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IMOS JOURNAL



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Journal of the International Map Collectors Society

SPRING 1994 ISSUE No. 56

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Cover Map: Detail from Gerard Mercator's map of Flandria bound in Abraham Ortelius' Theatrum Orbis Terrarum, 1570.

Copy and other material for our next issue (Summer) should be submitted by 30 April 1994. All items for editorial use should be sent to The Editor, Susan Gole, 240B Kentish Town Rd, London NW5 1DD. Tel: 071-267 4346. FAX: 071-267 4356

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From the Chairman's Desk

As IMCoS enters its fourteenth year, we can look back on the achievements with some pride, but we should also look forward. What should IMCoS be doing at the end of the century? May we be complacent and carry on as before, or should we be changing with the times? To try and think this through, a meeting was held in January for those Council Members who live in London, and the discussion that took place will be placed before the next committee meeting. Any decisions which are agreed on there will be put before the body of members at the AGM on 11th May. Members are invited to send in any suggestions or opinions before that date.

Suggestions were made about the composition of the Advisory Committee, the need to have an International Secretary based in London, and regular changes among the Directors. A need was felt for closer interaction with local map societies abroad, and the possiblity of IMCoS establishing a list of map societies and libraries world-wide. The membership continues to increase; in addition to methods already planned, members are invited to suggest how the benefits of IMCoS might be brought to many more map collectors world-wide.

This meeting was of an explanatory nature, and in the meantime IMCoS continues with its programmes of meetings. The annual symposium at Cambridge promises a feast of maps, as well as a visit to this charming university town, for those not already familiar with it. History breathes from the college walls, many streets can hardly have chaged over the centuries, and large areas are now banned to motor transport. And I suspect for many of us, the wealth of polar maps and antarctic erudition will be long remembered.

In the autumn, we will fittingly remember Gerhard Mercator four centuries after his death, when we go to Antwerp for the International Symposium. This will include visits to his birthplace at Rupelmonde, the Plantin-Moretus Museum, and the Royal National Library at Brussels, as well as talks by experts in their fields. Early booking is advised!

This issue is largely composed of a single long article, valuable to those who collect British town plans. From others who find this topic less interesting, I hope to receive items for the Journal covering many different themes. If any member has a particular interest, it is likely that there will be others who share it, and would welcome a piece, a snippet of information, news of a new book or exhibition, a well-argued paper disputing previous theory, or advice to beginner-collectors, even questions to which answers from more knowledgeable members are sought. The content of a society journal depends on the material that is submitted by its members. So once again, a plea for more material!

SUSAN GOLE

****

A map was a fine thing to study when you were disposed to think of something else, being made up of names that would turn into a chime if you went back upon them.
George Eliot in Middlemarch, ch. 83.

IMCoS Thirteenth International Symposium

in collaboration with V.Z.W. Mercator 1994
Cultural Ambassador of Flanders, Belgium

Antwerp, Belgium
21 – 23 October, 1994

'Flanders & Mercator: a basis for a new Cartography in the 16th Century'

Provisional programme

Friday	11.00	Press conference
	15.00	Registration
	17.00	Preview of Map Collectors' Fair
	20.00	Official opening of the Fair
Saturday	9.30	Dr Henk van der Heijden: 'The development in the cartography of the Low Countries and the Leo Belgicus maps' Prof. Xavier Van de Poel: 'Changing world views in Mercator's time and their impact on cartography' Mr Bart Minnen: 'A unique collection of 16th century "cadastral" maps of Brabant' Mr Dirk Imhof: 'Cartographical material printed by Plantin in Antwerp in the 16th century'
	14.00	Visit to Plantin-Moretus Museum
	17.00	Meeting with members of KAGA (Royal Geographical Society of Antwerp)
	20.00	Gala Dinner
Sunday	9.00	Departure by coach for Brussels Visit to map collections of the Royal National Library
	13.00	Visit to Rupelmonde, birthplace of Gerhard Mercator
	14.30	Visit to the largest Mercator Atlas collection in the newly refurbished museum at St. Niklaas
Monday	9.30	Optional tour of Bruges (returning to Antwerp at 17.30)

Registration forms for this exciting symposium will be mailed to members shortly, along with suggestions for accommodation, registration fees and how to pay them, and travel arrangements. It is recommended that members who wish to participate should respond at the earliest, as this makes the organisation easier for a successful meeting.

