33 on each of the four sheets. Some copies of the covers on the mounted and folded 3-inch sheets had some text on the inside, the tone, as well as the details, of which do not go happily with the wording of 41/34. His experience of the bureaucratic mind suggests that the wording is likely to have been more similar if both items were talking about the same gazetteer.

Trafford Tourist Tea Towel.

John Smith of Eastbourne writes to inform us that the Trafford MBC Tourist Information Centre has locally produced a tea towel depicting part of Cheshire 25 Inch, second edition, (1898), sheet xviii.6. The towel reproduces the sheet at original scale, complete on the north-south axis (including marginal information), but omitting approximately a quarter of the sheet at each end on the east-west axis. Thus the towel is portrait format as opposed to the landscape format of the (complete) original map.

Peel Causeway (the present day *Hale*) and *Altrincham & Bowden* stations appear, together with most of the town's business and shopping area.

Considering the texture of the material, which appears to be of good quality, and the fine detail of the original, the map has reproduced well. The towel dimensions are 31 inches (north-south) by 20 inches (east-west), with the print area being approximately 25 (between neatlines) by 17. Consideration is being given to producing a second towel of the map using a different section.

The towel-map is available at £2.25 to callers, £2.55 including p&p, from Trafford MBC Tourist Information Centre, Stamford New Road, Altrincham, Cheshire,, WA14 1EJ, Telephone 061-941-7337

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Where is it now? - Mayson's Ordnance Model of the Lake District.

Paul Swindell writes suggesting that the model might well be something which he saw in Keswick Museum Art Gallery and which he thinks fits the bill. The museum is in Station Road, and well worth a visit if you are in the area.

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Writing paper with an OS flavour

Paul Swindell also suggests that fellow members of the Society may be interested in a source of writing paper which is produced using obsolete OS mapping of various scales. It is called GEO Stationery and is 'manufactured' by a company called Colourstyle Ltd, Merseyside, L33 7SY.

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'Catalogue cartes anciennes' (Sheetlines 36, p 41)

Ian O'Brien writes that Richard Oliver's sister-in-law omitted to send him a further IGN leaflet '*Prix Publics Indicatifs*'. Issuing a price list separately from their descriptive leaflets is evidently IGN's response to progressive inflation. In a number of cases sheets are available either printed from copper or, at a much reduced price, by Litho. The present list is much reduced from that offered in 1938 by the 'Service Geographique de l'Armee'.

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'The centres of England and Wales'

Following the reprinting of the article in the *Geographical Journal* by Colonel Sir Charles Arden-Close, FRS, Ian O'Brien writes that Sir Charles subsequently incorporated the article in a longer essay entitled "Some Geographical Centres" which was published as chapter VI of his book *Geographical Byways* (Edward Arnold, 1947). In this he went on to consider the centre of Africa, the centre of population of England and Wales, and, in the latter, the point furthest from the sea.

Reproduction of part of the Linen Tea-Towel
referred to in John Smith's Letter

Book and Map Reviews

Ordnance Survey of Great Britain: Scotland - Indexes to the 1/2500 and 6" Scale Maps;
 Publ David Archer, The Pentre, Kerry, Newtown. 1993; 96 pp, £15.00 (plus 93p p&p)

Ever since David Archer issued his admirable reprint of the index maps for England & Wales, a similar reprint for Scotland has been long for, though I must accept this as a much riskier project. While a great many libraries and record offices in England have good holdings of large scale maps, in Scotland there are only a handful of such collections, libraries there having a tendency to refer readers to the National Library of Scotland or Strathclyde Archives. A similar situation would exist in Ireland. Nor should one take academic interest south of the border for granted - after 12 years I still do not know of any library south of Cambridge that buys my own maps of Edinburgh or Glasgow (or of Belfast or Liverpool for that matter). The North-South divide is real.

I hope therefore that members will support this handsome publication, which will prove invaluable to local historians for many years to come. The first 74 pages are a fairly straight reprint of the original 1907 Index book, but after that the publisher gives us a real bonus, with index maps for earlier or later editions. Most English counties retained their original grids throughout the lifetime of the 'county series', Essex and Northumberland being exceptions; but in Scotland a whole host of counties have shuffled from one meridian to another across the years. This reprint does us all a service by including earlier index maps for eight counties, and later index maps for another four; Dumbartonshire, for instance, has had three different sets of sheetlines, and all are included here. Reproduction of the maps is a little varied - I find that for Dumfries less sharp than the photocopy I normally work from - but some of the most visually satisfying are the very earliest, such as that for the Wigtownshire 1843-7 six-inch series.

Brian Adam's introduction explains Cassini's Projection and then goes on to discuss the transfer of counties and boundary changes. All this is very thorough, yet I do not think the author has been well served by the typesetting, which is on the 'block paragraph' basis so frequently used nowadays by local historians and academics (perhaps because they have never learnt to use their word processors?). Confronted by this format the present reviewer's instant reflex is to groan and return to his Trollope. There is, however, much useful information here, and local historians are helpfully warned about some pitfalls, notably the partial completion of some 25" maps and 6" surveys. Nevertheless I have an uneasy feeling that cartographic perspective has here taken over from the historical, and the rich content of the maps has been ignored; if somebody like myself, who spends his working life with these maps, finds himself sinking in a sea of geodesy, then how is the average local historian going to feel?

There is a short preface by Peter Milne which sums up the difficulties faced by local historians in using large scale maps. This recognises that these maps are for use by people of every interest and persuasion, and this book is ultimately for their benefit rather than that of the collector or map enthusiast. Ordnance Survey plans rank alongside newspapers and census returns as the most crucial of primary source to many library and record office users, and the archival importance seems likely to grow as the tide of modern map-making swings away from the simple pleasures of printed paper. The book will undoubtedly increase awareness of the 6" and 25" maps (I always feel happier about the latter scale approximation) but whether it leads to Peter being faced with better informed readers or simply more of them remains to be seen!

This book is David Archer's fourth and, though I find it slightly less satisfactory than the England and Wales volume, it firmly establishes him as an important publisher in our field. Every serious map or local history library should own at least one of his books. His intention, he tells me, is to issue anything that might be of use in research or in enjoying maps. He has done us proud. Dare we ask for a similar volume for Ireland?

Alan Godfrey

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RICHARD OLIVER, *Ordnance Survey Maps: a concise guide for historians*, Charles Close Society, London, 1993. pp 192, £12.95 from Dave Watt, Flat 9, 33 Cotswold Way, Langley Avenue, Worcester Park, KT4 8LN.

It is almost thirty years since the publication of the late Brian Harley's slim handbook, *The Historian's Guide to Ordnance Survey Maps* (1964). Brief though it was, Harley's guide continued to be used by historians (notably the growing body of local historians) as a work of reference, particularly by those new to the joys and frustrations of using cartographic evidence to reconstruct the past. The intervening years have seen the publication of other guides to Ordnance Survey maps, notably Harley's substantial *Ordnance Survey Maps; a descriptive manual* (1975), and of general handbooks on the uses of maps in historical research, such as Paul Hindle's *Maps for Local History* (1988). Nevertheless, a user-friendly, comprehensive and detailed guide devoted to the large-scale maps of the Ordnance Survey has long been needed, and Richard Oliver's excellent new book fills the gap admirably.

The book begins with brief descriptions of the history of Ordnance Survey mapping and of the development of the variety of scales at which maps were made, covering the whole spectrum from 1:500 (126.72 inches to 1 mile) to 1: 633,600 (10 miles to 1 inch). The bulk of the book consists of three substantial sections of reference material which make it an indispensable handbook for anyone using Ordnance Survey maps for historical purposes. These sections are, first, a series of notes on the ways in which the Survey has depicted detail at different scales and at different periods in its history. Drawing together the mapping conventions laid down in the guidelines to which O.S. surveyors worked, notes are given on almost every conceivable mappable detail from airfields and allotment gardens to wells, windlasses and woodland. The second section is a comprehensive guide to the large-scale mapping of towns in England, Scotland, Wales and the Isle of Man. An alphabetical listing of towns provides full details of mapping at 1:2500 and larger scales. The third section consists of a summary guide to the maps published for each county in Britain. It includes details of the Old Series One-Inch (1:63,360) maps, full details of the county series 1:10,560 and 1:2,500 surveys, including the extent of each revision, and a note of the dates of the National Grid survey of the county. These three sections are particularly welcome as they bring together in one volume important reference material which has hitherto not been readily available to the non-specialist.

All in all, this is an important and valuable addition to the literature and one which no local historian should be without. Richard Oliver and the Charles Close Society are to be congratulated in undertaking so successfully a task which will benefit historians for many years to come. This book will surely become a standard work of reference.

Angus J.L. Winchester
Lancaster University.

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New Maps of Ireland published in 1992. pp 12, A4, Available free from Paul Ferguson, Map Library, Trinity College, College Street, Dublin 2, Ireland.

Until recently the map collection at Trinity College, Dublin was decidedly the poor relation amongst the 'British' copyright map libraries, with no librarian and no proper accommodation. Things changed in 1987 with the appointment of Paul Ferguson as map librarian, and the construction (strictly, adaptation) of new accommodation, and in the past five years TCD's profile has risen and its reputation grown rapidly. The first edition of *New Maps of Ireland* was issued in 1992, and it is intended that it shall appear annually. It endeavours to include all maps of Ireland, and all maps published in Ireland (except for 1:10,000 and larger scale mapping published by the two OS departments, which are listed in their publication reports), and an interesting collection they are too, particularly some of the tourist maps which don't seem to be sold at all in Britain. The one improvement that may be suggested is to include a list of publications about Irish cartography, which would surely not be very onerous.

At present nothing of the sort is produced for Great Britain; I wonder whether, having regard to acreage, economy, population and so on, the variety of maps produced in the larger country would be that much greater. Quite possibly not. Meanwhile, congratulations to Paul Ferguson on a most worthwhile enterprise.

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Australia on paper: the story of Australian mapping. By John D. Lines. Pp.vii, 343; illus. ISBN 0 646 09769 5. Price Aus.\$33 (Hdbk) plus \$17.00 postage. Published by Fortune Publications, PO Box 1220, Box Hill, Victoria 3128, Australia, 1992.

This attractive and well-produced book details the history of the development of the mapping organisation of Australia, beginning with the work of Captain Matthew Flinders, RN, in the late eighteenth century to 1990. The principal theme of the book is the initiation, growth and completion of the three main national map series at the scale of 1:1,000,000, 1:250,000 and 1:100,000.

The author, who began his career in survey and cartography in 1940 as a sapper with the 2/1st Corps Field Survey Company RAE, and retired as Director of National Mapping, makes the point that very little has been written about Australian mapping, and this is the first attempt to produce a comprehensive narrative. Well-illustrated, and not over-technical (and yet technical details are not ignored, but rendered in a most readable fashion), this is a carefully researched book, based on much unpublished information in the Australian Archives.

Fourteen chapters cover a wide variety of mapping subjects, including the colonial period, aerial photography and cartography before 1945, and the 'renaissance of geodetic surveying' in the 1960s. Many of the sections within the chapters parallel our own organisational history (Seymour, 1980), and offer an interesting comparison - we see the proceedings of the

Commonwealth Survey Committee from an Australian point of view, for example, and the Australian side of the International Map of the World project.

