In colour similar to I-2-C, with addition of red contours, on 205-sheet layout (I-3-SC): 36, 129: see note at end. [Addendum, April 1998: Sheet 60/61 is now also known.]
District sheet, in colour, with hill-shading, contours and layers (I-3-DE): Killarney (1913)
Sheets in modified 'Killarney' style on 85-sheet 'Large Sheet Series' layout (I-3-LC): 16/17 (Belfast); 80 (Cork) (both 1918).

Note: Third Edition maps in colour: By the time that initial, de facto small sheet series, coloured one-inch coverage of Ireland was completed in 1906 preparations were in hand for a Large Sheet Series one-inch of England and Wales, and similar proposals, initially in 88 sheets (reduced by 1920 to 85), were made for Ireland (J.H. Andrews, A Paper Landscape, p.294; the 1920 layout is illustrated in Sheet lines 11, p.6); presumably action was deferred in anticipation of issuing a Third Edition coloured map on the 85-88 sheet 'Large' sheet lines. The publication in 1913 of Sheet 129 (Baltinglass), based on 1911 revision (but without 'Third
Edition' on the map), and of Sheet 36 (Belfast), revised in 1912 (also without 'Third Edition'), possibly in 1914, may perhaps be relics of a short-lived policy around 1912-14 that that when I-2-C sheets became due for reprint they would be republished as de facto I-3-SC. It would be nice to have this confirmed.

An Irish miscellany

by Brian Adams

1 - The Projection of the original One-inch Map of Ireland (and of Scotland)

Doubts have been raised from time to time concerning the projection used for the one-inch map of Ireland, that is the original 205-sheet series dating from 1855 and published in a number of forms, but now as a whole destined to remain the only all-Ireland one-inch series ever published. The doubts about this series, generally believed to be on Bonne's Projection, have been summarised by Professor John Andrews on pages 231-3 of A Paper Landscape, but to the best of my knowledge no such doubts have been expressed on the original one-inch map of Scotland, first published concurrently with the Irish series and also held to be on Bonne's Projection; the first three editions of the Scottish one-inch were all on the same projection and sheet lines.

On looking into this matter more closely I find there are two problems intertwined:
(a) the projection used for the sheet line system and the associated latitude and longitude graduations; and
(b) the positioning of the topographical detail on the sheets.

On question (a) the fact that the data for the projections and their origins, in particular the projected radii of the parallels of latitude of the origins, were firmly stated in OS publications leaves little space for reasonable doubt. But in 1905 the former OS Director General, Colonel Duncan Johnston, told a meeting of the British Association held in South Africa that 'the 6-inch and larger scales, and also the 1-inch maps of England and Ireland, are on what is known as the rectangular tangential projection', then describing what is certainly not the rectangular tangential projection but, although in rather vague terms, may be presumed to be Cassini's Projection; he continued, 'The 1-inch of Scotland is on a modified equal-area projection known as Flamstead's Modified.'
In considering these statements it is relevant to remember that Col. Johnston's particular sphere of interest was in reproduction methods and not geodesy, that he had been responsible for issuing the second edition of *Methods and Processes*, and that he had probably composed his paper aboard the Union-Castle liner without some requisite reference works; further that *Methods and Processes* described the projection used for the one-inch map of England and the six-inch maps of counties without naming it, that this projection (Cassini's) was always referred to by the OS as 'projection by rectangular spheroidal co-ordinates', and that the book states that the one-inch of Scotland is on a different projection, Flamstead Modified (i.e. Bonne's, see note), but does not mention the one-inch of Ireland. I therefore conclude that Johnston inserted the name of the English projection from memory, mixed up his rectangular projections in so doing, and added mention of Ireland but wrongly attached it to England instead of Scotland; and consequently I discount these references entirely.

However, for added certainty I have calculated the positions of two of the outermost points of the Irish one-inch sheet line system on the different projections, and compared them with the actual sheet graduations. The two points are the north-east corner of Sheet 21 and the south-west corner of Sheet 197, and at these extreme points there is sufficient north-south separation in the construction of the various projections to prove that the system of sheet lines is not drawn on Cassini's Projection nor on the rectangular tangential projection, and that it can be and virtually certainly is on Bonne's Projection.

Turning to problem (b), the practical cartographer from the days of pen, ink and all sorts of paper, would probably admit that the actual drawing in of detail could involve some *ad hoc* methods, with the hopeful end that errors of position remained less than the possible paper distortion; it might therefore seem somewhat pointless to pursue this matter. However, as all the detail (other than revision material) on the series under review was reduced in from county series six-inch maps, a single basic method should have been used to effect the transfer from county Cassini projections to national Bonne projections before the matter was engraved on the one-inch scale. It may be useful here to remind readers that all the six-inch sheet lines were Cassini co-ordinate lines of their respective county projections, and all the old Irish and Scottish one-inch sheet lines were co-ordinate lines of the national Bonne's Projections; also that a transferred six-inch rectangle would theoretically not be quite rectangular on the one-inch map, but that the actual difference would be very far indeed from a visible quantity.

The correct procedure then should have been to calculate the geographical positions (latitudes and longitudes) of the corners of each six-inch sheet from their Cassini co-ordinates referred to the county origin, then to convert these positions to rectangular co-ordinates on Bonne’s Projection referred to the national origin, whence the corners of the six-inch sheet would be measured out and marked in on the new one-inch plate, and the detail from that six-inch sheet reduced in to the reduced rectangle so established. I am greatly indebted to two Dublin professors who supplied me with copies of some of their research material concerning this and related matters, and both of whom included descriptions of other methods supposedly used for laying down the six-inch sheet corners. This revealing material was received after I commenced work on this paper, and I hope it will be of interest to members if I record my subsequent research step-by-step.

Professor John Andrews, now retired to Gwent, provided me with a minute written by the then Captain H.St J.L. Winterbotham in 1914 which first confirms my conclusion re (a) above,
then states unequivocally that the geographical positions of the six-inch corners in Scotland and Ireland were correctly calculated but were wrongly converted to Cassini co-ordinates on the relevant national origin, using the familiar Clarke's formulae. If this were so the work would be out of place relative to the one-inch sheet graduations by amounts increasing with diagonal departure from the national origin, and rising to a displacement of 0.10 inch too far north at Muckle Flugga. Such an error would be easy to spot, and could have been corrected for a detached island area, but I checked a number of widely spaced trigonometrical stations on the Scottish and Irish mainlands as well as in the Shetlands, and I found no evidence of any systematic error. I therefore have to discount Winterbotham's statement, except for his odd remark that the wrong method was still in use (in 1914), even though the last of the basic one-inch sheets had been completed over a quarter of a century earlier. If he was referring to the reducing in of revision material on six-inch sheets, this opens up visions of adjoining detail being several hundredths adrift, and brings home my earlier references to ad hoc methods.

Professor Thomas Murphy had meanwhile sent me evidence of his investigations into the Irish six-inch maps, in which he had had the advantage of having seen the Ordnance Survey manuscript 'Calculation Sheet Book'. Whilst this does not contain all the OS calculations, it does give the results of their calculations, and these were compared with the results of his own calculations. He found a systematic error in the north-south direction to be emerging between the figures he arrived at using the correct procedure I have stated above, and the figures in the OS book, and it was then suspected that the OS had used the following method: the geographical positions of the six-inch corners had been calculated from the county

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(14)
\]

Cassini co-ordinates as though they had been rectangular co-ordinates on a Bonne's Projection with its origin coincident with the county origin. Re-calculation of a number of representative points by this method gave a concordance with the figures in the OS sheet book to the second place of decimals, thereby showing beyond reasonable doubt that this method had been adopted by the OS. In all these calculations the provisional positions of the origins and the county twists referred to in Sheet lines 27, page 7, were used.

Although we know that Bonne's Projection was fashionable at the time of the preparation of the Irish one-inch map, the use of it in this way was strictly incorrect and it is difficult to imagine exactly how this came about. However the maximum error resulting from this misuse of the projection occurs at the outermost corner of the largest county, County Cork, and is only 0.004 inch or less than half a hundreth, which is usually regarded as an acceptable degree of accuracy in drawing on paper. Whether this possible discrepancy was calculated out in 1855 can only be speculated upon.