Contact: Anne Le Brun, Destrée Organisation, 46 Rue des Drapiers, 1050, Brussels
Tel: 32 / 2 / 512 44 42. Fax: 32 / 2 / 502 44 43

Editor's note: The Plantin-Moretus in itself is worth a visit, I've already been twice! And there is so much more to see in Antwerp, once one of the leading towns of the Low Countries.

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Some aspects of printmaking in the 15th and 16th centuries

Since we are here in a museum of printing history I hope you will excuse me for treating early mapmaking in this very special context. It is true that cartographical literature is dealing with this subject now and then; in general, this is, however, only covered by some brief comments.

Nevertheless there is general agreement on the fact that the introduction of printing with movable type and the invention of the printing press had an enormous impact on mapmaking and the quality of its results. Gutenberg's invention of about 1440 ushered in a new era.

What the monks in the cloisters, artists and scribes had painted and copied by hand with painstaking effort could now be produced and disseminated in hundreds of copies; and this provided an unimagined stimulus for intellectual progress. However, it was only relatively late that success in combining printed text and printed pictures was achieved. The first woodcut in a book had not been printed in Mainz but in Bamberg. It was the clergyman Albrecht Pfister who, in 1460, started to have his printed works in the German language accompanied by woodcuts made by two or three illustrators. The integration of a picture into text obviously met with some difficulties. Thus Pfister put the full-page woodcuts of the *Ackermann of Böhmen* (ca. 1460) opposite their corresponding text. In Ulrich Boner's *Edelstein* (1461) the text had been printed first and the illustrations later. Printing and text were assembled in one printing form and printed at the same time for the first time with the printing of the *Biblia pauperum.*

Regarding woodblocks the same slow approach to a satisfactory result of combining typographic text and printed illustration can be seen. Initially the laterally inverted text had been cut into wood of had been handwritten later, but late in the 15th century a start was made in cutting the woodcuts along with the typographic text.

As one-sided prints, woodcuts had been known since the late 14th century and copperplate engravings since early in the second decade of the 15th century.

Christian and secular subjects were both dealt with; pictures of saints and card games met with an equally ready market. It seems that maps with their more complicated construction making heavy demands on the mapmaker's skill captured the market rather late.

The first printed map known to us is in the shape of a wheel (T-O map) in an Isidore edition. It was printed by Günther Zainer in Augsberg in 1472 and is a very small woodcut (diam. 65 mm), with its few straight and circular lines cut into the wooden block along with the characters.

The two woodcut maps in the *Rudimentum Novitiorum* (Lübeck 1475) required far more skilful work from the woodcutter. This book of illustrated world history comprised a great many pictures and two genealogical tables which were meant to be its main attraction. The world map is characterised by a kind of slant view of the terrestrial sphere so that the



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mountains, fortified castles and towns can be made out in perspective, and even some recognisable small human figures populating the earth can be seen: important personalities such as the pope, some kings and a saint. The second map in this publication was of Palestine. Making such a map demanded some skill and care from the wood engraver who had to cut the wooden block according to a design that a specialised craftsman had already made on the block. The draft had to be drawn in reverse on the smooth surface of a plate of pearwood or yew (hazel, alder and cherry were used as well).Then the actual woodcutter would cut away the non-printing areas with the help of several instruments such as knives, scrapers and V-tools. Of course the grain of the wood set limits to the illustrations which could not have very fine lines. The lines left outstanding in the wood had to be broad enough to withstand the pressure during the printing process. So it is because of the material that woodcut maps are always characterised by their strong lines which are considerably thicker than those seen in copperplate engravings.

Researchers assume that the making of woodcuts in those days was already organised into a division of labour. In fact, it appears obvious when we consider that often many different kinds of woodcuts show one and the same artist's signature. Consequently it was the woodcutter who added his signature to the work, and not the artist who had actually drawn the picture. Sometimes the artist's signature is accompanied by the representation of a small woodcutter's knife, as the symbol of his work, and thus another proof for the division of labour.