Of particular interest to this Society is the chapter on the 'Advent of federation.' This includes a section on the 'influence of Colonel Close, British War Office'. Close, who was head of GSGS (1904-1911) at the time, wrote a long memorandum, which is here reproduced in full, on the probable costs of, and the best scale for, a military map of Australia (it brings to mind Roy's 1766 recommendations for a map of Great Britain). Most of Close's technical suggestions were approved by Major (later Major-General Sir) William Throsby Bridges, who is called by Lines the 'father of organised topographic mapping in Australia,' and who adopted many of Close's ideas.

There is much of direct cartographic interest in this book, in which respect it differs from Seymour; the final chapter, 'Mapping in disarray', is a frank look at the mapping bodies of Australia today, and reviews the work of recent committees, including that of the most recent, the Wrigley Report of 1990. This book is to be recommended as an important contribution to the literature on national mapping organisations, and is a mine of information on methods and processes. It is eminently readable, and the text is liberally interspersed with quotations from unpublished sources, which give the full context of many important documents; there are no colour illustrations of maps, except for an endpaper, but the black and white photographs, and many line diagrams are well chosen. It would appear that John Lines has published this volume himself - he deserves to make a profit.

Y. Hodson

MICHAEL P. CONZEN, JAMES R. AKERMAN AND DAVID T. THACKERY, *Illinois county landownership map and atlas bibliography and union list*, pp ii, 67, A5, paperback, Springfield, Illinois, The Illinois Cooperative Collection Management Coordinating Committee, , ISBN 0-9632243-0-1. No price stated.

The county land ownership maps and atlases which were produced in North America from the mid nineteenth century onwards are probably known to British and Irish students of cartography more by reputation than by acquaintance. There are a few examples in the British Library Map Library, and no doubt more are scattered about various collections, but I suspect that few readers of *Sheetlines* will have turned the leaves of one, or have much idea what to expect. They are, in fact, a development of the county maps, usually at one-inch scale, produced in Britain and Ireland in quantity between 1760 and 1830, with the important addition of land ownership information; in Britain, such information must be sought from either the tithe surveys of circa 1857-51, or from the 'Lloyd George Domesday' of circa 1911-12. In this respect students of land ownership in parts of the United States and Canada have advantages not enjoyed in Britain, though the spread of land ownership mapping varies considerably, with none published before 1930 for four of the 102 counties of Illinois, whereas no fewer than fourteen were published for the intriguingly-named Bureau County between 1857 and 1924. (An officials' paradise?) Michael Conzen is preparing a comprehensive bibliography of these maps for the United States, to be accompanied by a scholarly study, and this booklet is a useful interim offering, and well worth studying. However, it has one most unfortunate defect: there is no mention of scale, and its possible value for comparative studies for those of us without ready access to originals is thereby greatly diminished.

Incidentally, some use has been made of a publisher's records to identify maps which were apparently published but of which no copies have as yet come to light. The authors regard this as 'unorthodox', but it is an unorthodoxy which should become orthodox whenever opportunity offers, as it has to Roger Hellyer and I with the OS ten-mile maps and the One-inch Seventh Series.

Richard Oliver

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Music and maps

An interesting insight into the relationships between Ordnance Survey Royal Engineers in 19th-century Ireland and local inhabitants is suggested by a comment in the manuscript notebook of Herbert Hughes, a folksong collector gathering songs in north-west Donegal at the beginning of the century.

Hughes, a musical prodigy whose work as a composer would later be performed at the Proms, had gone to Donegal at the suggestion of the famed antiquarian, Joseph Bigger, who told the young musician that he should listen to the songs and music of the native people if he wished to understand the nature of traditional song as an expression of community spirit. What Hughes found in this most desolate county, on the bleak north-western corner of the country, was to change his course in life, and he spent the rest of his days collecting songs and arranging them for classical singers and for concert performances. He was responsible for restoring many songs, then on the brink of extinction, to the lips of the people, and we have evidence of traditional singers who have learned some of their songs from Hughes's arrangements of earlier versions.

Hughes's very first field notebook is dated 1903. He had gone to the townland of Kilmacrennan near Letterkenny, and on to Dunfunaghy workhouse on the bleakest part of this Atlantic seaboard. The people of this region lived in abject poverty, and had been disenfranchised by the burgeoning estates which had thrown them out of their meagre homes and taken away what source of livelihood they had - mainly small-farming and fishing.

But they carried a treasure-trove of traditional, ancient songs in their heads. What they gave to Hughes is a revelation, and some of those first songs in Hughes's first notebook are still sung on concert platforms to this day, and still appear on gramophone records and in songbooks.

The notebooks record the sources of every song sung and every tune played (usually on the fiddle) to the collector. Tune number 4 is described as 'Air sung to "The Belfast Maid"', and Hughes notes that it is 'a ballad learned by John Sweeney from a sapper in the Ordnance Survey about 50 years ago and transmitted by him to his son Frank MacSweeney who sang it to me. It is never sung now in the localities of Kilmacrennan or Termon.' Ninety years have passed since then, and 'The Belfast Maid' - or to give it Hughes's title, 'My Lagan Love' - is in every concert artist's repertoire, restored to life by a brilliant arrangement.

We are told that the Royal Engineers in 19th century Ireland went unarmed about their business of surveying and collecting their memoir material. Professor J.H. Andrews reminds us of this in his essay 'The Ordnance Survey and the Local Historian, (Ulster Local Studies, Vol. 14, No. 2, Winter 1992), refuting the image of the loutish R.E. officer who takes hostages and threatens to shoot cattle in Brian Friel's dramatically satisfying but historically inaccurate play *Translations*, ostensibly centred in a remote part of County Donegal being mapped by the

Ordnance Survey in the 1830s. (*A note that Friel's play was performed at the Covent Garden Festival is included in 'Marginalia' — Ed.*)

What Hughes's notebook tells us is that some social contact existed between the soldiers and the local population, most of whom in this region were living in a state below what we call 'working class' level. There were evidently some cultural exchanges, and these were encouraged by the OS Director, Colby, and his second-in-command, Larcom, both of whom developed an affection for the country and its people, Colby marrying a girl from neighbouring Derry and Larcom spending the rest of his career in Irish political affairs.

We see in the Hughes notebooks the beginning of what has been described as the Ordnance Survey's 'peripatetic university', and we can catch a heartwarming glimpse of a generally benevolent group of soldiers who were rather more of a scientific and literary bent than they were of military inclination, swapping songs and tunes with a poverty-stricken population who had much to offer in return for their friendship.

John Paddy Browne

[John Paddy Browne has been researching the life and work of Herbert Hughes for over 20 years and has followed in Hughes's footsteps in a search for information on the composer. He has amassed a large collection of Hughes's letters, music scripts and notebooks, including the notebooks containing the details for this short essay. Co-incidentally, Brian Friel was John Paddy Browne's English and mathematics teacher at the Christian Brothers' school in Derry in the 1950s.]

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**The Edinburgh 'Three Day Event'
and the
Charles Close Society annual general meeting, 13-15 May 1993**

As an experiment, the Society's twelfth annual general meeting was held outside London, in the capital of Scotland. A 'three day event' in Edinburgh, organised on behalf of the British Cartographic Society and the Charles Close Society, has been held in most years since 1981, usually in November, but May has lately been favoured. An opportune Scottish-oriented bicentenary, which might be expected to be of more than usual interest to C.C.S. members, gave the cue for holding the A.G.M. in Edinburgh.

The proceedings started on Thursday evening with a lecture, under B.C.S. auspices,

Cartographic ignorance in geography

by Dr Chris Board, the President of B.C.S. and a founder member of the Charles Close Society. Chris said that it was no longer true that geography and cartography were inseparable companions; graphics had lost cartographic sense, though cartographers had retained their geographic sense. Geographic Information Systems (GIS) did not carve out a new territory, but brought geography and cartography back together again. The old dictum about chaps and maps was no longer applicable, though the general public might cling to that belief.

This was the outcome of a theoretic and quantitative revolution which began in the late 1950s, and was associated in part with increasing computing ability. Formerly the cartographic

element in geography had been mainly topographic map reading, with a little thematic cartography. Brian Berry took the view that if you could boil down all the data by mathematical methods, you could end up with four maps in place of forty-three, and argued quite strongly that we should not bother too much about maps. By this time (1961), most university geography departments had their own cartographers, who did such a good job that the geographers were quite content to leave to them the working out of fine detail. The formation shortly afterwards of the Society of (University) Cartographers and of the British Cartographic Society, each with its journal, further drew away cartographic contributions from the established geographical journals. These remarks were illustrated by a number of slides, illustrating a great variety of maps, including an unpublished one, *Restraints to Development*, from the Ministry of Housing and Local Government maps office, which showed national parks in green, military land in red, urban land in grey, etc., and which left white areas which could be played about with for planning purposes; not a single name appeared on the map. Another was a map of England and Wales farm types, which tried to standardise labour inputs; the idea was that the distribution would speak to the geographer. Chris described this as 'a most expressive map'. In contrast, there were some 'really rather awful' maps that geographers had been responsible for, notably one of the distribution of Japanese in Los Angeles, in which the dots were nearly invisible!

In the 1970s post-modernism appeared in geography, and its ideas were introduced to historical cartography by J.B. Harley and later Denis Wood. These were rather radical ideas, which could be appreciated by geographers, but what about GIS? For some geographers, GIS holds more potential than cartography; it is only necessary to learn to use the package, and there is no need to worry much about cartographic principles. Large numbers of people can make maps, and bad maps, very easily, and so cartographers say that tutors should be provided for these packages. In GIS, a lot more attention is being paid to users, which gives geographers a second chance to come back and use these things; in cartography, at least, the GIS people have become aware of the need to take account of design.

In the subsequent discussion, representatives of a well-known Edinburgh map publishing firm observed that the Los Angeles map was more bad graphics than bad cartography, and that possibly accountants and costs had something to do with it. Professor Coppuck observed that one of the beneficial results of GIS had been to concentrate on the quality of the data used, which had been taken for granted until recently. A gentleman observed that a lot of GIS people thought that there were no problems with the data, and that it was simply an extension of computer science; at a recent GIS conference, there were some very stupid questions from computer scientists, who couldn't understand cartographic generalisation.

Perhaps taking indifferent mapping for granted has given the Ordnance Survey less of a market in the past than it ought possibly have enjoyed; at any rate, the audience betook themselves variously either to the alehouses or to bed, rising on the morrow for

'William Roy: a celebration'

held at the premises of the Royal Commission for Ancient and Historical Monuments for Scotland, to mark the bi-centenary of the publication in May 1793 of William Roy's *The Military Antiquities of the Romans in North Britain*. The meeting was held in a room which contained an exhibition first mounted in 1991, 'Mapping the Monuments', showing how archaeological monuments came to be represented on OS maps, and how this process is undertaken today by RCAHMS. The proceedings started with

'Fit for a king and a pope'

by Mrs Yolande Hodson, F.S.A., Chairman of the Charles Close Society, which described Roy's archaeological work. Roy began work circa 1752, whilst working on the Military Survey of Scotland. His earliest known plan is of the Roman camp by the River Esk, at 1:36,000 (1 inch to 1000 yards), which was the scale of the main survey. As well as mapping antiquities as he surveyed, Roy also recorded antiquities in districts mapped before 1752, such as Dalginross temporary camp, surveyed in 1755. By that time Roy had made the acquaintance of Captain Robert Melville, who explained the difference between temporary and permanent camps. Dalginross was mapped at 1:6000, (observe the exact multiple of 1:36,000), and Roy called the work a 'Plan', i.e. it was carefully measured, whereas a 'Sketch' would be made by eye. The new survey at Dalginross was used to revise the fair-drawn version of the military survey, by carefully scraping away the old detail and redrawing on top.