Armed with the news of this method of calculation for the Irish counties, I returned to my happy hunting ground in class OS 2, trigonometrical records, in the Public Record Office at Kew, in the hope of finding what method was used in Scotland. Having obtained the book containing the results for the largest county area, the unified counties of Argyll & Bute, I was pleased to find it also contained all the calculations as well as the results for another large county, Sutherland. The figures for these counties showed conclusively that the correct method and not the 'Irish' method had been used to calculate the geographical positions of the six-inch corners in Scotland, those for Argyll & Bute being quoted to and correct to three places of decimals. But what emerged from the complete Sutherland figures brought yet another suprise - the final calculations provided rectangular co-ordinates on the national Bonne's Projection in
units, not of feet, but of fathoms! Whilst this was somewhat gratifying to a retired hydrographic officer, it was initially rather baffling in an OS context; however, due thought suggested that this apparent quirk would enable the measurements to be directly plotted on the one-inch scale, utilising some instrument(s) graduated in scale feet at six inches to a mile. It was Ian Mumford who reminded me of the scoring machine, an early form of co-ordinatograph described and illustrated in *Methods and Processes*, in which the indications are that co-ordinates in feet could be directly read off on its brass scales when engraving new six-inch copper plates. So was yet another satisfactory solution arrived at, literally on the eve of the editor’s deadline for this number of *Sheet lines*, and so for the time being I leave this subject to rest.

*NOTE - Methods and Processes* says ‘The projection for the one-inch map of Scotland differs from that of England... It is the same as that used for the map of France, and sometimes called Flamstead Modified’, and follows this with a description of the projection which confirms that it is the one known to us as Bonne’s. I have not come across any source for the name Flamstead Modified, but Flamsteed’s Projection (this spelling is correct) is one of several names which have been used for the Sinusoidal Projection, which is in fact the particular equatorial case of Bonne’s Projection.

**References**
Calculation sheet book for one inch map, MS, Ordnance Survey Office, Dublin.
Latitudes & longitudes of the Initial Points of Ireland, MS, Ordnance Survey of Northern Ireland, Belfast.
Winterbotham, Capt. H.St.J.L., minute dated 9 October 1914 in OSL 16769 (1914-15), National Archives of Ireland.
II - Combined sheets of the Irish one-inch coloured edition

Quite a number of the more senior members of our Society will remember the late Stanley Crowe, a leading antiquarian bookseller specialising in topographical literature and maps, who long occupied premises in a Bloomsbury basement after being bombed out from the City. Many years ago I was fortunate to acquire from him a complete set of the coloured edition one-inch maps of Ireland bound in three volumes; two years later he advertised another complete set at exactly twice the price. However, it was somewhat confusing that the various combined sheets in my set differed in several respects from those depicted on the only series indexes that I could find, and eventually I had to construct my own index to my set.

Having offered to write something about this for the editor's proposed Irish-oriented number I examined the Royal Geographical Society's holdings of this edition, only to find that my set occupied an intermediate position between the array of coloured sheets as originally published and the final pattern of only a few years later. The differences between the original and later groupings of combined sheets are illustrated by the accompanying map.

The first sheets of the coloured edition were published early in 1902 and the first combined sheet, 201 & 202, appeared in May of that year. It was not until October 1903 that a second combined sheet was published, 71 & 72, followed by 49 & 50 in December and 37 & 38 in March 1904. These four sheets all comprised basic sheets extended eastwards to include relatively small portions of land. Meanwhile the coloured edition had first been completed for the south-eastern quarter of Ireland, followed by the south-western sixth and the north-eastern quarter, and it was only with the completion of the remaining north-western and western parts during 1905 and the first months of 1906 that combined sheets of varying shapes became almost universal in the coastal areas. It is evident from the writings of Professor John Andrews that this surge of interest in combined sheets occurred with the transfer of Irish coloured work from Dublin to Southampton. I should make it clear that I am only concerned here with the coloured sheets of the regular series, and not with special district sheets inspired by the Dorington Committee report.

Subsequently, during 1906 and 1907, quite a number of the early-issued sheets were reprepared, and during the course of this work many of the original basic sheets around the south-west and south coasts were replaced by additional combined sheets, together with some rearrangement of the combined sheets on the coast of Ulster, as shown on the map. The numerical designations of the combined sheets followed the rule (with one exception, later corrected) that where portions of a basic sheet fell on more than one combined sheet, then the basic sheet number was qualified by 'Part of' or 'Pt. of' in the combined sheet designations, but where a portion of a basic sheet only appeared on one combined sheet its number was left unqualified in that sheet's designation. These distinctions are also indicated on my map.

(For layout reasons, the map has had to be placed on page 19/93. - Ed.)
### III - County Origins of Ireland

This is believed to be the first ever published map depicting the county origins of Ireland. A brief commentary on these points appeared in Sheetlines 27 page 7. There is even less consistency in the names of the Irish origins than in those of Great Britain, but the appended table gives the most acceptable I can put forward at present, with alternative or locational names in parentheses.

<table>
<thead>
<tr>
<th>Province</th>
<th>Map No.</th>
<th>County</th>
<th>Origin</th>
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<tbody>
<tr>
<td></td>
<td>1</td>
<td>Londonderry</td>
<td>Benevenagh</td>
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<tr>
<td>Ulster</td>
<td>2</td>
<td>Antrim</td>
<td>Knocklaid</td>
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<td></td>
<td>3</td>
<td>Tyrone</td>
<td>Mullaghcarn</td>
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<td></td>
<td>4</td>
<td>Armagh</td>
<td>Armagh Observatory Transit</td>
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<td></td>
<td>5</td>
<td>Down</td>
<td>Slieve Donard</td>
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<td></td>
<td>6</td>
<td>Fermanagh</td>
<td>Devenish Round Tower</td>
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<td></td>
<td>7</td>
<td>Donegal</td>
<td>Letterkenny Church Spire</td>
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<td></td>
<td>8</td>
<td>Cavan</td>
<td>Cavan Church Spire</td>
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<tr>
<td></td>
<td>9</td>
<td>Monaghan</td>
<td>Monaghan Church Tower</td>
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<tr>
<td>Connacht</td>
<td>10</td>
<td>Mayo</td>
<td>Castlebar Church Tower</td>
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<td>11</td>
<td>Sligo</td>
<td>Cooper's (Markree) Observatory Transit</td>
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<td>12</td>
<td>Leitrim</td>
<td>Carrick-on-Shannon Church Spire</td>
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<td></td>
<td>13</td>
<td>Roscommon</td>
<td>Roscommon Church</td>
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<td></td>
<td>14</td>
<td>Galway</td>
<td>Galway Church Spire</td>
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<tr>
<td>Leinster</td>
<td>15</td>
<td>Longford</td>
<td>Longford Church Spire</td>
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<td></td>
<td>16</td>
<td>Westmeath</td>
<td>Mullingar Church</td>
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<td></td>
<td>17</td>
<td>Meath</td>
<td>Wellington Testimonial (Trim)</td>
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<td></td>
<td>18</td>
<td>Louth</td>
<td>Dundalk Church Spire</td>
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<td></td>
<td>19</td>
<td>Dublin</td>
<td>Dublin (Dunsink) Observatory Transit</td>
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<td></td>
<td>20</td>
<td>Kildare</td>
<td>Kildare Round Tower</td>
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<tr>
<td></td>
<td>21</td>
<td>Offaly (mapped as King's County)</td>
<td>Tullamore Church</td>
</tr>
<tr>
<td>Munster</td>
<td>22</td>
<td>Laois (mapped as Queen's County)</td>
<td>Maryborough (Portlaoise) New Church</td>
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<td>23</td>
<td>Wicklow</td>
<td>Lignaquilla</td>
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<td>Mount Leinster</td>
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<td>25</td>
<td>Kilkenny</td>
<td>St. Mary's Church Spire, Kilkenny</td>
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<td>26</td>
<td>Wexford</td>
<td>Forth Mountain</td>
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<td>27</td>
<td>Clare</td>
<td>Ennis Church Tower</td>
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<td>28</td>
<td>Limerick</td>
<td>Rice's Monument (Limerick)</td>
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<td></td>
<td>29</td>
<td>Tipperary</td>
<td>Cashel Church Spire</td>
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<td></td>
<td>30</td>
<td>Kerry</td>
<td>Tralee Church Spire</td>
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<tr>
<td></td>
<td>31</td>
<td>Cork</td>
<td>Mount Hillary</td>
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<tr>
<td></td>
<td>32</td>
<td>Waterford</td>
<td>Knockanaffrin</td>
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</tbody>
</table>
COUNTY ORIGINS OF IRELAND