The technique of woodcut printing achieved quite a large circulation, at any rate several hundred copies of high quality could be printed. Nevertheless one can easily imagine that the wooden blocks suffered increasing damage during the process of printing, and so the prints they produced were gradually altered. At first the raised parts which were especially fine were crushed or started to break off. Then the block itself might start cracking and its edges might break off. Some blocks which were frequently used or were already old were sometimes damaged by woodworm. All these factors are useful in determining the 'freshness' of a print. If the block became misshapen or started to warp, due to climatic changes or simply age, the evenness of the colour over the printed surface would be reduced, so that it no longer showed the same depth of black all over.

It is not at all surprising that the first maps were printed by the woodblock technique, since that was the typical method of reproduction in the 15th century. The material used was cheap, and the big printing centres such as Nuremberg and Bamberg boasted of a considerable number of technically well trained woodcutters. Despite this, the first important printed atlas of the 15th century was made through the art of copperplate engraving.

In the year of the publication of the *Rudimentum Novitiorum*, the Italians had already started printing a great geographical work, the Ptolemy edition. There is no doubt that the geographical renaissance in Western Europe began with the rediscovery and rapid spread of the works of Ptolemy, who lived at the turn of the 2nd century A.D. Since 1474 in three cities —

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Rome, Bologna and Vicenza — work was under way on editions of Ptolemy; and in the first two mentioned, it was decided at the outset that they would contain maps.

The first printed edition of the *Geographia* (whose real title is 'Geographical Instruction in Mapmaking') appeared in Vicenza in 1475; it was, however, without maps. The Bologna edition, which obviously dates from 1477 despite its given date of 1462 (LXII), had undoubtedly been printed in a great hurry to anticipate the Roman printers. It must be assumed that three years had been necessary for the preliminary work alone. The copperplates had been engraved by the illuminator and miniature painter Taddeo Crivelli who made use of Donnus Nicolaus Germanus's designs. The maps, richly decorated with ornaments, reveal the technical training of the artist Crivelli, who was working with the Duke of Este in Ferrara. The edition, probably of 500 copies, was hurriedly printed by Dominicus de Lapis. The technique of copperplate engraving was especially suitable because the network of lines for the latitude and longitude and the tropics could be easily depicted by using a sharp graver, which cut into the copper in a series of small shavings.

The names and explications were engraved into the plate; however, the characters and figures seem a trifle uneven. The conical projection of the map with the wind symbols in the form of heads with their respective names became the prototype for succeeding Ptolemaic maps. Correction of the plates by polishing the erroneous parts, thus making them smooth again, was relatively easy. For this reason it is not at all surprising that Crivelli's maps, which were quite crude, and frequently incorrect, can be found in many different states. As the Rome edition of 1478 was far superior to the Bologna edition, this latter seems not to have had much commercial success, and no further printings of it were considered.

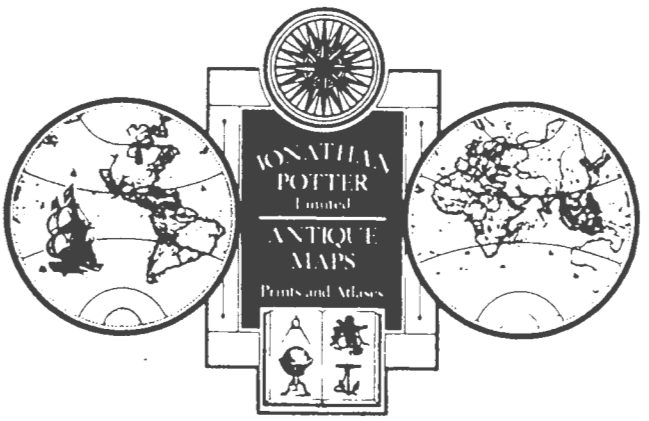
The copperplate engravings of the Rome edition are of a much higher artistic standard. than those of its Bologna predecessor. It was probably planned, by Conrad Sweynheim, as early as 1473. Sweynheim, a Benedictine monk came from Mainz and had connections with Gutenberg's workshop. Together with Arnold Pannartz from Cologne he had established a printing workshop in Subiaco in 1464, before moving to Rome in 1467. As his name does not appear on any other work after 1473, he was probably occupied with the Ptolemy production from that date.

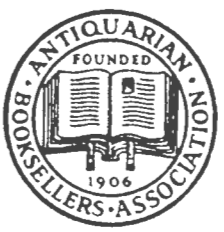
The mapmaking was supervised and directed by Connus Nicolaus Germanus. Each map was engraved on two copperplates. The first edition was printed by Arnold Buckinck and comprised, again, about 500 copies. By the time it appeared in 1478, its originator Conrad Sweynheim was already dead.