There followed a slide of Roy's mapping of Ardoch (of which more later), likewise mapped at 1:6000, with another plan at 1:1200; these were compared with a modern air photographs, which brought out the high quality of Roy's work. The colours used corresponded with those used for the military survey. Whilst no further work was done on the Military Survey after 1755, Roy undertook further antiquity mapping in Scotland between 1764 and 1771. He then started to assemble a publication, which had not been his original scheme. This work included compiling a general map of Scotland showing the various sites which he had mapped, a copy of these map being presented to King George III in 1774. Roy used his duplicate set of these maps as a basis for *The Military Antiquities*.

Roy died in 1790. On 11 April 1791 the Society of Antiquaries decided to publish the *Military Antiquities*. It was an expensive job; for engraving one of the plates the engraver charged thirty guineas, and the cost of paper from Whatman's was more expensive than anticipated, as it was found by experiment that a heavier weight was needed, and so a further stock had to be bought. There were 563 Fellows of the Society at this time, and the cost of the work came to about £4 per head. Copies were available free to members, unbound; to have them stitched cost 2s extra; half-bound was 4s extra. Complimentary copies went both to George III and to the Pope, the latter via a friendly channel rather than directly.

Alan Aberg, who was chairman of the proceedings, said that the remaining stock of the work was sold off in 1846, and then introduced

'Agricolomania: a Scottish antiquarian state of mind'

by Ian Brown, who began by quoting Dr Samuel Johnson as to antiquaries being rugged beings, and that therefore the audience ought to be able to survive half-an-hour without slides, as indeed they did.

For eighteenth century antiquaries, it was difficult for them to separate their study from their way of life; they 'sought to see what they wanted to see', the Roman occupation of Scotland. 'The breed was characterised by peculiar states of mind', e.g. *Agricolomania*, a term coined by David MacPherson in 1796. There was an interaction of politics, antiquarianism and nationalism, and a tendency to connect Scottish place names, etc., with Tacitus's biography of his father, Agricola. Agricola, as the noblest Roman, was to stand for all Romans: his opponents

were a metaphor for the Scots. Even today, there are residual signs of this; one can identify with the Romans on their north-west frontier.

Chalmers condemned Roy for succumbing to Agricolomania, by ascribing everything to Agricola: 'a threat of sophistry which it is time to cut for the sake of truth'. A symptom of the mania was the twisting of archaeological evidence to fit the written record; enthusiastic but unsystematic excavation was used to back up beliefs. (Several entertaining examples of this were cited.) It was characterised by a 'symptomatic strand of sentiment'; finding and elucidating sites was almost a vocation for the Agricolamaniacs. The sense of pleasure gained from direct contact with the remains of the past was one of the strongest forces in eighteenth century antiquarianism. There were misidentifications, with Bronze age remains treated as Roman.

There were two sources for the mania: interest as a result of a classical education, which was continued by the Grand Tour, and pride that Roman evidences could be found in Scotland. Scotland was proved to be in the mainstream of European civilisation. However, ultimately the Roman invasion was in vain, for the Scots had thrown off the yoke and maintained their freedom. The post-Union position of Scotland versus England was seen as Caledonia versus Rome. The necessity for Roman remains was the result of the valour of the ancient tribes, exemplified by MacPherson's observation that 'The walls do more honour to our ancestors than a thousand imaginary kings.' Against this, the price of a Scottish connection with the classical world was conquest. There was ambivalence between Scottishness and Britishness; sentiment favoured Scottishness, until the chips were down with the rebellion of 1745-6, when the unionists declared themselves North Britons. Sentimentalism gave way to hard events, and Agricola became the Duke of Cumberland; the pacification after 1746 had obvious parallels with Roman victory in Scotland.

This was followed by

'Natural Curiosities and Antiquities'

by Katrina Appleby, which discussed the depiction of monuments on early maps of Scotland. The Ordnance Survey was 'nearly unique' (sic) in mapping monuments in plan, rather than by merely recording their location. Why?

It started with Timothy Pont, whose maps of circa 1600 were published half a century later by Bleau, following some editing. Many maps were conceived privately, and give an insight into their patrons: for example, the mapping of Orkney in 1766, in advance of its sale, which depicts chambered tombs. Which were the new surveys, and which the reused? The 1790 map of Shetland derived in fact from Bleau, i.e. from Pont. Alexander Gordon had access to Robert Adair's papers, and may have plagiarised them, as Adair had more enthusiasm for writing than for publishing. He collected information in a remarkably similar manner to that of the early OS name books.

The Pont-Bleau maps record over 20,000 place names. The most notable archeological features shown are the two in Shetland, where Pont was sent circa 1592 to survey for minerals. Two standing stones are shown near Forres, only one of which now remains; Ainslie's late eighteenth century mapping contains questionable and contradictory information about these. Adair's mapping in the late seventeenth century is the first significant cartographic collection of Scottish antiquities, although his mapping is erratic: he shows the fort at Ardoch, but nothing of the Antonine Wall. On the other hand, he shows Ardoch before a road was driven across the site

early in the new century. Sir Robert Shyll, a noted antiquary of the early eighteenth century, did little archaeological work.

Admiralty charts only record what can be seen from a ship, but in fact they include some 'new' remains, as exemplified by a photograph of remains in Lewis, taken by Captain Thomas in the early 1850s. Roman remains were recorded increasingly during the eighteenth century, sometimes posthumously, e.g. Arthur's Oven, a stone igloo destroyed in 1743, but later drawn by William Roy. The first detailed map of the Antonine wall to be published, in 1777, was by Nimmo, in his history of Stirlingshire, but it was based on a 1745 survey. The growth of tourism led to a corresponding growth in the description of antiquities, though often with questionable interpretation and understanding. Scobie's map of Perthshire, published in 1783, is notable for its depiction of hill forts. Ainslie's map of Scotland of 1789 was the best map of Scotland then available, and includes the wall, roman roads, camps and other remains. However, the explosion of map-making in the late eighteenth century only benefited the southern half of the country. Roy's recording was less extensive than was that of others, but his distinctiveness is the high quality of his surveys. There was a significant increase in quantity on the first OS maps, but with a sacrifice of artistry to objectivity.

Diana Murray presented

'Mud on his boots? Roy's field observations'

which sought to look at Roy's approach to the survey of antiquities, and his relevance to contemporary and modern studies. When he was born in 1726 archaeology was in its infancy, and only a minority of antiquaries bothered with field observation. In 1754 Roy met Melville, who instructed him in the appearance of Roman remains on the ground. There was nothing exceptional in Roy's techniques or style, which were used for military mapping elsewhere, though his execution was very good.

Roy's maps do not suffer in generalisation, as they had presumably been generalised as they were surveyed. The RCAHMS is now surveying landscapes shown on early OS sheets; Roy's mapping shows the extent of cultivation, and the less visible remains of antiquities by dotted lines. However, there can sometimes be interpretation problems; for example, are avenues of trees in parks representative of reality, or merely conventional? Were there indeed trees round the fort at Kirkintilloch? There can be differences in points of detail between copies of Roy's maps, for example as to how many fields are shown. Some of the surveying was by pacing, but Roy's pacing seems pretty accurate; he called the paced work 'sketches'. To make comparisons of cities, Roy draws them at the same scale. It will be interesting to see if the field patterns which he shows are verified by air photography. He uses this technique along the Antonine Wall, and to compare Dalginross with a fort on Pickering Moor.

Roy was not satisfied with his early work, which did not show enough of the landscape context. He was completely captured by the idea that Roman camps should still exist, though a lot of people still feel the same today. At Grassy Banks only air photographs serve to verify Roy's work, but at Ardoch the earthworks remain in a good state. However, different versions of his maps of Ardoch show different field layouts. Roy recognised certain monuments as non-Roman and sometimes mapped them, but he had little sense of chronology, and assumed that the Romans would do a better job than the British; he subscribed to the idea that nothing could survive without the hand of Rome upon it. In other words, his interpretation defied his field eye.

Roy gained as good a knowledge as possible at that time of North Britain; he believed there was no substitute for field-walking. 'It's clear that he was no stranger to mud on his boots.'

Further consideration of mud came with

'Roy's Roman sites revisited'

by Dr Gordon Maxwell, who described himself as a confessed Agricolamaniac, who had admired Roy ever since first becoming interested in Roman Britain. He considered aspects of Roy's philosophy and methods, and the subsequent growth of Roman studies and the use of his work. He felt that Roy is much praised, but that his work is not put to much use. Roy used the term 'North Britain' rather than Scotland: an important point.

One great advantage that Roy had was that he was a soldier, going over ground which had been fought over again and again; at the same time he had the same sense of discovery as his contemporary Captain Cook. O.G.S. Crawford was a lineal successor. The 18th century discoveries were not paralleled until the aeroplane came along - which was cheating! Slides of the marches of Agricola (AD. 139-42) and Severus (208-12) showed how the Roman occupation of Scotland was pushed further and further north. Later, roads which crossed Roman remains, as at Ardoch, tended to go through existing gaps in the ramparts. This became apparent in comparing Roy's mapping of Ardoch with a modern air photography by Dr J.K. St Joseph, as did Roy's accuracy in showing the 'tailing in' of the ditches towards the gates. At Invergowrie the 'rig' farming stopping short shows the size of the extant remains in the eighteenth century, which are now only a cropmark. Those bitten by the same bug as Roy can continue his work.

Dr Maxwell concluded by saying that Roy is on a pedestal at the moment, and we need either to get up there with him, or get him down and use him.

There was unfortunately no time for questions afterwards, but in concluding the meeting Alan Aberg observed that O.G.S. Crawford said that modern archaeological work began with Roy. That *The Military Antiquities of the Romans in North Britain* retained its value for 150 years proves the value of thorough fieldwork and careful recording. After a somewhat hurried lunch, about twenty of us made

An excursion to Ardoch fort,

near Dunblane, Perthshire, (NN 840103), under the guidance of David Breeze. Actually, the entertainment began as soon as the coach drove away from the R.C.A.H.M.S., as Mr Breeze described the various Roman remains along the way, including bits of the Antonine wall. The fort proper at Ardoch is in a remarkable state of preservation, (despite being cut by one of General Wade's military roads, now the A.822), but the complex also includes seven other temporary camps of various dates, now not all visible on the ground. The weather was not notably clement (several members of the party gave up early and made for the Braco hotel and tea), but standing on the earthworks of the fort one had a most striking sense of being on the north-west frontier of the Roman empire, at the edge of things. (What cohorts I Hispanorum, a regiment raised in Spain and stationed here for a time, had to say can only be guessed at.) Mr Breeze showed great energy in running up and down the earthworks, so as to turn lumps of soil and turf into orderly structures. The remains at Ardoch include the most northerly readily visible piece of Roman road in the world.