△ Summit
● Church
■ Other
▽ National Origin (see Sheetlines 27 p.7)
D D Parallel to direction of Delamere Meridian

(Map scale 1.22 x maps in Sheetlines 26 pp.18,19)
LAYOUT OF ONE-INCH SMALL SHEET SERIES MAP OF IRELAND
COMBINED SHEETS OF THE IRISH ONE-INCH COLOURED EDITION

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
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<tr>
<td>------</td>
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<tr>
<td>------</td>
<td>ditto - but later superseded</td>
</tr>
<tr>
<td>------</td>
<td>Combined sheets published subsequently</td>
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<tr>
<td>------</td>
<td>Border as altered 1908</td>
</tr>
<tr>
<td>31</td>
<td>Included in sheet designation as 'Part of'</td>
</tr>
</tbody>
</table>

Notes: - ' & ' is to be understood in sheet designations
Sheet 83 was the only basic sheet to remain published to seaward of combined sheets
Ordnance Survey bicentenary publications
reviewed by Yolande Hodson


Published on 14 February 1991, this beautiful book is the first substantial bicentenary offering from Ordnance Survey. With colour illustrations on no less than 95 pages and showing over 200 cover designs, it is a visually stunning production and successfully achieves the author's purpose which was 'to record a unique Ordnance Survey tradition and, in recording it, to please the eye'.

Who, among the members of this Society, has been able to resist the evocative pictorial map covers of the interwar years? My own interest in them was generated a mere twenty years ago. At that time I was working in a copyright collection totally bereft of covers (copyright deposits come as flat sheets), and it was only when I came to buy my own, folded, copies that the whole new world of Ordnance Survey art was revealed. The discovery in 1974 of the Olivier Committee Report of 1914, made while researching for the Seymour History, opened up the background to the development of map cover art.

John Paddy Browne, who is in charge of Ordnance Survey's Carto Library, has taken up the story with infectious enthusiasm; his fluent, relaxed style of writing admirably complements his subject matter. The book is arranged in four sections: in the first we are given a synopsis of the early history of OS and the background to the development of map covers; secondly there comes what is mainly an excellent essay on Arthur Palmer, but includes the more peripheral artists like E.T.Hoy, Reg Jerrard and J.C.T.Willis, one time DGOS.

The nub of the book is the third section, a biographical essay on Ellis Martin: a fine piece of original research which has produced much new material, and we are shown examples of his early commercial work. Although the art work in this book is principally concerned with map covers, promotional material such as shop display cards is also included.

The fourth section is an account of the later artists, and we see the change from pictorial to 'designer' cover, clinical and austere, relieved by the charming studies of bird, plants and landscape by Harry Titcombe for the Outdoor Leisure Series.

This book is a good read, and wonderful to browse through; it has been elevated to the status of essential 'Collector's Guide' by the inclusion, at the end, of a meticulously prepared index by Dr Roger Hellyer. Here he lists 199 cover styles, each illustrated by a 'mini' colour reproduction; he does not claim to be definitive, but I challenge anyone else to do better.

I would suggest that it might have been useful to have indicated the locations of the original artwork which is reproduced; much of it is in private collections and not to be found at OS - but doubtless the author has an annotated copy for reference purposes. I unreservedly recommend this book to all.

Another bicentenary publication, published this year, each of these sets comprises 'a pack of ten historic map covers', giving altogether a 'choice of forty colourful postcards'. The packs are attractively presented in card wallets with an illustration of one of the postcards on the front, and on the reverse, a small illustration of each of the cards contained therein.

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(Collectors of OS ephemera will need to take great care in opening these covers in order not to damage them.)

These postcards need no words from me to promote them: they sell themselves, just as they sold the maps from whose covers they are taken. I can't imagine anyone actually wanting to use them, but at a unit cost to the purchaser of just under 30p, they represent value for money.


Produced by Ordnance Survey's in-house desk top publishing system, this attractively-designed A4 sized brochure has been given free as a bicentenary presentation to all OS members of staff. Its retail price to the public is eminently reasonable. The colourful cover, which shows the Shotter Boys view of the Tower and Mint from Tower Hill, sets the tone: each page is packed with illustrations. The accompanying text takes us from the early years, the Colby era, the battle of the scales, through to the digital era.

[N.B.: According to *OS News* for February 1991, which has a picture of the author signing copies for OS staff, *Map cover art* is thought to be the first book published wholly by Ordnance Survey; all the other books which have flowed forth in recent years have been co-publications.]

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**Editor's miscellany**

*The late Alfred Wainwright*

In a letter to the editor of *OS News*, March 1991, Mr David White, of Photogrammetric Services, Ordnance Survey, writes: 'His famous guides to the Lakeland Fells were a source of great value and pleasure to many people and "AW" might have been interested to know that here at the OS we found his guides a source of help in making our maps. In the mid 1970s, in what was then Air Survey Branch, we were producing the 1:10,000 Resurvey of the Lake District. Somebody who had a set of "Wainwrights" decided that it might make the aerial survey more interesting if we referred to them as we plotted, to make us feel that we were almost climbing the fells, rather than being office-bound. However, we very quickly realised that the fine detail of his descriptions of the routes up the fells caused us to start looking more closely at the photography for detail which would probably otherwise have been missed, resulting in either an expensive ground operation, or some features never being shown at all. We were responsible for plotting all the rock features at 1:10,000 and Wainwright's descriptions of scree slopes, gullies and rock faces on the higher fells were extremely valuable. At lower levels, descriptions of streams, walls, stiles, marshy areas, etc gave us many clues which assisted in plotting the maps. I would be interested to know if the surveyors who did the field completion ever used "Wain-
wrights" to help them. I think it would have been a source of satisfaction to Wainwright to know that the mapmakers whose exploits he so greatly admired found his work so useful.'

Compulsory land registration
This was finally achieved in England and Wales in November 1990. It will be recalled that the prospect of land registration was one of the reasons urged in c.1850-62 for the adoption of the 1:2500 resurvey of southern Britain, and in 1880 for accelerating it. It is perhaps as well that other reasons were adduced for this scale, for though the Land Registry was set up in 1862 the number of registrations during the remainder of the nineteenth century was derisory, and even by 1939 only a handful of areas were covered by it. Compulsory registration was accomplished some eight years after the original 1:2500 surveys were wholly replaced by resurvey or 'overhaul'!

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How rude can you get?
Ian Mumford writes to draw attention to two books listed under 'Antiquities - other parts of the word and miscellaneous' in Classified Catalogue of Books in the Library of the Ordnance Survey Office Southampton, revised and corrected to 31 August 1904 (HMSO, 1904): Ferguson's Rude Stone Monuments in all Countries (London, 1872), and Dyer's Vulgar Errors, Ancient and Modern, with a Commentary on Richard of Cirencester, to which is added Richard's Original Work (Exeter, 1816).

Kerry query
In answer to all those who had to travel to the meeting on 16 March by road: the Kerry Branch of the Cambrian Railways opened on 2 March 1863; it closed to passengers on 9 February 1931 and to goods traffic on 1 May 1956.