The legends on the maps were engraved in an accurate and harmonious 'Roman Capitalis', which allowed minute degrees of variety by the use of several sizes. In contrast to the former edition the sea was not represented by heaving crests of waves but by short, regular marks which were not so obtrusive. In this edition there was no additional decoration, but the geographical information was far morte detailed and correct. Two further printings of 1490 and 1507 were made

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from the same plates, and clearly show that the work met with a favourable reception. In 1508 it was re-issued with the addition of a new world map by Johann Ruysch, and numerous further editions were to follow.

Though Ptolemy's knowledge did not correspond to the latest state of research, the Latin text was considered to be trail-blazing and there was accordingly great demand for it in Europe. Some years after the Italian editions of Ptolemy, other Latin editions were published in Germany. It is surprising that these works were no longer illustrated by the elegant copperplate engravings with their delicate lines, but in a more traditional way with woodcuts.

The first edition outside Italy was printed in Lienhart Holl's workshop in Ulm in 1482. Its maps were not made according to the Italian copperplates, but followed the drawings in the Wolfegg Codex manuscript, and Nicolaus Germanus's second Ptolemy edition. This is the first time that we have a printed map with the name of the woodcutter expressly mentioned; 'Johannes Schnitzer de Arnsheim' can clearly be seen at the top.

Following the style of copperplate engraving, the characters were added to the printing form, but now they were made in relief. It was probably through an oversight that the letter 'N' had always been printed in reverse; and, by mistake, the Tropic of Capricorn was labelled 'Tropicus Cancri'. Undoubtedly such errors would have been soon corrected in a copperplate, but a woodcut did not offer similar possibilities. There is a second printing form of this map with the right name to the tropic, but without the name of the woodcutter Schnitzer. Whether this was a corrected version or an earlier block which had not been accepted cannot be clarified. The Ulm edition was not only printed on paper, but also as a de luxe edition on parchment. The number of copies of this superior edition must have been considerable. The bookseller Peter Drach from Speyer alone ordered a hundred copies in advance.

Almost automatically the question arises as to why there should have been such different techniques, when copperplate engraving offered some distinct advantages. Several answers might be given.

First of all, in the German publishing cities, the woodcutters and their workshops were close to hand, because book illustration with woodcuts had already gained wide acceptance. Since book printing as a relief printing technique and copperplate engraving as an intaglio technique required different printing presses, so that text and illustration could not be printed at the same time, the woodcut technique had come to be regarded the appropriate method for book illustration throughout Europe. And the workshops were prepared for this.

Furthermore, wood as a material was considerably cheaper than copper. Yet another reason, however, is that it was only since the middle of the 6th century that a new technique of rolling copperplates mechanically had been developed. By this time it had begun to be possible to obtain smooth plates of an even thickness in large numbers. The beaten copper sheets of the preceding decades had often had a varying degree of compactness, so that the average artist met some difficulty in engraving complicated sweeps of letters or lines with the desired precision and har-

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mony. With this new method of rolling the same effects that were achieved by calligraphers could be obtained.

Another reason for the increasing popularity of copperplate engraving as an illustration method was the fact that the Fugger trading family held a monopoly in copper ore coming from the mines in HUngary, Tyrol and Styria, and were thus interested in supplying the artists with copper. Jacob Fugger had his warehouse in Antwerp and his financial centre in Augsburg, and these were the two cities mainly engaged in copperplate trading. This it is not surprising that it was from this region, but especially – later on – from Nuremberg and Flanders, that intaglio printing for illustrations spread quite rapidly.

It will be seen that, in general, the woodcut method remained the prevailing technique for maps and book illustration for a certain time, with the Italian Ptolemy editions being an exception. It was not until the middle of the century that the city of Lyons presented its first book with copperplate illustrations; maps made by copperplate engraving had continued to appear in Italy, but they were scarcely known in countries north of the Alps. The more frequent appearance of copperplate maps in Italy may be partly due to the fact that they were often published as single sheets and rarely as book illustrations. The Italian engravers, in contrast to the German ones, worked in most cases independently of the printers and publishers.