Mud on their boots, damp in their socks, and rain on their faces: rather moist and wind-blown, cartographic visitors at the east entrance to Braco fort, comparing William Roy's version with the reality, 14 May, 1993.

(Photo by Richard Oliver)

In the evening seventeen members of the Society dined at an Italian restaurant (partly Scots staff), and amused themselves by connecting the numbers of the items on the menu with OS one-inch sheet names: thus 140 might be variously Llandoverly, Weymouth or Burton-on-Trent. The ex-editor of Sheetlines decided to remind the company that he had briefly been a respectable person and had worked in a bank, and calculated the division of the bill. (We understand that the Society's present Treasurer will not be losing his job.)

Upon the morrow, (the 15th, for those following the story closely), was

The Annual General Meeting

which drew forth several members who had been able to resist the delights of ignorance, archaeology indoors (coffee on one's biscuits), being frozen on a defunct frontier and trying to fit as many sheet names as possible to a given number. The meeting was held at the R.C.A.H.M.S., by courtesy of Diana Murray. The main attraction in the morning was a talk on

The records of John Bartholemew and Son

by Ken Winch, who is the company's librarian; formerly he was employed by Stanford's and Cambridge University Library. The firm is in its 167th year, having been founded in 1826; the now defunct firm of W. and A.K. Johnston was slightly older, having been founded on Christmas Day 1825. George Bartholemew, the father of the founder, was a trained engraver. His son John (1805-1861) set up on his own as an engraver in 1826; his first map was a Post Office map of Edinburgh. John Bartholemew junior took over in 1859; he also had trained as a draughtsman and engraver, spending two years in London with G.A. Petha. He introduced lithography and the capability of printing. By this time the firm included brother Henry and about twenty staff.

From 1870 the firm shared a building with A. and C. Black, the publishers, and the 'reduced Ordnance maps' started to appear.

John George Bartholemew took over in 1888. He brought a more 'academic' approach to the business, and created the Edinburgh Geographical Institute. He typified the Bartholemew approach, of attention to detail and accuracy. The firm was now publishing under its own name. The firm moved to its present premises in Duncan Street in 1911, and re-erected there the front of the old family house at Falconhall, which was being demolished. J.G. Bartholemew died in 1920 in Portugal, whence he had gone for his health. He was followed by another John, known otherwise as 'Captain Ian', who had trained in Leipzig, and who saw the completion of his father's favorite project, the Times Atlas. The three sons, Peter, Robert and John entered the business after World War II; John Bartholemew trained with Eduard Imhof. In 1968 the brothers engaged a professional manager and sales and personnel directors. As the brothers nearer retirement, and no-one new was coming into the business, the firm was sold to Readers Digest in 1980, to News International in 1985 and to Harper Collins in 1989.

The 'watershed date' for the company's records is 1877; before that they are rather incomplete. In that year the firm started to record publications by putting them into large folio volumes, with the date of printing, and the quantity run off. There then followed slides showing the range of the firm's work, as recorded in these books: the Bathymetrical Survey of the Freshwater Lochs of Scotland; an Isochronic Distance Chart of 1906, a type of map which J.G. Bartholemew loved; an Atlas of Zoogeography; Means of Traffic (ranging from railways to Human Carriage), ('it must have been great fun to compile these maps'); a chronological map of Edinburgh, 1911; and the current edition of the Times Atlas, showing eastern Europe. The compilation and revision of the last was illustrated by a slide showing how this is done by marking corrections on a transparent overlay sheet; name changes in Russia are 'quite a headache at the present time'. The slides included catalogues and covers; the former were decorative, the latter were not.

A sequence of ledgers running from circa 1868 to 1964 record on the left side the work done and on the right the financial aspect; thus they record the work undertaken between 1939 and 1945 for the Ordnance Survey. There are also production record books, which give the actual costings for the various processes; for example, 10,000 copies each of two OS one-inch sheets of Scotland in 1941 cost a total of £194:9:5. Examples were also shown of how the printing history of various maps might be reconstructed. From this, it is apparent that the Bartholemew materials for carto-bibliographers are much better than they are for most OS series, and it is to be hoped that it will not be long before we have a carto-bibliography of the Bartholemew half-inch at least as good as those which have been prepared for the later versions of the OS one-inch.

Various colour schemes were tried for the half-inch series, and in the 1890s the firm undertook experimental colour work for the OS. The half-inch map, being 'reduced Ordnance' was of course of concern to the OS; the copyright law of 1888 was largely ignored by map publishers. In 1892 the Departmental ('Dorington') Committee on the Ordnance Survey felt that if OS mapping was used by commercial firms there should be differences, e.g. of scale. A warning was published in the London Gazette in 1901 that the words 'Ordnance Survey' should not be used in titles of commercial maps; at this time Bartholemew's were supplying the half-inch map in large quantities to the War Office. The outcome of this tangle was the OS half-inch and no more orders for Bartholemew's maps from the War Office. (It may be added parenthetically here that from this time onwards Bartholemews relied mainly on non-OS sources for revising the half-inch series, including the Cyclists Touring Club between the 1900s and early

1920s, and that by this means the 1:100,000 'National' series, published in the 1970s, was able to dispense with any acknowledgment to the OS.) From 1914 the competition with the OS hotted up.

There followed slides showing the compilation and draughting processes. Nowadays much of the information is held on a computerised database. The firm still has about 4000 copper plates, including those for the half-inch, and sent in from outside to print from which were never returned. The plates stand in shelves, in packets with a proof on the front. There is not a lot in writing about the various drawing and printing processes.

In the ensuing discussion, it was stated that the file copies of the maps are in the map room of the National Library of Scotland; some financial records are in the Department of Manuscripts of NLS. At present, Bartholemew retain the production ledgers and the main financial ledgers. The NLS map room also has some half-inch proofs of the 1950s and some glass plates of the 1950s and 1960s; it is hoped that by 1996 NLS will have the space to work on the archive properly. When he visited recently, James Akerman of the Newberry Library, Chicago, who is working on twentieth century road maps, said that the Bartholemew archive is by far the best of its sort which he has seen.

The business part of the Annual General Meeting next followed. There was a tribute to Mike Miller, who had resigned from the Society's Committee on 31 March and died on Good Friday (9 April), aged 55. He was a connoisseur of vintage cars as well as of maps, and several members found him to be a most considerate and courteous and unfussy friend. More cheerfully, Wilbur Cooke, who has been a member of the Society since shortly after its formation, and who has given much assistance 'behind the scenes', was elected an honorary member. As a schoolboy at Marlborough, he was one of the volunteers who worked on the first Land Utilisation Survey; as a checker, he had to edge-match six-inch field sheets, and reconcile fields which had different classifications on adjoining sheets.

The minutes of the Annual General Meeting are included with this issue of *Sheetlines*.

After lunch there followed the customary map mart, the high or low point of which (according to taste) was the auction of the maps presented by Ordnance Survey to Her Majesty the Queen and His Royal Highness the Duke of Edinburgh on the occasion of the OS bicentenary celebrations at the Tower of London in June 1991. Only about ten copies of each had been printed, and through the kind offices of John Paddy Browne one copy of each had been obtained for the Charles Close Society. The Queen's map was merely a reproduction of the hachured six-inch sheet covering Balmoral of 1870, with an engraving of the Castle inserted in one corner; the original of the engraving was included with the map. The Duke's map, at 1:5000 scale (a triviality not stated on the map), was specially revised and digitised from 1:2500 and 1:10,000 material, and printed in colours, at a cost of about £35,000. Alan Godfrey, temporarily reverting from the role of map publisher to that of map seller, acted as auctioneer. The Queen's map was knocked down to Mike Cotterell for £80. The auction of the Duke's map was more interesting; after the bidding had reached £100 or so, the only two bidders were Mike Cotterell and Margaret Wilkes, on behalf of the National Library of Scotland. Eventually the NLS won, at a cost of £590.

Thus ended both the 'Edinburgh three day event' and the Charles Close Society Annual General Meeting for another year. We from the south are always glad to meet 'the Edinburgh crowd', but we are particularly appreciative this year of the facilities provided by Diana Murray and the Royal Commission for Ancient and Historical Monuments for Scotland.

'Viator'

The CCS AGM at Edinburgh, 15 May, 1993, with David Archer holding the Queen's Map, Yolande Hodson holding the original of the engraving reproduced thereon and Alan Godfrey about to act as the auctioneer. The Duke's map is displayed on the table.

Margaret Wilkes about to claim the successful acquisition of the Duke's map for the NLS, Peter Milne (a familiar face to users of the NLS map room) and Diana Murray, to whom the Society is indebted for the use of the RCAHMS premises for the AGM.

(Photos by Richard Oliver)

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New Maps and Notes

Ordnance Survey of Great Britain

New publications between 1 January and 30 April 1993 included:

1:25,000 *Outdoor Leisure* maps: Exmoor, (edition A).

1:50,000 *Landranger* (Second Series): Sheets 96, 133, 134, 179, 193.

Travelmaster series: Sheet 1 (1:625,000 Route planning map) and Sheets 2-9 (1:250,000, except for Orkney at Shetland at reduced scale), (all Edition A).

Landranger Gazetteer of Great Britain, 3rd edition.

Ordnance Survey of Ireland

1:50,000 series, Provisional Edition: 6, Letterkenny.

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Ordnance Survey of Ireland 1:50,000 programme

The Society is indebted to John Taylor for elucidating the proposals for publication over the next twelve months. Provisional editions of Sheets 1, 2, 3, 10, 11, 30, 31, 37, 38 and 75 and the final edition of Sheet 56 are due to appear by the end of 1993, and provisional editions of Sheets 44, 45, 49, 50, 83, 84 and 85 and a 1:25,000 sheet, '51A', of the Aran Islands by the end of June 1994. The eighteen sheets covering Northern Ireland and adjacent parts of the Republic were published by the Ordnance Survey of Northern Ireland between 1978 and 1985; eight sheets (6, 16, 25, 54, 56, 70, 71, 79) of the Republic have been published in provisional form and one (78) in final form. Hitherto roads in the Republic of Ireland have been shown uncased, and those in Northern Ireland cased; it has now been decided that all roads will be shown cased. For the 'final edition' sheets a new cover has been designed, by means of a competition at Dublin Art College; it features a purple ground, yellow lettering and colour photograph.

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The Godfrey Edition

In April to June 1993 coverage was extended to the following: Bathgate; Batley; Bletchley; Fenny Stratford; Hyde, Cheshire; Linlithgow; Morley (Yorks, WR); Morpeth (with NS-3-O on the reverse); Newport Pagnell; Sidcup; Stoke upon Trent; Trowbridge; Weymouth; Wolverhampton.

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The Coastal Zone map project

Reference was made in Sheetlines 36 to the 1:25,000 pilot sheet of part of the Solent. This was in fact preceded by a 1:30,000 A3-sized extract covering Langstone Harbour and Hayling Island, which carries a note (not present on the full-size prototype successor), 'Some of the detail is not authentic, having been included purely for sampling purposes'. John King writes to point out that the inauthentic detail includes the Hayling Island railway, closed in November 1963!! More subtle are the addition of several names, and the extension of the dual carriageway on the A2030.