Drumming it in
Wilbur Cocke draws attention to an article in a recent issue of Soldier magazine on the work of 14 Independent Topographic Squadron, Royal Engineers (Gulf), during the recent war. One of '14 Topo's' main jobs has been to provide locational information for the 7th Armoured Brigade in often featureless terrain. Old oil drums have been sunk in concrete, and have had their geographical co-ordinates painted on them so that passing troops can check their position. These markers have been positioned using Global Positioning System (GPS) satellite information. Peter Chasseaud confirmed a vague memory of the Editor's that the same principle was employed on the Western Front during World War I: trenches were numbered, and these numbers appeared on the trench maps, and from 1916 onwards the Field Survey Companies left bearing pickets in place in the course of their work. Needless to say GPS was not available then! It may be remembered that Brigadier H.St J.L. Winterbotham (OS Director-General 1930-35) once suggested that Ordnance Survey yard grid co-ordinates be painted on signposts, lamp-posts and so on; the Editor has seen this done in a few places near Settle, in the West Riding of Yorkshire, e.g. at SD 804600 and SD 836513; does anyone know of other instances?

A remarkable bargain
Rod Monnington draws attention to an interesting advertisement on page 43 of Exchange and Mart of 29 November 1990: 'Super investment, complete set ordnance survey maps,
England, Scotland, Wales, 1938, boxed set, family owned for sixty years, £80,000, rare item. 0831 551051.'

Any old iron?
Following the note on the uncertain future of redundant Ordnance Survey triangulation pillars in Sheetlines 29, page 26, Norman Gillard writes to draw attention to a find on a remote Welsh hillside some years ago. About 6 km south-south-west of Rhayader is an OS pillar on a hill called Y Gamriw, altitude 599 metres (1:50,000 Sheet 147). On striking sharply downhill southwards from the pillar, around SN 950610, Mr Gillard noticed a cast-iron object half-buried in the rough grasses. It was circular, 5.75 inches in diameter, with the letters 'OS' cast in two-inch raised letters on its top surface. On its under surface was a flange 0.625 inches deep and 4.5 inches in diameter. It weighed 3 lb and was, not suprisingly, somewhat corroded. There was no provision for screwing in a surface plate nor was the top surface smooth enough or flat enough to serve as an accurate level. Can anyone identify this object?

Study Meeting, 16 March 1991
Twelve members met at David Archer's house at Kerry in Montgomeryshire to discuss Ordnance Survey maps and local history, and in particular to devise a recommended list of maps for local history societies and the like. David led the discussion, and so controlled things that considerable progress was made, and all the essential business was completed by four o'clock. A discussion document will be drawn up and circulated to some of those present; it is hoped to include a more finished version in Sheetlines 31 and 32. The Society is extremely grateful to David Archer and Alison Brown for providing a venue, and for feeding the attenders.

[Addendum, April 1998: The 'discussion document' never did get published, but 'A select list of OS maps for local history use' will be found on pp 188-9 of Richard Oliver, Ordnance Survey maps: a concise guide for historians, London, Charles Close Society, 1993.]

Richard Oliver

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New maps

Ordnance Survey of Great Britain

New publications between 1 October 1990 and 31 January 1991 included:
1:50,000 Landranger, Second Series, revised sheets: 117, 127, 140, 162 (all edition B).

Roman and Mediaeval Canterbury: Historical Map and Guide.
The former monthly publication report started to appear in February 1991 as Publication NEWS (sic). The cover of the February issue includes a picture of the lady editor.

The following will be available by the time that this appears in print: Roman Britain, Historical Map and Guide; OS200 Brochure (short history, etc: see review elsewhere in this issue); Central London (1:7920), edition D. The last (£2.99) includes the 'OS 200' logo and a photo of the Tower of London on the (oversize) cover and a short historical note on the OS connection with the Tower inside. The cover is now hinged, rather than integral; inside, the 'M.25' half-inch map is advertised by a reproduction of its cover. As for the map proper: compared with earlier editions there has been some simplification of the detail shown away from sheet frontages, and the enlargement of scale from 1:10,000 adds clarity.
There appears to have been another 1:50,000 specification change recently, as evidenced by Sheet 117, edition B: ‘Works’ are once again (mostly) described, as they were routinely until 1957, when the generalised description was introduced for economic security reasons; for the same reason reservoirs were no longer described. This rule had been relaxed by the mid 1960s, but very few of the descriptions were restored. Although Sheet 117 still retains several undescribed ‘Works’ the restoration of the descriptions is like a breath of fresh air. Another feature of the new edition of Sheet 117 is the highlighting as a tourist feature of the ‘Cheshire Cycleway’ routes; though this is to be welcomed on the grounds of utility, your cyclist editor is still not reconciled to the blue highlighting.

The Godfrey Edition

Between 5 December 1990 and 1 March 1991 the following places were added to those covered hitherto: Castletown (Isle of Portland); Cockermouth; Dingwall; Dumfries (south); Elgin; Hatfield; Lawley (Shropshire); Nairn; Oswaltdistle; Oswestry; Sherborne; Workington. There have been further issues for the Black Country and London; the Birkenhead group is nearly complete; and the remaining sheets for Barnsley have been issued. Yorkshire 274.08, Barnsley (NE) 1904, includes on the reverse a very good quality extract from an 1878 electrotype of Old Series Sheet 87 SW, enlarged to 1:50,000, with a great gain in clarity. Baldock, Haddington, Hitchin, Ketleyhill [Telford] and Poole and Irish one-inch Sheet 32 with large-scale plans of Belleek and Pettigoe will probably be available by the time this appears in print.

Ordnance Survey of Ireland

1:50,000 map: though Sheets 54, 56 and 78 remain the only three to be published so far, Sheet 54, The Slieve Bloom Mountains: A Satellite View. It is a combination of Landsat TM imagery obtained on 7 August 1988, in true colour, and enhanced by combination with a high resolution black and white image from the French SPOT satellite of 14 October 1988, with conventionally drawn roads, walks, tourist information and significant place-names. There are also two inset simulated three dimensional views of the Mountains. The area covered is roughly coincident with Sheet 54, but omits a strip along the north, and is extended west to include Birr. It was produced with European Community funding to help developing tourism in the district as an alternative land use. Field boundaries as well as land use are shown, and purchase (at the same price as the standard version of Sheet 54) is cordially recommended, even to those who have the standard version already. One minor peculiarity: the single-sided Sheet 54 was originally issued in a 4 x 8 semi-Bender fold which would have enabled both sides of the map to be inspected without opening the whole: the ‘satellite’ version (of which there is no hint on the integral cover) is a standard 4 x 8 Bender; so you have to open the whole to see the ‘interesting bit’ on the reverse!

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[Some ‘Additions and corrections’ to Sheetlines 28 and 29 which appeared at this point in the original have been transferred to the appropriate places in this reissue.]

Additions and corrections to Richard Oliver’s guide to the New Popular Edition, etc.:
page 34, Sheet 156: this sheet is now known to have been proved shortly before 1 December 1940, but no copy has been found.
page 39, Sheet 188: a T7G printing, with printed price 4s/6d, has now been found of edition Dl, curiously enough in the Seventh Series ‘job file’ for this sheet.
Help needed

Early 1:50,000 educational extracts: in 1971 eight full sheets and 43 extracts were produced as 1:50,000 enlargements from the one-inch Seventh Series for educational purposes, as were nine extracts from 1:25,000 sheets with contours and spot heights relabelled to the nearest metre. The full one-inch sheets treated thus were 47, 50, 91, 107, 135, 154, 170 and 180. John P. King has recently discovered teaching sets of 1:50,000 extracts N. York Moors/200M (Brompton), 249M/85 (Durham), 129M/141 (Brecon), 185M/104 (Scunthorpe) and 257M/176 (Sidmouth). Can anybody provide further examples? Answers, please, either to Mr King (64 Alric Avenue, New Malden, Surrey, KT3 4JW), or to the Editor.