In most of the woodcut maps of the 15th century the names are cut into the woodblock, as , for example, in Hans Rüstes' map of the world of about 1480, or in the illustrations of Breydenbach's 'Peregrinationes', the Journey to the Holy Land, of 1486. In the 16th century the combination of woodcut map and typography in the sense of Gutenberg's invention of printing with movable type was realised. A good example are the maps published by Sebastian Münster in his 'Cosmographia'. In the map of Bohemia of 1550 one can see different types, characterising towns of different importance. Cut into the woodblock are symbols for the respective creeds of the citizens, a chalice symbolises settlements of the Hussites, crossed keys places of catholic religion. This is the first map we know that indicated social aspects.

Peter Apian dealt in a different way with the combination of picture and printed text. In his printing workshop in Ingolstadt he used a kind of stereotype technique, which was something new in the making of maps. Complete names of places or cities, cast in type metal, were inserted in holes cut into the woodblocks, and were fixed with some kind of cement. Since some of these slugs became loose now and then, and were refixed, we can find many different states of these prints. That this explanation is not pure speculation is verified by the fact that in the collections of the Bavarian State Library the woodblocks with these insertions that were made for the well-known 'Bairische Landtafeln', maps of Bavaria, for Peter Apian in 1568 in the workshops of his father, also Peter, are kept to the present day.

For large maps, especially wall maps, a number of woodblocks was necessary. In Breydenbach's 'Journey into the Holy Land' there are panoramic views printed from up to four wood blocks placed side

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by side. For the wall maps the sheets were glued together in two or three rows, to combine into one magnificent work of art. In Venice in the hall of the Civic Museum you can see the beautiful blocks from which the famous Barbari map of Venice was printed. The margins of each piece had to be treated with much skill, so that the impression of one continuous design was achieved. Nevertheless, in spite of these endeavours, the joints are often very visible.

It would be a worthwhile subject of research to find out how many artisans co-operated on such tasks, possibly working side by side, each dealing with one piece of the whole, a practice which was common as late as the 19th century. Another kind of cooperation can be seen in the map of the world by Johannes Stabius and Albrecht Dürer of 1515. The printing blocks for this map were found in 1874, and kept in the collection of the Albertina in Vienna. No contemporary print was known. Not only is the very convincing perspective of this map impressive, it it also memorable for its decorative heads of wind gods, framing the globe, and obviously designed by Albrecht Dürer. Here it is quite probable that at least two people worked on this map: the designer who invented the map and the artist who contributed the decorative elements. The execution may also be attributed to different hands, but this is not quite so easy to establish.

Cooperation and division of work can be found in all branches of graphic reproduction. The more complicated and skilled the work became, the more obvious this tendency. When making atlases and maps was organised as a branch in the production of big publishing houses, professional methods, i.e. specialised labour, became common.

A publishing house usually had several artists under contract, who had their specialised field of work. We can think of the production of a map around the middle of the 16th century in this manner: the invention or the design was supplied by the author, a mathematician or geographer or some other humanist. This design or sketch was drawn out by a drawing master or a calligrapher, who laid down the accurate of shapes of countries and continents and set in the names and legends. When the copperplate had been engraved with the drawing as prepared so far, it was given to an assistant who worked on the more mechanical parts, like shading and stippling indicating the seas, or similar parts. Finally the artists who specialised in figure drawing added his ideas: people in costumes, wild animals, ships and ship wrecks, and possibly the cartouche which was important for the decorative quality of the map.

The ornamental work and decoration were often taken from ornamental print patterns, which were made to spread fashionable ideas. So maps became richer and more decorative as time went on. All the publishers had a stock of these ornamental prints for use in their design workshops, as it was not expected that artists would think up new elements for each map.

When we compare the simple print of Isidore of 1472 and the elaborate works of art of the late 16th century, it becomes clear how much was achieved in the space of less than a hundred years.

EVA-MARIA HANEBUTT-BENZ

IMCoS Library

Now that the IMCoS library has been safely re-housed in Docklands, all displayed on open shelves, and the books fully catalogued, librarian Chris Terrell has issued a letter to all members about how they may use the library. It is sent out with this issue of the Journal, along with the list of books, and reproduced here, so that it is readily available. The list will be up-dated as necessary.

The books in our library have all been donated, some by members who are also authors, others by publishers. All books sent for review to IMCoS eventually reach the library. Members who have published books are invited to send a copy to the library if they have not already done so. All such gifts will be acknowledged.