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Exmoor, (Outdoor Leisure Map 9), edition A, Southampton, Ordnance Survey. 1993, ISBN 0-319-26043-7.

I strongly support the retention of the 1:25,000; I am strongly in favour of large sheets.

An organic development of the standard OS small-scale colour scheme, which can be traced back to the One-inch Popular Edition, is always welcome.

I LOATHE back-to-back mapping.

O me miserum.

I have hitherto resisted the Outdoor Leisure maps for two reasons. One is that I buy 1:25,000 sheets primarily for use out of doors, and only need them for certain parts of England

which happen to be covered by the ordinary Pathfinders. The other is that so many of them are published in back-to-back form. I don't know when I first encountered a back to back map: it may have been a Daily Mail map of south-eastern England of circa 1952, which had a map of the London area on the reverse. The torture was rendered exquisite by the use of what may be termed a semi- Michelin fold, with two horizontal folds rather than one. If you saw the cover you would realise why I have never been as critical as some of the cover for the OS Half-inch Ministry of Transport map (H14), and it makes that old misery on Ellis Martin's cover for the Quarter-Inch Fourth Edition (H27) look almost cheerful. An unpleasant cocktail, and it may have created unpleasant associations in my nine-year-old mind, in the same way that a certain well-known green-covered road atlas will ever be associated with youthful car-sickness.

Exmoor has more pleasant cartographic associations, with Fifth Relief Sheet 119, which I encountered simultaneously with the Daily Mail horror. It is open to question whether the new map can claim direct stylistic decent from the Fifth Relief, but it would certainly be worth putting beside it in a comparative exhibition. As I mentioned briefly in Sheetlines 36, the Outdoor Leisure series was originally intended as economically-produced mapping of tourist areas, but as an outcome of experiments with a more elaborate colour scheme for the parent maps in the early 1980s, they became much more elaborate. The latest colour scheme is fundamentally that of the 1:50,000 Landrangers. but with the important addition of 'grey' for all areas outside the neat line, 'purple' for access land, a delicate 'yellow-green' ground tint and 'light brown' for unnumbered roads over 4 metres in width. (I have put the colours in quotations as they are all synthetic.) Not having kept au fait with the Outdoor Leisure maps, the light brown was a surprise to me on opening the map. I wonder whether an orange would have worked better, if only because for forty-one years brown has been the standard colour for 'B' roads, and in this context the 'light brown' roads look much more like failed aspirants top B-road status than a true intermediate between 'dark brown' and 'yellow'. On the other hand, it is a logical development of the tendency since the late 1940s to rely less on casings and more on colour to show road classifications. It would be interesting to see it tried at 1:50,000 and 1:100,000. It works here because the road pattern is not dense, but what is excellent at one scale may be very much less so at half or twice that; a good example is the use of italic for smaller village names on the Quarter-inch Fifth Series (good) and the Half-inch Second Series (unsatisfactory). The use of upright sans-serif has been criticised from some quarters, but it does solve the problem of where to make the break between upright and italic Roman, such as that neither the one nor the other predominates.

This leads me to something which is not immediately apparent when one inspects the eastern half of the map - uppermost in the back-to-back folding - in a shop. The western part of the western half has been cobbled together from early 1:25,000 Second Series sheets, in the original style of upright roman for larger and italic for smaller settlement names. Names which have had to be added or replaced are in Gill Sans. Would it have been too much trouble to have replaced these old names with Gill Sans?

The publication of Exmoor will enable four Pathfinders (1214, SS 64/74; 1215, SS 84/94; 1234, SS 63/73; 1235, SS 83/93) to be withdrawn, and it may be that four others will be replaced by two new portrait sheets (SS 43/44 and ST 03/04) so as to eliminate overlaps, though considerations of geography suggest that a large sheet, covering SS 42-44 and SS 52-54, would be of more use. Unlike the Dartmoor Outdoor Leisure map (s; another back-to-back), Exmoor covers the whole of the National Park, replacing the One-inch Seventh Series-based tourist map, first published in 1967, and the last Seventh Series mapping de facto to remain in ordinary

topographical publication. This has been made possible by a very large sheet size - 120 x 88 cm within the neatlines, or 30 x 22 km on the ground, with the legend inset in the sea on the eastern half - but not without strain; there is a most unsightly protrusion into the margin - so far that it has been 'bled off' sales copies - on the south side of the eastern half. Is it really necessary to fit the whole of the National Park in? (Come to that, are National Parks necessary? They seem in practice to be as full of quarries, military training areas, homo sapiens and general environmental abuse as everywhere else, save with more ingenious excuses for their presence.)

Like all the Outdoor Leisure Maps, Exmoor is exceptional value for money, even if you hate back-to-back mapping and buy a second copy, kept permanently refolded inside out. We hear so much about 'cost recovery' that it is to be wondered why Ordnance Survey persists in selling itself short in this way. 30 x 22 km at 1:25,000 for £4.99 is marvellous value for money. 60 x 22 km is profligate.

Richard Oliver

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Popular Edition One-Inch Map: Graphic indexes and conventional signs sheets

I am compiling, as part of my account of the Popular Edition, a listing of all the graphic indexes which were published for this series at the scale of thirty miles to an inch (1:1,900,800). So far, I have located ten different examples dating from 1920 to 1941. These examples, where they are not combined indexes showing the sheetlines of two or more series, including the Popular Edition, vary either only in the print code, or, where they have the red overprint showing either special sheets or tourist district sheets, in the special sheets shown. I wish to make this list as comprehensive as possible and would therefore be grateful if those with copies of the indexes could send me a brief note stating title, print code, and any special sheets shown.

I am conducting a similar exercise for the Characteristic Sheets, and sheets of Conventional Signs and Writing which were published as separate sheets, not just for the Popular Edition, but also for the one-inch maps of England & Wales, Ireland & Scotland, Great Britain and Ireland, and Great Britain, from about the 1860s up to and including those for the Fifth Edition. Again, I should be very grateful indeed to learn of the details of any of these which might be in private possession. **All postage will be refunded.** Y Hodson, 16 Hertford Rd, Tewin Herts AL6 OJY (Tel: 0438 717825)

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The J.B. Harley Research Fellowships in the History of Cartography

The first of the research fellowships established in memory of Professor Brian Harley, whose many activities included extensive work on the history of the Ordnance Survey, will be awarded in 1994. Either a single one-month scholarship (£800) or two two-week scholarships (£400 each) will be awarded. Applications are invited (by 1 November 1993) from those pursuing advanced research in any aspect of the history of cartography - irrespective of nationality, discipline or profession - who wish to use the resources of the London region. Preference will be given to interpretative studies. For a copy of the Fellowships Leaflet please write to: Tony Campbell (Hon. Sec.), British Library Map Library, Great Russell Street, London, WC1B 3DG.

Direct mailing

Brian Dobbie draws our attention to the circular from Stanford's illustrated below and suggests that this particular mailshot was unsuccessful, as the sheet was not returned by the recipient.

Ordnance Survey 'Organisational Change Programme'

The whole internal structure of Ordnance Survey is in the process of being completely reorganised; from 1 April 1994 it will be based on seven 'business units', each headed by a Director, who will report to the Director-General, and sit on the OS management board. 'We are finding it more and more difficult to achieve our cost recovery targets and unless we make substantial and deliberate, but considered, changes it is unlikely that we shall ever reach profitability. Our present functional and hierarchical structure, which served us well for many years, is no longer best-suited to the way we now need to do things and to creating the products and services which a volatile market will require.... The organisational changes should lead to substantial increases in revenue, through increased responsiveness to customers' needs and through improved product management.' An internal market will be created, whereby the business units will pay for the services provided for each other. 'If nobody is prepared to pay for an activity then we should not be doing it.' The numbers of management levels will be reduced, with the object of there being no more than five layers below Director-General in any business unit, the object being to 'improve vertical communication, reduce duplicated effort and speed up decision-making.' OS is still aiming for full cost recovery in 1997 and thinks that a reduced workforce of 1700 will be the optimum for this. 'However, if we find that full cost recovery is beyond our grasp, further cuts in staff numbers are unlikely to provide the solution. Indeed, they could well be counter-productive, damaging our ability to earn revenue and leading to a spiral of decline, which we are obviously determined to avoid.' 'There is no hidden agenda linking the change proposals to privatisation. We need to improve our trading performance whether or not we remain in the public sector. By improving our trading performance, we will be able to demonstrate that we know how to run a successful business, and we will have more influence over our long term future.'

The 'business units' are as follows:

External Relations, (headed by the Deputy Director General).

Data collection: *main activities*: field survey, small scales revision, photogrammetric services, survey computations, geodetic surveys, boundaries, mapping quality and contracts; *main objectives*: to keep the Topographic Database up to date, to standards agreed with the Business & Professional business unit, and collect other data for products for the Business & Professional and Consumer & Education business units.

Information Management: *main activities*: computer network and data management, computer operations, data enhancement, software work, prototype work, feasibility studies; *main objectives*: to manage the Topographic Database and other data, and to provide information technology and research and development expertise to develop products and systems for other business units.

Business and Professional Markets: *main activities*: product development and management, collaborative ventures, special products, customer servicing, copyright; *main objective*: to develop, market and supply products to customers in the business and professional markets.

Consumer and Education Markets: *main activities*: product development and management, collaborative ventures, special products, customer servicing, trade relations, printing and map stores and distribution, order processing; *main objective*: to develop, market and supply products to customers in the consumer and education markets.

Business Services: *main activities*: accounting, finance/policy, personnel, welfare, health & safety, internal audit, consultancy and internal review, offices and accommodation, library services, procurement, training, corporate design centre, exhibition centre, staff restaurant; *main objective*: to provide administrative and support services for the other business units.

Ordnance Survey International: *main activities*: projects and consultancy outside Great Britain; *main objective*: to market OS's services internationally.

There will also be a Corporate Office, with a staff of about ten, to 'support the Director General, especially on issues of broad, long-term corporate policy', and to include the Press Office. Main activities: corporate external relations, government liaison, strategic planning, corporate communications, innovation and culture, press office; main objectives: to support the Director General and management board on long-term corporate policy, and maintain the corporate image and provide external representation where not specifically associated with one business unit.

(Source: OS News 129 (April 1993), pp 3-13. Crown copyright.)

Yolande Hodson

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Visit to Whatman's paper mill, 18 June 1993

Fourteen members attended this, one of our more unusual meetings, but nonetheless one which had been particularly asked for. There was a long connection between the Ordnance Survey and Whatman's paper; it seems to have been the only paper used for manuscript drawing, until replaced by enamelled metal and plastic substitutes from the late 1930s onwards, and it was the most often used paper for printing engraved maps. Because of an excise duty on paper intended to favour British manufacturers, from 1794 onwards paper usually had the date watermarked, (slightly earlier dates are occasionally encountered), and this practice continued after the legal necessity therefor had ended.

We were given an introduction by Alan Witt, the Sales Development Manager, who has studied the paper industry generally and Whatman in particular over the years. 'Once a paper person, always a paper person'; several families have long-lasting connections with the firm.