Advertising leaflets inside early map covers: Rod Monnington is investigating the advertising leaflets inside book-type covers of one-inch and quarter-inch maps of the period circa 1897-1904 which include one-inch or quarter-inch indexes (see specimen below).

[Addendum, April 1998: the results of this investigation were published posthumously in Sheetlines 42 (April 1995), pp.21-7.]

Oxford Plastic Relief Series: Does anybody know anything about these, based on the Ordnance Survey? Anyone able to help is asked to write to J.M. Farrar, 33 Northview, Winchester, SO22 5EH.

Facsimile maps and locally produced publications on Ordnance Survey matters: Elsewhere in this issue will be found a review of A Gazetteer of Dorset Place-Names; the Editor's attention was drawn to this by a member who lives in Dorset. Although it is easy to keep abreast of facsimile map issues by national publishers such as Alan Godfrey, Phoenix Maps and Harry Margary, and articles published in nationally published specialist journals such as the Cartographic Journal, it is much more difficult to keep abreast of facsimile maps and other material published locally, such as the Dorset gazetteer. Examples of local facsimiles vary; those known to the Editor include three full-colour 1:1250 facsimiles of the OS MS plan of Southampton of 1846 and of the 1:2640 Board of Health plan of Cardiff of 1851, and monochrome reproductions of first edition 1:2500 by the Wimbledon Society, and a 1:5280 reduction of a
1:2500 of Reigate published by the Holmesdale Local History Society. It would be greatly appreciated if members who know of such local material would contact the Editor.

A warning to collectors

Guy Messenger writes to warn that the printed matter on the front and back covers of pre-1920 OS small- and medium-scale maps is by no means proof against erasure by an india rubber. Collectors are urged not to risk cleaning their covers by this means. Cleaning with a damp cloth can be equally disastrous.

Puzzle corner

What have Chandler's Ford, Chingleput, London, Nellore, Romsey, Southampton and Winchester in common? Anyone writing to the Editor with the correct answer will get a small prize. (Warning to 'Insiders': the Editor knows who you are!!!)

The answer to the puzzle in Sheetlines 29, p.29, is that Cumberland 1:2500 sheet 23.08 contains both Charles Street and Close Street. Another sheet reprinted by Alan Godfrey, Tyneside sheet 5, includes... well, see for yourself! It was once used by Alan for a competition of his own at a time when he was both selling old maps and publishing new ones. Are there any similar examples - apart from the village of Colby in Norfolk (TG 2231)?

Both of these sheets have been issued, to a much better standard of reproduction, in The Godfrey Edition.
Reviews


Many readers will already be familiar with Guy’s monograph on the Third Edition Large Sheet Series map of England and Wales, published by this Society three years ago. Though the presentation is somewhat less lavish - most notably, the index diagrams to each sheet are omitted - the present publication is a logical companion. The Scottish Third Coloured is the northern counterpart of the ‘LSS’, and though broadly similar in its cartography nonetheless differs in a number of subtle ways. Not least, it started publication a little earlier and lasted somewhat longer, the last sheets only being superseded in 1932, its colour scheme eschewed water lining in favour of an attractive extra blue tint plate, and it seems never to have been completed, as it never covered the Outer Hebrides, and the index diagrams on earlier issues suggest that the coverage of Orkney and Shetland in 1913 was an afterthought. (Incidentally, only four sheets were needed to cover the two archipelagos: every attempt since has needed seven.) As has usually been the way with Scottish sheets, sales were only a fraction of those for England and Wales, and so the maps are less frequently met with, and there were fewer reprints. It is for these reasons that some printings indicated by the cumulative print codes have failed to come to light, and that there is rather less to write about in the way of changes to individual sheets. There is also very little to write about the development of the series, not least because the documentary evidence is so slight; as so often with pre-1939, and particularly pre-1914, mapping, so much must be inferred from the maps themselves: one can list changes, and oddities (for example the strange variations in the woodland specimen in the conventional signs panel), but any explanation must remain conjectural, and, wisely, Guy has confined himself to facts rather than to theories. There is, however, one very interesting indicator in the book as to why this map was the last to be based on the engraved map of Scotland first executed in 1853-95, and that is in the apparent poverty of the image in some of the illustrations; excellent though engraving on and printing from copper was, it was not well suited to transfer to lithographic stones for lithographic printing. Though the Scottish Third was a notable episode in Scottish cartographic development, it is possible to interpret it as a dress-rehearsal for the colour-mapping of the kingdom, to be seen in its full glory in its successor, the One-inch Popular Edition of Scotland.

As with the earlier monograph on the counterpart mapping of southern Britain, this is an important addition to Ordnance Survey carto-bibliography, and thus to the growing infrastructure of British carto-bibliography generally. It is strongly recommended. By the way, some of the terminology differs from that employed by other writers, for example this reviewer, but it may well be found to be more ‘user-friendly’; so I don’t complain!

Richard Oliver
Ordinance Survey Memoirs of Ireland, Vol.1: Parishes of County Armagh 1835-8, and Vol.2, Parishes of County Antrim 1838-9 (Pt. 1), Institute of Irish Studies, 1990, £7.50 each (paperback) or £15.00 (hardback).

Elizabeth McKee of Whiteabbey, now in the 58th year of her age, is at present cutting a third set of teeth, several of which are quite visible. She lost her former set in 1833, while suffering from the effects of cholera.

Just a snippet from the great Memoirs of Ireland, now being transcribed and published in splendid new volumes, edited by Angelique Day and Patrick McWilliams. The first covers County Armagh, covering 24 parishes in the county, and written during 1835-8, though unfortunately Armagh City was never written up; the second covers five County Antrim parishes - Ballymartin, Ballyrobert, Ballywalter, Carnomey and Mallusk - just north of Belfast.

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The townland survey of Ireland was recommended in 1824, and the Memoirs were intended as written descriptions to accompany the maps, with the clarification of place-names a major feature. However, under Thomas Larcom, Colby's assistant, they became a major enterprise in their own right, with work continuing throughout the 1830s, until Peel's government pulled the plug in 1844, appalled at the escalating costs of the project. By that time just one Memoir had been published, that for the parish of Templemore (covering Derry), and the rest were removed to the Royal Irish Academy in Dublin, where they have remained.

Only Ulster was ever covered in the project before it was abandoned, and even here coverage varies. It is especially rich (and perhaps confused) for Counties Londonderry and Antrim, both of which will go into several volumes in this series. There is far less material for Armagh, Cavan or Monaghan. Moreover, there are major gaps, with no Memoir material for Armagh City or Belfast. But for the area covered it remains a historical resource without parallel, and this sparkling new edition is a major publishing event.

Some parish memoirs have been reprinted earlier, normally by local history societies; I have to hand the Memoir of Ardrea, published by the South Derry Historical Society in 1983, which has the considerable bonus of extracts from the letters of Sean O Donabhain (or John O'Donovan) whose work on Irish place names and pronunciation was full of scholarship, but whose letters contain the wit of a true scholar. 'The children play, think and box in Irish', he said of Draperstown.

But the new series will bring together all the Memoirs in a way Colby, Larcom and O'Donovan would have loved. Each will be around 140 pages in length, and there are certain extracts from six-inch maps (though the reproduction quality of these is variable). Of the variety of subject matter, perhaps Colby is best quoted: 'These books will also contain a great deal of information respecting the means of conveyance, state of agriculture and in short of almost everything that relates to the resources of the country.' That was in 1826, but by the 1830s Larcom - one of the giants of the Ordnance Survey - had expanded coverage to include natural features, modern and ancient topography, social economy, and social customs. How closely this was related to map-making is a moot point!
These two Memoirs are great fun, and there is space only for a few random extracts. The Antrim volume tells of a bewitched cow in Carmoney; a sorceress, Mary Butters, was brought in to cure it, which she did with noxious fumes, though unfortunately the farmer and his father were suffocated to death in the process. In Armagh, history is brought up to date with a jolt when we are told of ‘7 police stationed [in Crossmaglen] in consequence of the country being in rather a disturbed state.’ And of Loughgall, ‘There is not much attention paid to cleanliness. The people have no amusements except in attending the fairs and markets in the neighbourhood...’ (and with a touch of sarcasm), ‘They have no scientific or literary institutions, no libraries, reading rooms or societies for the encouragement of useful arts or inventions’!