If you know any publisher who does not already send all books on cartographic topics for review in the Journal, please do stress the wide reach and targeted readership of our Journal, and its influence on all map lovers.

A letter from the Librarian

The purpose of this letter is to re-introduce the IMCoS library to members, and to answer some questions about it. I am keen that it should be of more use to members.

What does it comprise?

By far the greatest part is books, mostly, as might be expected, published after 1980. Many are very large and heavy and it is particularly strong in illustrations and facsimiles. The next group in size are catalogues of collections and special exhibitions. For organisational and record purposes the library is divided into these two categories.

Enclosed with this letter is a list of the books; a list of catalogues will be issued shortly. The aim will be to issue up-to-date lists at least once a year.

There are also two journal runs: *The Map Collector*, from the winter issue of 1988 (no. 45) and the *IMCoS Journal* from 1983.

Where is the library?

The books are on shelves in a ground floor studio flat beside the old Blackwall graving dock in Docklands, East London. The postal address is: Flat 16, Lancaster Drive, Prestons Road, Poplar, London E14 9PT. (D6 bus from Mile End tube station or 5 minutes walk from DLR Blackwall station.) However the flat is not permanently occupied, so neither correspondence nor books should be addressed there but to my permanent address at:

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of the executive committee. I attend most monthly meetings of the Committee and can deliver, or collect books by prior arrangement.

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I am happy to conduct a mailing service, within the UK, for books weighing less than two kilograms. The weight of books in kg has been inserted against each entry in the List; e.g.'[0.9]', so that postage can be calculated. Where a book is bulleted; e.g. '•', this means that it is unsuitable for mailing due to weight, size or other reasons.

Postage, plus 70p for packing, must be prepaid by cheque made out to: IMCoS.

Length of loans

Loans will be for a minimum of two months and a maximum of six months. When a book on loan is requested by another member after two months, the original borrower must return it. A book must always be returned to my address in Suffolk, **never** to Blackwall where it will not be deliverable.

Lost books

A condition of loan is that any borrower losing a book must replace it.

'Lending on'

This is a difficult area as it is the most likely way in which books will become mislaid. However, in order to increase the use of the library this will be permitted to other members of the Society. It is essential for the maintenance of records that the original borrower informs the Librarian in writing that this has been done and that the new borrower acknowledges receipt, also in writing.

USE OF THE LIBRARY ON SITE

There is nothing of great value in the flat, apart from the library, and I would be agreeable for members to consult the books on site there if they desired. Members wishing to do this should contact me by telephone.

CHRISTOPHER TERRELL

****

The Farmers' Club Meeting

The winter informal evening was held at the Farmers' Club on 27th January. 25 members attended, but we missed our president Helen Wallis who had left the previous evening for Australia. 14 members talked or asked questions about their possessions (not everything exhibited was a map!).

The meeting was chaired by Rodney Shirley and the first speaker was Raymond Frostick. As a Norwich man he was concerned with the area on the fringes of Norfolk, the Fens. In particular, he demonstrated that maps had been used to show how the progress made in draining the area had been recorded. The first dated back to a manuscript map made by Hayward in 1604 and reproduced as a print by Bayslade of Kings Lynn in 1722–3. The second map was a 1720 master sheet

showing the state of drainage work as carried out by Sir Jonas Moore, Master of the Ordnance in the Commonwealth period. These two maps provided a pre- and post-Vermuyden view of the Fens. It was interesting that both these 18th century maps referred to the original surveyors, proof that even then their historical value was appreciated.

Rosemary Vracas had been hunting for Chinese maps in Hong Kong prior to a trip along the Silk Route. She had found a master sheet and 42 detailed sheets that appeared to be military maps from circa 1910. After the usual haggling an affordable price was reached but no detailed knowledge of the maps had been worked out. Rodney suggested that the maps should be taken to the Oriental Department of the British Museum for elucidation.

Malcolm Young produced an 1820 map of his county Wiltshire mounted on cloth and folded to fit in an elegant book-shaped container. He had had great interest in using this map to see where old names had been retained and where changes had occurred.

Maria Iacovou referred to the Pagano map of Cyprus mentioned by Rodney Shirley in his article on the Lyon municipal library in the Winter IMCoS Journal. This is only the third known copy of this map.