Why is Whatman located in Maidstone? The formal paper industry developed in the 17th century and the firm can be traced back to 1740, but until the early 19th century all paper was hand made, and there was no call to consider energy needs. There are four essentials for paper-making: (1) pure water, which is still needed, hence the location in the 'Spring Field', where the firm still has its own water supplies; (2) water as motive power, (wind power was occasionally used for paper-making), which was more likely on a dammed stream than on a broad river such as the Thames; (3) raw materials; rags were available from the numerous dockyards and ports around the Kent coast; (4) proximity of markets, when transport was difficult; Kent was close to London, with its print and document market, (as was High Wycombe). James Whatman I was a fuller from Loose, a village just south of Maidstone; there were fourteen mills in the adjacent valley. He made the change to paper-making when he married the widow Harris, who had been devised the Turkey Mill on the other side of Maidstone. The building at Turkey Mill has been preserved as part of a light industrial estate; it included buildings with louvres so placed as to catch wind funnelled down the valley and thus assist in

drying the paper. 1740 was a good time to enter the paper industry, as there was a shortage, supplies from Europe having been interrupted by various small wars.

James Whatman I adopted the Flemish technique of woven rather than laid paper; laid paper has 'lines', whereas wove paper used a much finer screen. He also discovered the 'blue whitener', whereby the blue counteracts the yellow of old rags, which was used before bleaching of paper was introduced. The wove paper was taken up by the water-colourists, and in due course by documentmakers and map makers. The Turkey Mill thus became the best-known in Britain, and care has had to be taken that 'Whatman' does not degenerate from a proprietary to a generic name, like 'Hoover'. The paper was used by numerous distinguished people, including George Washington, Napoleon Bonaparte and Queen Victoria.

James Whatman I's son, James Whatman II, continued innovating. 'Antiquarian' size paper was originally produced for the Society of Antiquaries, which wished to publish an engraving of a painting of Henry VIII at the Field of the Cloth of Gold, at a size larger than any existing paper. Hitherto paper sizes had been controlled by the size of screen, which in turn was controlled by the stretch of a man's arms, in agitating the screen; for the Antiquarian size eleven people were needed to produce one sheet of paper. James Whatman II had no son, and instead took on William Balston as a paper-making apprentice; Balston eventually took over the business, which was refounded in 1837 as W. and R. Balston.

Meanwhile, James Watt had invented the steam engine, and sold the idea of steam power to Balston. The Springfield mill, built 1805-7, was the first steam paper mill in the world; although it adjoined the Medway, this was used only for transport (pulp still entered this way until quite recently), but not for motive power. The new mill included a very large 'laboratory', and was the largest hand-made paper mill in the world. It was a state-of-the-art mill when it was built, with very large windows. The administrative block was formerly the rag-picking room, and still has a 6-7ft pulley-wheel on the ceiling which was used to haul the rags up from below. The present Sales Director's mother worked in this room as a rag-picker, and he's proud of it.

Until World War I most laboratory filter papers were made in Germany. The supply was abruptly cut off in 1914, and Whatman stepped in, with the result that now every laboratory in the world uses Whatman filter papers; though other papers are used, Whatman paper is the norm, especially for a crucial test. Whatman started producing machine-made paper in 1931. In 1945 hand-made paper was still being produced in quantity, but had the firm continued on this course it would probably have passed into history; in the last thirty years about three-quarters of the names and mills have disappeared, due to rationalisation. That Whatman is the only one out of 28 paper mills left in Maidstone is because Hugh Balston looked for new activities for the company, such as various scientific-use papers, including chromatic paper for photography. The company 'went public' in 1974, and has offices in several counties, although all the paper continues to be made at Springfield Mill. This includes a small quantity of artist's paper, machine-made, as has been all the paper since the 1950s. No rags are used now; cotton linter is used instead, from the second cutting of the crop, (the first being used for textiles). Wood pulp is stronger than linter, though it doesn't have the archival properties. Other substances, notably glass fibre, are used for filter products. The only paper makers who can survive in this country are those who can use secondary fibres: 'It's a big boy's world.'

There are three basic methods of paper-making:

(1) By hand: a tray-mould is dipped into the fibre and the paper-makers agitate the tray; the quality depends on the agitation. The size of the paper is limited by the largest tray which can be held between outstretched hands.

(2) The Foudrinier process, invented circa 1802, which was the first machine process, and in essence continues in use today. It involves a continuously moving web, the 'wire', onto which the mix of fibres comes down; the paper forms at the end, and then passes successively into a press and then into a drier. In this method the fibres form in one direction, and the paper will tend, like newsprint, to tear in one direction.

(3) The cylinder-mould machine: this works by forming the paper under the cylinder. As a result the fibres spread more evenly, and it is more useful for scientific purposes than is Foudrinier paper. It is regarded as more 'old fashioned' than the Foudrinier process, although it was devised slightly later, circa 1805.

Both the Foudrinier and cylinder-mould processes were anticipated by a Mr Donkin, who was machine-making paper at Dartford somewhat earlier.

Whatman now specialise in products which call for a small volume of production and a high level of customer servicing. Thus it describes its business as 'filtration, purification and analysis'. The firm's new cylinder-mould machine cost £4M, but a really big one, with a capacity of 2000 metres a minute, 10 metres wide, would cost £100M or so. Most mills will produce 5 to 10 tons as a minimum; Whatman are prepared to do 25 kg, though it doesn't come cheap!

Roger Harrop then gave further explanations, before he and Elaine Kelly guided us round the mill. The firm employs about 500 in the United Kingdom, and has three other sites in Maidstone. 85 per cent of the output is exported, 65 per cent going to the United States. The firm has another 300 employees in the U.S.A. and 50 more elsewhere in the world. Only 40 are actually making paper; four shifts are worked, so only ten workers are 'on' at any one time. The process is theoretically continuous, though in practice each machine is shut down every other weekend for maintenance and to enable different papers to be produced; this minimises the losses due to 'start-up'.

The tour of the mill then followed. It is rather unusual in that most of the buildings are 'listed' and thus cannot be altered externally; although it might be thought better to move elsewhere, putting modern equipment into old buildings proves the lesser of two evils. There are four large paper-making machines, named after Royal dukes: Edinburgh, Cornwall, York and Kent. Being Friday afternoon, the machines were not running at full capacity, although, from the visitor's point of view, that was perhaps an advantage rather than otherwise, because of the noise and heat! At the conclusion of the tour we were presented with packets of watercolor paper.

The Society is most grateful to Whatman's for enabling the visit to take place. It is also most grateful to Terry and Mrs Wickett for providing tea and cartographic entertainment afterwards.

'Viator'

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Major Colby and Mr Edgeworth

by J.H.Andrews

Thomas Colby was so seldom noticed by contemporary writers other than his brother officers that even the most transient personal impressions of him seem worth publishing. One small group of references, hitherto almost entirely unknown, occurs in the diary of William Edgeworth (1794-1829), the only Irish surveyor known to Colby before the Ordnance Survey began its mapping of Ireland in 1824. William was the son of the well known polymath Richard Lovell Edgeworth and a half brother of the novelist Maria Edgeworth. He began his professional career by assisting his father in the official Irish bog surveys of 1809-14. Later he worked on county maps of Longford and Roscommon, both of them incorporating accurate trigonometrical controls and published with appropriate triangulation diagrams. By this time William had emerged as one of the two or three most scientifically minded of all Irish surveyors, his ambition being to measure a degree of latitude for his 'fame and amusement'¹. Reconciling such high hopes with the need to earn his keep may have aggravated the nervous breakdown that left him professionally inactive from 1818 to 1820. As a therapeutic measure he undertook a long excursion in continental Europe, pursuing his studies as an engineer and also keeping a diary which is now in the National Library of Ireland.² The climax of this tour was William's purchase of an eight-inch repeating theodolite from the Munich instrument maker Georg Reichenbach.

Returning to London in July 1822, William was declared 'much improved by his tour in mind, person and manners'. At this point his story was briefly taken up by Maria Edgeworth writing from Co. Longford:

William is not coming home.... Captain Kater has invited him to accompany him on a survey in which it is professionally honourable to him though not lucrative to be engaged, in going over General Roy's observations to connect the observatories of Greenwich and Paris.³

Captain Henry Kater, a family friend, was resident commissioner of the British board of longitude. Major Colby, his colleague in the Royal Society's new Greenwich-Paris operation, was not yet known to the Edgeworths and for several days the diary spelt his name 'Coleby'. However, after one meeting (on 1 August) William pronounced the major 'an excellent man'. Together with James Gardner of the Ordnance Survey, Kater and Colby were about to start a second season of field work in Middlesex, Sussex, Kent and Surrey, using the three-foot

¹ J.H.Andrews, *Plantation acres: an historical study of the Irish land surveyor and his maps* (Belfast, 1985), p 265

² National Library of Ireland, Dublin, MS14124. The diary runs from 1821 to 1824. Apart from passages relating to Colby considered in this paper it contains a number of brief references to non-Ordnance Survey cartography and goeodesy, both in Ireland and on the continent.

³ Maria Edgeworth to Mrs Ruxton, 2 August 1822, Bodleian Library, Oxford, Edgeworth papers, C.717, f.124. I am indebted to Mrs Christina Colvin for guiding me to this source. Here, and in subsequent quotations, spelling and punctuation are modernised and contractions extended. Roy's triangulation on behalf of the Royal Society had been described in the Society's *Philosophical Transactions* lxxx (1790).

theodolite made by Jesse Ramsden for the Royal Society. In due course the entire proceedings were to be described at length in Kater's report to the society.⁴

William's main motive for participating in the Greenwich-Paris operation was to test the Reichenbach theodolite against Ramsden's by observing the same signals from the same points and his opportunity came when the party resumed work on 13 August at Hanger Hill, later moving successively to Fairlight, Folkestone, Tolsford, Stede Hill, Crowborough, Leith Hill and Wrotham, with a few short intervals in London. Occasionally William's diary records an actual measurement in degrees, minutes and seconds, but its general tone is unceremonious and non-technical. Unfortunately it is also terse to the point of unquotability. The following sample entry from Stede Hill ranks well above the average in this respect:

13th [September, 1822]. Rained hard in the night but after breakfast clear. Mr Gardner observed with great care Crowborough and Wrotham with my instrument, I reading the opposite vernier and Major Colby writing. Repeated 5 times, agreed within +2".3 of the great theodolite. Dinner. 5 times again, agreed within +1".2. But as we were finishing a round with Tolsford found that the staff was not to be seen with my telescope. Captain Kater took once the same angle but was -5".4. He went to drink tea and sing and I determined to go to London with Major Colby. Packed up, drank tea, took leave of the boys and drove to Maidstone in post chaise. Bed by 12.

Besides describing the theodolite observations, William comments briefly on travel arrangements, meals and accommodation, and visits from inquisitive spectators. Leisure activities were few. They included a walk round Hastings (an 'ugly little fishing town though placed in a pretty valley'), a visit to a play called 'The Vampire' staged at The Hare and Hounds in the same town, and a little socialising with local residents, like Kater's musical tea party in the foregoing extract. The work was hard and long, but very much at the mercy of the weather. Apart from reading horizontal and vertical angles and 'writing' (or 'booking' as later observers would have called it), the technical operations described were setting up and adjusting the instruments, marking stations, observing the sun and pole star, comparing astronomical and chronometric time, and making a variety of calculations. A high spot of the proceedings came at Fairlight when Kater discovered the exact site used by his predecessor. It was commemorated by the burial of a millstone inscribed 'Roy's Station', thus necessitating a correlative inscription 'Station of 1821' for the point adopted by Kater's party.⁵ Both stones are sketched in the diary.