For those of us who love Ulster these volumes will be a treasure trove. But I think they are more than that. They are a tribute to the curiosity and humanity of early Ordnance Survey surveyors as they set out to explore the land, bringing back not just great maps, but historical jottings without parallel. Often flawed, often biased, they remain an historical archive beyond compare, and deserve the widest public. This series does them proud.

\textit{Alan Godfrey}


‘This series does them proud...’ I heartily endorse Alan’s review, above, of the newly published Irish Memoirs, and feel impelled to add to it his verbal comment that they are excellent bedtime books to dip into. As such, this reprint of the one Memoir which did achieve contemporary publication ought to be self-recommending, particularly as it is the sort of enterprise which is not likely to be repeated for many years. I have no doubt that it will be more successful than the original publication, which did not even cover its immediate production costs, never mind the considerable expenses of researching and writing it, and it should find a ready market in Ireland. Unfortunately, it is hard to recommend it to a wider public, for the simple reason that the quality is poor; the original letterpress has not taken kindly to photography, and prolonged or nocturnal reading is likely to prove fatiguing to even youthful eyes. As for the maps... well, they are hardly ‘done proud’. Done for, yes. To be fair, the very fine quality of Irish OS engraving must be amongst the very worst to photograph; do what one will, it always, even at best, tends to look as though it has been over-reduced, even when reproduced at original scale. This reissue will no doubt save scarce originals from further wear at the hands of latter-day users, but in no way is it something to dip into for ten minutes before turning out the lights. It is Instruction rather than Amusement. A pity.

\textit{Richard Oliver}

Robert Fidler, a 47-year-old tallow chandler giving evidence about the boundaries of Ormskirk in 1635, recalled how as a boy he "had his eares pulled and was set on his head upon a mearestone neere to a newe ditch on Ormskirk Moore and had his head knocked to the said stone to the end to make him the better to remember that the same stone was a boundary stone".

One of the perhaps less publicised feats of the Ordnance Survey was putting an end to the widespread custom of 'beating the bounds'; boundaries were now recorded on paper rather than on bonces. This is one of those useful books (Oliver Rackham's History of the Countryside is another) which can be cordially recommended to all those who realise that there is real countryside shown on Ordnance Survey maps. Though the title is 'Parish Boundaries', many modern 'civil parish' boundaries were until the late nineteenth century really township, tithing, hamlet or other boundaries, and these are fully dealt with here, as a recital of the chapter titles will show: 'What is a parish?', 'The ancient parish', 'Township and tithing', 'How old are township boundaries?', 'Boundaries and boundary markers', 'Analysing the boundary pattern', Mediaeval local government: county, hundred andwapentake', 'Ecclesiastical administration: diocese and deanery' and 'Parish boundaries in Scotland and Wales'. Most potential non-specialist users will find it far more satisfactory than J.R.S.Booth's Public Boundaries and Ordnance Survey 1840 - 1980, which though exemplary from the point of view of listing the various statutes affecting public boundaries and Ordnance Survey boundary recording procedures, is completely wanting on the archaeological side; understandably so, as it was written as an internal procedure manual. Practically the only blemishes as far as this reviewer are concerned are two on page 35, and they are not the author's fault. First, contrary to what has often been stated by Ordnance Survey and others, the Survey Act of 1841 does NOT require Ordnance Survey to survey boundaries: the key words are 'authorise and facilitate', which is rather a different matter. Second, the 'Index to Tithe Survey' is an unfortunate misnomer, as it is really an index to such public boundaries as happened to be on those tithe maps which had been completed by c.1850; a few tithe districts mapped after 1850 are omitted, some districts which are not tithe districts at all found their way in somehow, and there are numerous internal boundaries shown which do not delimit tithe districts. Rather more authentic mapping of tithe district boundaries has been undertaken by this reviewer, under the direction of Dr Roger Kain, as part of the University of Exeter/Leverhulme Trust Tithe Survey Index Project. Still, don't let that put you off an excellent addition to the literature. Warmly recommended.

Richard Oliver

My copy of the previous edition of this work is now well used and looking a little sad. That it has been out of print has been irritating, as it is very useful to be able to refer people to it, when answering questions on the Seventh Series.

The new edition is excellent and I will say at the outset that I recommend members buy a copy from the Society at once, even if they have the previous edition. The first word ‘Foreward’ sets the tone for what follows. The introductory essay has been completely rewritten and expanded from four to twelve pages. The listings of sheet details have a lot more information and a new section on Tourist maps has been added. The booklet is in the same style and format as those on the Fifth and Sixth Editions and is much more polished than the earlier editions.

As befits a historian, Richard has pushed back the origins of the Seventh Series to the 1920s instead of 1946-7 as in the earlier edition. In sometimes overlong paragraphs, we are led through the history of post-1920 one-inch mapping, the advent of the Seventh Series and quite detailed passages on the number of colours used, revision, and the demise of the series. I particularly like the detailed description of the technical aspects of producing the maps, and still find it incredible that it was not until the early 1950s that handwritten lettering was abandoned.

The listings of sheet details are clearer, being in the same style as the Fifth and Sixth booklets, with a space between each entry and there is the joy of having the sheet title listed as well as the sheet number. Details of the Index to National Grid Large Scale Plans are given and there is a plentiful supply of added footnotes to make anyone dive into their Seventh Series maps to see whether they have a copy of the sheet with the Heliport symbol appearing on the map only, etc.

The inclusion of the Tourist maps is a logical and welcome addition. I have always felt that post-1945 tourist maps have been neglected, but with this listing and the illustrations in John Paddy Browne’s book, surely interest will increase.

Although I say buy the book, there are still points to be ironed out in the next edition. A proof reader would help to eliminate spelling mistakes and typing errors, which I feel do give rise to a certain questioning of the accuracy of the typing of dates, and I would like to see the unique numbers listed in a tabular form as previously.

My main criticism, however, is about terminology. There will be many members, and non-member readers who have no formal cartographic background, and this should be anticipated when using technical words of any sort. For example, ‘with rouletted black grid’ (p.6), ‘scribing on plastic’ (p.13), ‘obsolete detail was duffed from the old negative’ (p.14), ‘edition B colour-proved 4 April’ and ‘Proved 23 May’ (pp.38, 39). I think I know what is meant, but it would be nice to see it written down.

Finally, I would like to question the meaning of state and sub-state. ‘Series’ refers to the sheet lines and ‘Edition’ refers to the successive versions of the individual sheets, we are told (p.7). ‘A/’, for example, is an Edition letter (p.14), so where does a sub-state come from, given that the word state seems never to be used? In comparing the last edition of the booklet and the
new one, we find that Column 8 is ‘Coloured versions’ but ‘Coloured substates’ previously. Column 10 is ‘Outline Substates’ but ‘Outline states and substates’ previously. And the heading for the whole section is ‘Editions and versions...’ but ‘Editions and sub-states’ previously. Where does ‘Version’ fit in the hierarchy, given that it seems to have

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replaced substate?

I am ashamed to say that I do not have a cartographic dictionary in which to look all this up, but if one copy of a map differs from another by only a full stop, then it is a different state of that map and should be recognised as such. Perhaps, as the degree of difference increases, this should be recognised by structured terminology, in which case, the structure should be clear and universally understood. Whether such differences are the result of accidents or not, they will turn up some time and should all be recorded when they appear. The present edition omits printings where some colours are missing, perhaps accidentally (p.16). To me, these are states of the map, they exist, and should be recorded in this list.

Having had my say, I look forward to the next edition of the present booklet, and the publication of similar ones for the Popular and half-inch editions.