Susan Gole showed plans of the English Cemetery in Rome when graves had to be moved to make way for a road improvement in 1889. The map had appeared in the British Parliamentary Papers because one of the graves was that of the poet Keats, and it was decided to move it to a garden on a specially prepared traffic



Roger Brown (left) helps Malcolm Young display his large map of Wiltshire.

island.

Valerie Scott talked about a carved turtle shell she had acquired. She passed round photographs of the carving which included maps of the Pacific and which she thought had been made for a commemorative issue of Captain Cook's voyages of discovery in the eighteenth century. She had seen another turtle shell with the same carvings in a local pub but had been unable to unearth any history. It was pointed out that turtle shell carving had been a means of passing time for sailors on long voyages and had also provided some extra income to a sailor when he reached land or returned home. These may have been carved to order for a map collector.

Rodney Shirley held up an Ortelius map of the Middle East. He referred to the port of Ophir that is mentioned in the Authorised Version of the Bible. This port has never been placed geographically and as a footnote Ortelius gives its possible positions on a world map varying from South America to Sumatra. The most likely positions are in Africa. Rodney also passed around two maps of the Diocese of Sarlat in southern France. One was issued by Hondius, the other by Blaeu. The geographical information was similar on both maps and the biggest difference was in the cartouches. That by Hondius was heavy and rather stilted while Blaeu's was much more elegant and romantic.

After a break for coffee, Eugene Burden talked about Kitchin and Jefferies' map of Berkshire of 1748 and a larger scale series of Berkshire maps dating from 1760. In the British Museum map library and the Royal Geographic Society library he had found eleven more



Valerie Scott studies Oliver's map of Middlesex, discussed by Peter Batchelor.

county maps issued by the same firm.

The Glaziers' Company was the connection for Peter Batchelor with John Oliver's map of Middlesex which had been issued by John Seller in 1689. Oliver was not only a surveyor, but also engaged in other trades connected with glaziery.

Freddie Liebreich handed round coins, the Israeli 10 Agura first issued in 1986, and also a paper he had prepared with questions posed when the coins were issued. On the obverse behind a seven-branch Jewish candelabrum is an irregular shape. It had been claimed that this represented the geographical shape of a Greater Israel. Obviously no official comment was forthcoming.

David Webb talked about road maps. He started with a Portsmouth road map issued at the start of popular motoring in 1906. He next showed the Oxford to Poole road maps issued by Bowles which were based on Kitchin's maps issued in the mid-18th century. Intriguingly these were titled the Post Chaise Companion. Finally he showed Roger's Three Year Travel of England and Wales. This had been issued by Moxon in 1697. Moxon had worked

with Ogilvy.

Harry Pearce showed a restored copy of a Harmondsworth Atlas and Gazetteer that he had been given. From trade information it could be dated to 1907/8 and had been the forerunner of the Times' series of atlases. It was pointed out that in later issued the trade information given here in vivid detail is much subdued.

Robert Bartlett talked about early British hydrographic charts by Duff, the English equivalent to Waghenaer. He showed two dated 1593, of the Wash to Walberswick, and the north side of the Thames estuary.

Roger Brown showed a map of Milford Haven and asked for a probable date. Opinion was for the period 1840–1843 based on the printer's locations given.

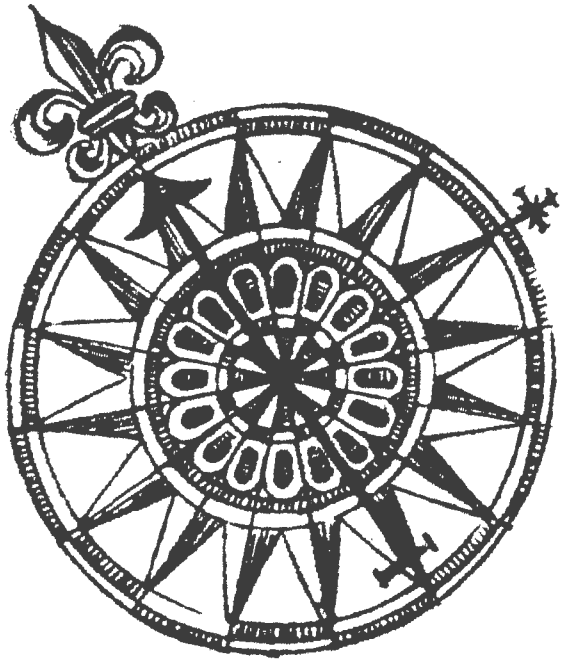
The meeting closed with a vote of thanks to Rodney Shirley, a decision to hold another meeting next year, and further examinations of the maps that had been discussed.