One weakness of William's record is that it does not always make clear which theodolite was being used at any given time or who was using it, but cumulatively the entries show that although none of his readings contributed to the final results he took a share in all the tasks performed by Kater, Colby and Gardner. Technically, his most important achievement was to

⁴ Henry Kater, 'an account of trigonometrical operations in the years 1821, 1822, and 1823, for determining the difference in longitude between the Royal Observatories of Paris and Greenwich', *Philosophical Transactions of the Royal Society of London*, cxviii (1828), pp 153-239. (On page 157 of this report 'October' should obviously read 'August'.) The Royal Society's theodolite was destroyed during the second world war. For help with the technical aspects of Kater's work I am indebted to Ms Jane Insley of the Science Museum, London.

⁵ A reference to this episode by Yolande Hodson appears to be the only previous map-historical citation of Edgeworth's diary (Introduction, *Facsimile of the Ordnance Surveyors' drawings of the London area, 1799-1808*, London Topographical Society, publication no. 144, 1991, note 20.)

devise a mirror which directed sunlight or moonlight from one station to another on the principle of the heliostat (though the diary does not use this word), and his most surprising remark about the proceedings, on 27 August, was that 'Mr Gardner and Major Colby had taken angles early by which it appeared that by using the two opposite microscopes only it gave just the same results and in less time'. This provided a sidelight on Kater's attempt to reduce errors of division by increasing the number of microscopes on the theodolite circle from two to five.

William's last day in the field was 17 October. Altogether his presence had coincided with Colby's for an aggregate of about six weeks. They also met several times in London. Throughout this period Colby's image of 'excellence' remained untarnished. In London he accompanied William on various missions where his status as head of the Ordnance Survey could smooth the younger man's path. He offered to arrange a year's loan of an Ordnance Survey theodolite to William's friend Dr John Brinkley, director of the observatory at Dunsink near Dublin. He was constantly solicitous about William's delicate health, on one occasion giving him the more comfortable of the only two available beds. He also took part in testing Reichenbach's theodolite. Here the key entry comes at Folkestone on 31 August:

Up at 4.45. Took the stand and, I carrying the instrument to the station, the legs would just come on the stone. Began to take angles between Calais, Fairlight, Tolsford, Dover and round to Calais, Major [Colby] writing for my repeating till 8 from before 6. Repeated each 12 times. Home to breakfast. Tried how they agreed with each other and with 360 degrees so as to surprise the major with their accuracy, and except one mistake in the latter part of the angle between Dover and Calais the four angles made 360.0.0.19. My friend more pleased than I.

Colby's last act of friendship followed a rather less happy encounter with Kater in London:

Called on Captain Kater, found him at home at last, but looking dreadfully out of sorts - took me downstairs and told me that my way with them, giving my opinion etc., not only hurt him, but offended Gardner and even Colby, and he was determined to tell me so that it might be of use to me in future.

It was imperceptive of William not to have noticed Kater's resentment, in which the issue of the theodolite microscopes may conceivably have played some part. But next day Colby disclaimed any feeling of annoyance, invited his apologetic visitor to breakfast, behaved entirely as usual, and finally 'took a most kind leave'. In one respect this meeting did little good, for it was Kater who wrote the 86 page report published by the Royal Society - without a single reference to William Edgeworth. So ended an Irishman's experience of British geodesy.⁶

In some ways the Edgeworth diary encapsulates the relationship of Colby's department to its civilian competitors. Strictly speaking, as Kater was at pains to emphasise, the London-Paris connection formed no part of the Ordnance Survey. But it was sponsored by the master general of the Ordnance, made use of Ordnance Survey personnel and carried out the Survey's

⁶ The only later reference to the Ordnance Survey in the diary was on 29 September 1822 in Anglesey when William met [Robert] Dawson, who had 'come out to make some corrections in his map since the new road [to Holyhead] had been made'. In the course of this encounter Dawson told Edgeworth that he had a place for a young surveyor at three shillings a day retaining fee with a prospect of earning nearly two hundred pounds a year.

fundamental task of triangulation to similar standards of accuracy. (It is also described at some length in the Survey's official history.)⁷ Certainly Kater's rebuke to Edgeworth expressed what is often thought to have been the department's long standing view of private surveyors. Edgeworth, too, was typical of his own peer group. Unintimidated by the soldiers, apart from the deference of a younger to an older generation, he evidently had no hesitation in 'giving his opinion', and it was in the spirit of a standard-bearer that he planted his theodolite on the same territory, indeed on the same points. He accepted Ramsden's instrument as a test of accuracy but considered himself vindicated by the results, and with a Reichenbach theodolite felt ready to triangulate the whole of Ireland. He can hardly have expected to earn an official salary in this capacity, however, and we know that in July 1822 his professional aspirations went no further than 'engineering employment in Ireland'. But he may well have cherished hopes of some government support for his own geodetic proposals as described in an optimistic memorandum written before the end of the same year.⁸

Seen in retrospect William's ambitions were doomed from the start. Even before he first met Colby the extension of the British trigonometrical survey to Ireland was being discussed by the board of ordnance and the admiralty.⁹ News of their deliberations may well have spread outside official circles. Indeed the government's decision must have been foreseeable as a matter of common sense and it may be significant that another attempt at a private trigonometrical survey of Ireland, by Richard Griffith, had effectively lapsed in 1821.¹⁰ How much the Survey's officers knew about their own cross-channel future in the summer of 1822 is a matter for speculation. The Edgeworth diary could perhaps be seen as negative evidence that the matter had not yet been seriously considered within the department, and one certainly gets the impression from other sources that Colby was slow in turning his mind to Ireland. William's ignorance on the subject is explained by his long stay abroad, but by 1823 even he could see what was coming. Later he admitted having made no 'large surveys' after returning to Ireland, which meant that the Reichenbach theodolite was never put to its intended use. The rest of his short career was monopolised by civil engineering, mainly road construction.

⁷ W.A.Seymour (ed), *A history of the Ordnance Survey* (Folkestone, 1980), pp 40-42. Seymour cites David S. MacMillan, *The Kater family 1750-1965* (Sydney, 1966), but this work is almost entirely devoid of geodetic or cartographic interest. It does, however, praise Henry Kater as lively-minded and sociable (p 18).

⁸ 'Letter from William Edgeworth, Esq., civil engineer, to Alexander Nimmo, Esq., civil engineer, M.I.R.A., communicated by Mr Nimmo. Read January 1st, 1823', *Royal Irish Academic Transactions*, xiv (1825), p 63, reprinted in *Report from the select committee on the survey and valuation of Ireland*, pp 106-7, H.C. 1824 (445), viii.

⁹ J.H.Andrews, *A paper landscape: the Ordnance Survey in the nineteenth century Ireland* (Oxford, 1975), p 13. As Edgeworth knew, the Ordnance Survey had already observed a number of Irish stations from points in Scotland, but this could be regarded as part of the British triangulation.

¹⁰ G.L.Herries Davies, *Sheets of many colours; the mapping of Ireland's rocks, 1750-1890*, (Dublin, 1983), p 48

Additions and Corrections

There is an addendum to be made to Roger Hellyer's *The editions and printings of the Ordnance survey of Great Britain Quarter Inch Fifth series (1:250,000), 1957-1978* which is published in this edition of *Sheetlines*:

Military and aviation issues

GSGS 5344 Helicopter Aeronautical Chart (UK) c 1986

(Editors note: The master copy of this article was produced by Richard Oliver; rather than I should interfere with the original, and probably ruin the columniation, I hope members will make their own manuscript addition to their copy.)

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OS mapping of the Channel Islands (Sheetlines 36 p 53)

Guernsey 1:31,680 - Ian O'Brien's copy of the 12.17 reprint is on fabric. Although bought in Guernsey, there is no indication of the purpose of so doing.

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The 'Map of East Anglia' (1914?)

Richard Oliver's arguments for playing down any military stimulus for the production (of the Map of East Anglia) unconvincing. In the run-up to the First World War the threat of a German landing on the east coast, followed by a thrust towards London, was taken very seriously. Erskine Childers who publicised this danger in *The Riddle of the Sands*, considered the most likely landing places to be the Essex mudflats, or the Lincolnshire shore of the wash. In 1914 an entrenched defence line was established north of Chelmsford to block the advance of the postulated German expeditionary force, and that winter some 300,000 troops were deployed along the East Coast. Later in the war the cabinet seems to have convinced itself that the Germans were more likely to land in Kent (which would explain why the East Anglian series was subsequently extended into that county) where extensive field defences were constructed to protect London. (See Andrew Saunders' *Fortress Britain*, 1989.) No doubt there are other CCS members who can develop this argument further.

Ian O'Brien

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Canal Covers

The 1923 one-inch Ordnance Survey Tourist map of *The Middle Thames (from Wallingford to Kew Bridge)* with the Ellis Martin cover (H55)¹ of Boulter's Lock, Maidenhead is acclaimed by many (myself included) to be the most accomplished of Ordnance Survey Map Cover designs.

Where did Ellis Martin get the inspiration for this painting?

It was undoubtedly from a photograph of Boulter's Lock taken about 1890, a copy of which appears on page 190 of *Canals and their Architecture* by Robert Harris.² Some painter's

licence has been taken - for example, there are only two plain parasols in view in the photograph foreground, but Ellis Martin has made them patterned and multicoloured and increased them to five. Also some of the people have gone or changed sex. It is a wonderful and enticing picture.

In contrast, the current 1:50,000 Landranger 161 of *Abergavenny and the Black Mountains* has a most amateurish and mundane photograph of Govilan Wharf on the Monmouthshire and Brecon canal (also known as the Brecon and Abergavenny canal). My wife's comment on it was: "If that was on a postcard I wouldn't buy it!" It would benefit from being turned into painting and the selective eye of a painter used to enhance it. I can only repeat and endorse John Paddy Browne's comments at the end of his book:

"In the cycle of things artist-drawn map covers may well return, prompted perhaps by the wonderful examples of the 1920s and 1930s."

'The Middle Thames' is a superb example and the only map that I know of with a picture of a lock on the cover. I would be most pleased to know of any other maps that feature canal subjects.

Peter Stubbs

1. John Paddy Browne, *Map Cover Art*, (Ordnance Survey, 1991)
2. Published by Godfrey Cave Associates, London, 1969
(SBN 0 906223 20 2)

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Mad Map Disease: or, a month of map mayhem: a report from the front line

Just when it seemed to be safe to raise our heads above the parapet as the threat of the Contaminated Lands Register recedes, the Mandarins of Europe, aided and abetted by Ministries/Departments of Agriculture, thought up a new wheeze.

A trickle of farming enquiries over the last year relating to oil seed rape subsidies and set-aside land, suddenly became a flood in March, and alerted us to the introduction of a new system for claiming agriculture grants and subsidies. Entitled the "Integrated Administration and Control System" (IACS), it is a new arrangement to co-ordinate Common Agriculture Policy (CAP) subsidy schemes throughout Europe (except other countries in Europe do not have maps at British scales, so their control systems are nowhere near as detailed).