David Archer

[Richard Oliver comments: David's criticisms are entirely just, but I can assure potential purchasers that all the dates were very carefully checked! One non-member user of the previous edition has proved most valuable in this respect! It is always very difficult to know how much prior knowledge readers have of technicalities, and it would be a worthwhile project to collect together and explain some of them. (Any volunteers?) I fear that a definition of ‘Substate’ will be sought in vain; I am not sure who invented the term, around 1985, though I certainly have done my bit to diffuse it. The problem is that ‘state’ was originally brought into use, many years ago now, for single colour engraved maps, and somehow got adapted for the price and colour variations which are a particular characteristic of the Seventh Series. The terminology is not perfect, and has to take account the change in the use of ‘edition’ and ‘series’ in 1951-2; I am not very happy with ‘state’ and ‘substate’ to describe what happens within a post-1952 ‘edition’, and if anyone can suggest something better, I shall be very glad to consider it.]

Ordinance Survey limited edition One-inch Seventh Series Set: Southampton, Ordnance Survey, 1991, £1250. In view of the expected demand, sets will be sold by ballot: applications must be on the official form; only one per person is permitted; applications must be received by 10 May 1991. For further details please write to Ordnance Survey, Bicentenary Limited Edition Office, C556, Romsey Road, Maybush, Southampton, SO9 4DH.

It will be remembered that, following the two stage withdrawal of the Seventh Series in 1974-6, most of the residual stocks were remaindered in 1978. A small quantity of each sheet, bar one, were put into store in anticipation of a special issue in the future; 65 sets have been made up, of which sixty are offered now, and the other five of which, I understand, will be put by. Although covers were stored, this Limited Edition is offered paper flat in a box, somewhat in
excess of the 30 by 35 inches of the maps, and is accompanied by certification of authenticity from the Director General and introductory matter, including a version (with a different introductory essay, and some illustrations) of this reviewer’s booklet on the Seventh Series. They are advertised as the final printings of the one-inch map, and whilst that is not strictly true - several one-inch Tourist maps are still in publication - they are unquestionably the final printings of the Seventh Series. For some reason no copy of Sheet 137, Lowestoft, was laid down in 1978, and it has had to be reconstituted. Limited stocks of the introductory booklet and of the reconstituted Sheet 137 have been obtained for sale to Charles Close Society members.

How many will feel inclined to enter the ballot for one of these sets remains to be seen; it ought to be possible, given patience, to assemble a set of final printings of these maps in reasonable condition for £750 or so, given a balance of buying from dealers and bookshops, though I must admit to not have managed this myself, yet! And flat maps, particularly largish

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ones like these, are rarely popular with private collectors; those not as greedy as me resign themselves to putting them under the bed. Still, advice was taken from a leading London sale firm, and the chances are that these sets will be stored rather than looked at; a negation of the whole purpose of making a map, possibly, though not a consideration likely to weigh with those with £1250 to spend.

The most interesting feature of the enterprise is the reprinting of Sheet 137. My understanding is that, though the Seventh Series reproduction materials were transferred from a glass to a film base in 1978, they are no longer extant, and that Sheet 137 has had to be reconstituted. If that is indeed so, the results are quite marvellous: they actually improve, marginally, on the original. Admittedly, apart from the tell-tale ‘Reprinted in 1991’, the result looks like a 1969 original, and anyone expecting a Supreme Cartographic Experience will be disappointed. Anyone who does acquire a ‘1991’ Sheet 137 will at least be the proud owner of a souvenir of the final, and perhaps strangest, episode in the history of the Ordnance Survey one-inch map.

Richard Oliver

The Map Collector, issue number 54 (Spring 1991): published by Map Collector Publications Ltd., 48 High St, Tring, Herts, HP23 5BH.

This is the OS bi-centenary issue of TMC, and although many members are regular subscribers, many more aren’t. Most of the articles are OS: Tim Nicholson on ‘Ordnance Survey Ephemera to 1939’, Yolande Hodson on ‘A Little Light Relief: a personal view of collecting OS maps’ and also on ‘Robert Dawson (1771-1860)’, and Richard Oliver on ‘More than a thumbnail: the large scale plans of the Ordnance Survey’. There is also a Guest Editorial by CCS chairman Peter Clark, and an account by Harry Margary of how he came to be a facsimile publisher. It’s nice for once to read work by CCS members which is decently illustrated; the editor of Sheetlines must be very envious of TMC’s circulation! [Not half! - R.R.O.]

‘Viator’

I must admit to slight perplexity, as the publication details given above are taken from the recto of the title page, whereas the verso has 'The Alderman Press'. It was under the latter imprint that The Village London Atlas 1822-1903 was published in 1986, and noticed briefly in Sheetlines 20, p.23. Anyway, the earlier enterprise was evidently successful, as similar Village Atlases have recently been published for Birmingham and the West Midlands; Manchester, Lancashire and North Cheshire; and North and West Yorkshire, and the formula remains the same: three editions of the Ordnance Survey one-inch, reproduced at roughly two-inch (1:31,680) scale, with a short introduction on village history, and no cartographic notes except for a trifle on the dust-wrapper. What finally decided me against the London atlas was the bad guttering; this has been somewhat improved in the present volume, but it is still not quite good enough. The enlargement does not really bring any more clarity than Alan Godfrey has been obtaining recently with his 1:50,000 enlargements from the one-inch for indexes, etc, on his large-scale reissues. Further, though the reproductions have been rearranged on common sheet lines, they are laid out as successive double openings, so that comparison of the successive editions is not easy. Although the contents are described as the first three editions of the one-inch, what we have are the Old Series, in early state (the enlargement does not help the conflict of hachures with names), and the second (revision of 1893-8) and Third Edition (revised 1904-6) of the New Series; I suppose the publishers were ill-advised as to the ramifications of the New Series. (The London atlas used the first rather than the second edition of the New Series, which was much more sensible.) Despite the title, coverage is restricted to eastern Derbyshire, western Nottinghamshire, and central and western Leicestershire.

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Twenty years ago, when the David and Charles reissues of the Old Series appeared, it would probably have seemed fanciful to predict that a time would come when that would simply be one, and not necessarily even the most highly regarded, amongst many Ordnance Survey facsimiles. The publication of these Village Atlases is a tribute to the large market for old maps, but I am inclined to think that a more worthy enterprise would be the issue, either in sheet or volume form, of the whole of the first and Third Editions of the New Series, perhaps enlarged to 1:50,000 and, if in sheet form, reassembled on sheet lines corresponding to the modern Landranger, for ease of comparison. Any takers?

Richard Oliver

A Gazetteer of Dorset Place-Names, compiled by Beryl M. Shuttleworth, Dorchester, The Dorset Environmental Records Centre, 1984, £2.00 paperback (postage 55p), ISBN 0 85216 330 4. (Available from the publishers, Colliton House Annexe, Glyde Path Road, Dorchester, Dorset, DT1 1XJ.)

One of our Dorset members drew my attention to this, following the description of Robin Hooker's Scottish Gazetteer (Sheetlines 29, pp.5-6). It is not paginated, but you get a nice thick
wodge of paper for your money, no doubt at 1984 prices. The gazetteer lists all names to be found on the 1:25,000 Ordnance Survey maps of Dorset in print at 1 January 1983, plus those new names appearing on 1:25,000 Second Series sheets of the county published during 1983. As a result a number of names appear that are to be found on the now obsolete First Series but not on the now completed Second Series, including ‘Nowhere’ at ST 7110. (Is this the result of superior techniques used on the new National Grid as opposed to the old County Series survey?)

The type of reference depends on the size of the feature: most names are given a six-figure reference, but villages have a four-figure reference, and large places such as Bournemouth (this is post-1974 ‘Dorset’) have a two figure reference. 100 km square letters are not given, save on the index diagram at the beginning. All references are to the approximate centre of the feature, and so the gazetteer is serviceable for any National Gridded map, even if the name does not appear.

So far, so good: all map-minded people living in the area ought to have a copy. My one quibble is will the method of referencing a few features split between two or four kilometre squares. Thus ‘A.E.E. (Winfirth)’ is ‘81/8286/87’; all those eights are confusing, and ‘820870’ would have been much better. Similarly, ‘Abbotsbury Plains’ are ‘57/5885’.