Our anxious query to Scottish Office Agriculture and Fisheries Department (SOAFD) revealed that application forms (to be returned by 15th May) for grants were about to be mailed to 53,000 farmers (in Scotland) with around 18,000 expected to have arable land. Initially, 1993 claims are to cover arable areas, beef, and suckler cows special premiums, but the scheme will be extended in 1994 to sheep and hill livestock premiums and compensation.

On the application form farmers have to list parcel numbers and hectares for all their fields and were instructed to buy 1:2,500 maps from OS agents. Soon press reports indicated that OS was under siege, with vast queues and delivery times stretching into weeks, not days. It was all very well for the government ministers to protest that the farmers had been warned last autumn, but no details were known until the end of March. Many farmers already had maps, but these gave the old parcel numbers which are not acceptable.

For those farmers who did succeed in buying current 1:2,500 maps a new problem emerged. Superplan was not at all super - Parcel numbers are often not included. So it was back

to the map libraries for superseded paper maps (but post-1959 when parcel numbers changed!), to fill the gaps.

Lucky the farmer whose entire farm was covered by 1:10,000 only - parcel numbers could then be invented by the farmer (but there was still the problem of field size).

For the farmers the timing could not be worse - in the middle of lambing and planting. We had one farmer almost in tears on the 'phone - a solo farmer, he was in the middle of lambing and his wife had just come home with a new baby. How could he leave for a day to consult maps?

Emergency measures were necessary in the National Library of Scotland Map Library: an appointment system for farmers was introduced: the urgent service for other customers had to be withdrawn temporarily. Staff became adept at checking map scale availability over the telephone - if farmers were travelling from Inverness or Dumfries (and they did!) to check maps, we had to make sure it was worth their journeys.

A 'phone call to the National Library of Wales revealed that they were also inundated ("twenty farmers in just now"), but the British Library Map Library had no enquiries - perhaps they were protected by the miles of concrete and tarmac between BL and open country!

By the time you read this the crisis should be over and we can spend the rest of the year catching up. It has been an invaluable experience - we are now intimately acquainted with parcel numbers and our understanding of National Grid indexes is much improved. Above all, the farmers have been lovely to deal with, wonderfully good humoured and patient. We have received many thank-you letters (and even a box of biscuits) from this exercise than from any other clients.

But the next time They think up a scheme, please would They let us know in advance?

Diana Webster

(Reproduced by kind permission of CARTOGRAPHITI, the newsletter of the Map Curators' Group of the British Cartographic Society, June, 1993)

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The storing of Maps

In the same issue of *Cartogaphiti* is an article on Map Storage in Libraries, which is very interesting but is probably not applicable to a large number of the members of the Society in the sense that we do not have large areas in which to keep map chests. I would be interested to hear from members how they personally keep their maps and what systems are used to catalogue them. From such information an article can be written for *Sheetlines* - would suggesting the next issue be putting my neck on the block? It does mean that members would have to respond reasonably quickly!

In the same vein, a number of members, myself included, would welcome some guidance on the cleaning, restoration and preservation of maps. Perhaps one of our practised members would like to contribute an article on such an important matter.

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The Power of the Ordnance Survey

The Ordnance Survey was blamed earlier in the year for the removal of a signpost to the village of Kiplingcotes, Humberside. The following cuttings, reproduced from *OS News*, May 1993, explain the story. Certainly, Kiplingcotes is not in the OS Motoring Atlas, and perhaps Humberside County Council's budget cuts mean that it can no longer afford to buy Landranger maps!

(* Actually NORTH east of Market Weighton: Kiplingcotes farm SE 934452 - Ed.)

Apparently Humberside CC was adamant that they would not replace the sign, and in the meantime the furniture dealer was threatening to go to court if the original sign in Market Drayton was not renewed. Perhaps a member living in the area could bring us up to date with the continuing or final outcome.

Now all we need is for the OS to omit the Houses of Parliament from the *London Central* map!!

The 1993 Rand McNally Road Atlas, North America and the 1993 Ordnance Survey Motoring Atlas of Great Britain

This article is a precis of an review published in the OS News giving the opportunity to make the comparison of two national road atlases which, at first glance, may exhibit common characteristics (same size, both floppy, similar price, etc.) but which, on examination, are as disparate as the countries they portray.

The United States, Canada and Mexico are contained in 115 pages of maps plus a double page spread of the complete continent; the British mainland are contained in 115 pages plus several additional area maps. This is achieved by the North American map being presented in a number of scales according to the size of the state (Texas is at 30 miles to the inch but Rhode Island is at 5 miles to the inch), whereas the British map is a constant 3 miles to the inch, except for two pages of Scottish islands at 5 miles to the inch.

Of the Rand McNally atlas the reviewer indicates that the open nature of the country permits the small scales to show a great many names without clutter. The gridded road network can also be easily and clearly accommodated. Included are many items of tourist interest (county names, highway labels, parks and local attractions) and a great range of symbols and topographic detail without any sense of overcrowding.

Full use is made of page formats to portray individual states, i.e. north-south states are printed portrait, and east-west shaped states are printed landscape. Such presentation makes for flexibility, but also has its own drawbacks, compounded by an alphabetical arrangement of the states. To move across the border from Georgia to Tennessee requires the transition of 66 pages, but the scale of both maps is approximately the same, 20 miles to the inch, although one map is portrait and the other landscape. A further example of cross border travelling however points up the difficulties of change of scale: California (25 miles to the inch) to Arizona (40 miles to the

inch). This can jolt one's sense of distance and consequently - at least initially? -estimated travelling times.

On the plus side, each map is presented within its own border which enables information relevant to that page - local distant charts, scale bar, road symbols, a selection of tourist symbols and biographical details about that state - on the outside of the neatline. Even the page number of index of towns and cities is included. Town maps fill up every available corner without making the pages look overcrowded. The comparison with the OS atlas is that each map is complete and does not look like the offcut from a large sheet map, '... a criticism sometimes levelled against the OS atlases.'

It is the town maps at 3 miles to the inch which allow a real comparison of the maps used in the two publications.

'.. The McNally maps are less cluttered, a feat achieved by simplifying linear features to single conventional lines, getting rid of symbols representing features which one would expect to find in a town, and actually finding space to name quite a few of the inner town roads.

The OS maps of town areas on the 1:250,000 digital edition are remarkably clean; they are also empty of detail and information.'

The reviewer goes on to comment that McNally suffers sometimes when road detail gets in the way of long names, and in the need to keep detail, symbols and names small and compacted, which '..makes the maps difficult to read under ideal conditions and probably impossible to read in a moving vehicle'.

The initial impact of each atlas when seen together is in complete contrast. The cover of McNally atlas uses a full colour photograph and warm colours, leaving no empty white spaces; the OS atlas 'looks brash and eye-catching in its livery of primary poster colours and bold typography', but cold. For two publications derived from digital technology, only the North American atlas openly proclaims it - "*Now with digital technology - A Road Atlas First!*" - on the front cover, whereas the British atlas hesitantly states "*Fully up-to-date computer generated mapping*" on the back cover, which the reviewer perceives is 'a symptom of OS's caution about antagonising a public which is still largely nonplussed about computers and things digital'.

Other information contained in the two atlases is contrasted, with the McNally coming off best: in addition the an Introduction by the company President, and 13 pages of user information, following the map section is a 'crammed but legible' eight page index a further 5 pages of useful information, and finally, 3 pages of discount vouchers! (*There are 5 pages of user information in the 1993 OS atlas, but 11 pages of index. Ed.*)

The inclusion of the discount vouchers marks out the fundamental difference between the two publishers: the McNally is commercial, aggressive and attractive - the American way? - whereas the more austere OS may represent the British way, even though the maps themselves are more aesthetically pleasing with their contours and rich hill-shading.

The North American atlas covers a much larger country and being priced similarly to the OS atlas, might give the feeling of better value for money. That Rand McNally can sell more copies than the OS and keep the price down is not a consideration of the customer.

'In this age of cost recovery, a little of the American way, with its commercial aggression disguised in a friendly attractive package, and its sense of value for money, might help us (OS) to go a long way.'

Source: OS News, May 1993 '1993 Rand McNally Road Atlas, North America and the Ordnance Survey Motoring Atlas of Great Britain' by John Paddy Browne.

Colour-Tabs on Maps

Richard Porter writes to elaborate on the topic of Colour-tabs on maps (*Sheetlines* 35, p 38 and *Sheetlines* 36, p 48) and sent a copy of an untrimmed Overseas Surveys Directorate (now OS International) 1:50,000 map of Guyana printed at OS in 1988. If this had carried a rubber stamp, it would have read “Advance Catch”, not “Proof”. Advance Catch copies are copies taken from the bulk-printed stock for final checking: once they have been approved, the stock is trimmed and the colour strip removed.

The Gertag Strip is now used only on 4-colour process-printed maps such as the 1:50,000 Landranger and 1:25,000 Outdoor Leisure Maps. It is added to the printing plates (it does not appear on the negatives) in such a position that it will run across the width of the printing press. It shows the 4 colours: solid, and as 40% and 80% dots. The solid colours give detailed information on the uniformity and density of the inks across the sheet; the octagonal patches of solid colour, with the colours overprinted, indicate how readily the second colour has adhered to the previously printed colour. A fine circular pattern is designed to reveal any slight slippage or ‘slur’, and its direction.

On the 1:25,000 Pathfinder series, an orange bar, alone, is printed the full length of the map, to enable the consistency of this colour to be controlled, since there are no large areas of it on the map face or integral cover.

Richard sent for distribution (and included with this edition of *Sheedines*) a current version of the Gertag strip, just trimmed off the newly printed digital 1:250,000 Travelmaster Sheet 8, edition A.

Part of the One-Inch map, Popular Edition, sheet 28, "Great Driffield and Bridlington". (3039, M.38. R.37.) It shows KIPLING COTES (*sic*) station just south of Kipling Cotes Farm on the now closed Market Weighton to Beverley line of the North Eastern Railway. The nearest station to the Kipling Cotes Race Course is Enthorpe. (*See article on page 36 – The power of the Ordnance Survey*)

... and Finally

May I be allowed to have a last word?

I have found putting together my first edition of *Sheetlines* an enormous learning experience (as they say in modern training parlance). It has certainly taken considerably more time than I anticipated, and I really don't know how Richard Oliver both edited and contributed a large number of articles in his spare time. For the next edition I shall know how to cope with the idiosyncrasies of word-processing programmes (well, some of them), and at what stage one really edits the content. Was it easier in the days of just re-arranging and pasting together columns of print as returned by the printer? The most frustrating occurrence was having apparently put together a neat 36 pages of *Sheetlines*, when I put it on to another computer system to finally produce camera-ready copy, made one or two fine adjustments, it turned out to be 38 pages! So please forgive me if there is the odd hyphen in the text in what was originally a word spanning the end of the line, the omission of a space between words, or even a spelling mistake.

For any contributor who has the use of a word-processor, I am very happy to receive your article on disk (3 1/4 inch). Although preference is for WordPerfect or Word for Windows, I can cope with any others, but *please* let me know what system it is. Disks will be returned after *Sheetlines* has been printed (just in case, you know...) BUT, do not let that put off any contributors who wish to submit a hand written manuscript.