To have every county (assuming Mr Heseltine doesn’t abolish them) covered with such gazetteers would be a most welcome development.

Richard Oliver

[A space-filling extract from 1:10,560 Kings County [County Offaly] Sheet 24, of 1840, has been omitted.]
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Digital Developments at Ordnance Survey, Southampton

(What follows is not quite what the editor intended when he said in Sheetlines 29 that he hoped to include something on Digital Update, but he hopes that it will provide equivalent satisfaction.)

AMP Takes Over 1:2500 New Editions

by Les Rackham, Branch Manager, Carto 1F, Ordnance Survey

Production of 1:2500 new editions has now been switched to AMP (Automated Map Production) flowlines. This is the culmination of a process which started in October 1988 with the introduction of AMP on 1:1250 flowlines. The sticking point for 1:2500 production was area measurement. A system had to be devised in digital mapping which could mimic the existing specification. This meant developing a method of measuring areas at an edit station and of adding parcel reference numbers, braces, arrows, brackets and town-bands to the digital record such that these could be plotted by the AMP system. Such a method has now been developed, tested and successfully implemented.

Introduction of AMP on all new edition flowlines in Carto 1 has also meant that the days of sticking down symbols, stipple, cross-hatching and area values on positives are finally over. Gone also is the 2 x 1 km format: all new editions will now be 1 x 1.

The AMP system required 'structured' data to which have been added feature codes for slopes and vegetation (often referred to as AMP codes). The point and line data, including the AMP codes, are first 'cleaned' to ensure that all junctions 'snap' (so there are no undershoots or overshoots) and then analysed into links using a Laserscan software package known as ILINK. The data is then edited to resolve any problems which the software cannot deal with. The polygons are 'built' to ensure that they do not leak and a colour check is used in the production of a bracing trace. LITES software is used to measure parcels, position areas text and create braces, arrows, brackets and town-band symbols. Areas data are thus in digital form and can be incorporated into the master plot.

Both AMP check and master plots were originally produced entirely on Calcomp electrostatic plotters. These have the advantage of speed and can plot in colour. More consistent and higher quality master plots can be produced on Scitex and it is planned to move all 1:1250 master plots over when software to increase capacity is completed....

Areas measurement in AMP is another phase in the long history of area measurement at OS. Parcels have been numbered and measured on 1:2500 maps since publication started in 1855. The areas specification underwent various changes. The current specification was introduced in 1959 although hectares were only included from 1969 with metrication. The AMP specification has taken this a stage further by only showing hectares, all other aspects of the specification remaining unchanged.

Measuring equipment has also evolved. Starting with 'scale and trace' in the 1850s, this method persisted until 1967 when automatic-reading planimeters linked to electronic counters
and teleprinters were introduced. Area measurements were output on punched paper tapes and processed on the OS mainframe computer. In turn these were replaced in 1983 by microcomputer-controlled areas measuring equipment...

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Digital Rectification - A new slant on an old technique

by John Pepper, Rectification Section, Ordnance Survey

You have only to watch the Fokkers crabbing and drifting in to Eastleigh Airport on a windy day to realise that aeroplanes do not fly straight and level. Imagine, then, the Ordnance Survey Piper Chieftan taking aerial photographs! Even in the good weather required for flying, the plane tilts and turns and these movements are transmitted to the photographs as distortions in scales. For Air Ground revision it is important that photographic enlargements are produced to the map scale required. The problem is how to remove the distortions caused by tilt.

It was a Grade 3 surveyor called Bill Blogg who thought up an elegantly simple solution in the 1950s and thereby gave birth to the Air Ground method. In his garden shed he built a wooden machine which recreated the tilts of the aeroplane at the moment of exposure; this machine was a 3-D model representing the focal plane of the camera, the perspective centre of the lens and the ground beneath.

The ground was simply represented by a large scale map. This map was placed on the 'Bloggoscope' table. Suspended above this was a framework containing a small filament bulb (representing the lens centre). This shone light through nine points located on the 9" x 9" contact print and punched through an identically sized zinc plate. The light rays from these nine points were beamed downwards and outwards until the light dots were coincident with the corresponding points of detail on the map. To achieve this, the map was moved around on the table and the suspended framework tilted from the horizontal and raised or lowered vertically.

The variations in ground heights were eliminated by placing adjustable height blocks on the control points to raise the level physically at each point. Once all the adjustments were done, the height of the 'aeroplane' could be read off on a scale and the tilt was measured by lowering a plumb-bob from the bulb to the contact print plate. The location of this Nadir Point relative to the principal point (the centre of the photograph) indicated the amount of tilt.

Descriptions such as empirical, analogue and that newspeak ghastlyism 'hands on' spring to mind when describing the Bloggoscope.1 The production model was a superb piece of ad hoc engineering elephantitis in metal and wood housed in a tent made of blackout material. Jokes abound about what went on within those Stygian closets. Mentally, the beast was fun to use; a three dimensional puzzle using wooden pieces and pinpricks of light. Physically, it helped if you were 4’ 6” tall and had a spine made of green bamboo! May it Rust In Peace at the Science Museum in London.

In its place in 1989 came... the Computer! The first digital workstation was set up using a DEC Micro PDP-11 computer and Kontron DK2436 digitising table. This was then increased to two workstations as the demand for rectified photography increased in line with the Topo Sur-

1 [It is also often referred to as the Bloggs Tiltfinder - Ed., Sheetlines.]
veys Mapping Programme. We subsequently found that the PDP was unable to sustain the workload and meet the increased production target rates. The decision was taken to introduce Amstrad personal computers to the work area to give greater flexibility of operations.

The new method of rectifying air photographs has been devised using 3D-Space resections by 'least squares adjustment'. However, all is not least! We in the section still enjoy 'hands on' experience of prickers, pin-holes, plots and control points!

Nine plan points are still identified on each photograph; they are digitised giving them eastings and northings. The same points are also digitised on the relevant map with heights obtained from computer plots.

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Scale enlargement factors and rectifier settings are computed, which recreates the camera position, so eliminating tilts and scale distortion.

The data computed is sent to Air Photo section in Reproduction Division where the Zeiss SEG-V and Wild E-4 enlargers are manipulated to produce scale-correct and tilt-free photographs. Nadir point co-ordinates for the photographs and the field survey document are supplied to the field offices to enable the surveyor to plot its position accurately. To the relief of the surveyor, the laborious task of transferring Nadir points from the contact print to the enlargement and then to the Master Survey Drawing has ended with the passing of the Bloggoscope; scaling, raying in, resection and even fit-and-trace are things of the past.

In 1990 Rectification Section produced computerised data for over 10,000 rectified enlargements ensuring that the 1:2500 Air Ground revision programme was undertaken on time and in the most cost effective way.

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100,000 Maps Databanked: Ordnance Survey started digital mapping experiments in the late 1960s, when it was known as ‘Automated Mapping’. Renamed ‘Digital Mapping’, the first pilot scheme started in March 1972, and the first digital 1:2500 (SO 5052-5152) was published in 1973. Throughout the 1970s the question as to whether digital mapping was in fact needed was much discussed and at first the work moved forward slowly. In 1979 the projected completed date was 2040; by 1985, when Lord Chorley’s committee investigated the matter, it had moved forward to 2015. This was far too distant for most potential users, and an accelerated programme was agreed, which would use outside contract work to supplement OS efforts. At the same time equipment was improving: in the early days all corrections had to be done ‘blind’, sometimes needing six attempts. Plotters for the ‘hard copy’ have also greatly improved: a ‘heavy’ plot which once would have taken ninety minutes can now be made in ten. By January 1989 a total of 50,000 maps had been databanked; two years later, in January 1991, this total was doubled. (Source: Mostly OS News, February 1991, pp.7-8. © Crown Copyright.)

[Short sections at this point on on 'Sheetlines: sub-editing and vocabulary', 'Sheetlines: cover designs' 'Back issues of Sheetlines', and a list of new members have been omitted.]