ROGER BROWN

IMCoS TRAVEL GRANTS

Grants to attend IMCoS symposia outside the applicant's country are available to members aged 32 and under. Details have been given in previous issues, and are also available from the Chairman, to whom applications should be sent in advance of the symposium which the member wishes to attend (address on page 3).

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International News & Events

1994 13th International Symposium
Antwerp
21–24 October
Contact: Itzhak Sperling
Voskenslaan 137
B-9000 Gent
Tel: 32-09/222.31.12
Fax: 32-09/222.32.97
(see details on page 5)

1995 14th International Symposium
in association with the
California Map Society
San Francisco
8–11 October
Contact: Alfred W. Newman
1414 Mariposa St, Vallejo
CA 94590
Tel & Fax: (707) 642 9091

1996 15th International Symposium
Riga, Latvia
13–17 October (prov. dates)
Contact: Dr Janis Strauchmanis
Tallinas 83–40, LV-1009
Riga, Latvia
Tel: 371 2 29 05 72
Fax: 371 2 22 50 39

From Barcelona, Spain

The Fifth Series of lectures organised by the Institut Cartogràfic de Catalunya was held on 21–25 February. The theme this year was French cartography.

From Budapest, Hungary

The 'Dinosaur' map from the Ulm Ptolemy Cartart FacTsimile was exhibited during November and December. It has been reproduced using methods identical to those of the first edition in 1482, from a specially prepared wood block and on hand-made paper. Further information is available from Qualitas Török, Szombathely, Koós K.9., 9700 Hungary.

From Washington, USA

The Library of Congress is holding an exhibtion celebrating Dutch and Flemish contributions to various cultures throughout the world, particularly from the period 1500 to 1800. Nearly 100 items from the Library's collections include maps, atlases, prints, manuscripts, photographs and books; there is also a model of a 17th century Dutch ship. The exhibition is on until May 15, 1994.

Additional venues for the Library's 'Language of the Land' traveling exhibition are:
Oct 14–Dec 3, 1995 at State Library of Louisiana, Baton Rouge, Louisiana
Feb 24–April 7, 1996 at Marian College, Fond du Lac, Wisconsin
Aug 31–Oct 13, 1996 at Grinnell College, Grinnell, Iowa.

From Schwerte, Germany

Pangaea-Verlag announces the publication of Jürgen Espenhorst's *Bibliographie der Handatlanten* at DM 150 (plus packing and tax). It covers atlases produced in Germany and neighbouring countries after 1800 to 1945. Details from Pangaea-Verlag, z.Hd. Svenja Espenhorst, Villigster Str. 32, D 58239 Schwerte.

Forthcoming Events in UK

Saturday 23rd April

Visit to Longleat

We are privileged to be permitted to visit the Library at Longleat, home of the Marquis of Bath, and to see the many interesting maps collected there. We will divide into two groups, Group A viewing the house in the morning and the Library in the afternoon, and Group B visiting the Library in the morning and the house after lunch. Both tours start at 11.00 am, and resume afer lunch at 2.15. A light lunch and sandwiches is available at the Old Cellar Cafe beneath the House, on cash payment. The charge for both House and Library visit will be £15 per head.

Members wishing to attend should apply to IMCoS Secretary, Harry Pearce, 29 Mount Ephraim Rd, Streatham, London SW16 1NQ, with a cheque made out to IMCoS. He will send further details about time and place of meeting.

Charges for those coming by car are an additional £2 per person, payable at the entrance.

28–30 March

Conference at Canterbury

Making Space : Territorial Themes in the History of Science' is the title of a conference to be held at the University of Kent at Canterbury by the British Society for the History of Science. Details from Dr Crosbie Smith, History of Science Unit, Univ. of Kent, Canterbury CT2 7NR.

Tales from the Map Room

This excellent series of programmes is to be repeated on BBC 1, between 24 April and 29 May, on Sundays midday to 12.30 pm.

London Lectures: Maps and Society

These lectures are held at the Warburg Institute, Woburn Sq, London WC1H 0AB, at 5.00 pm. The remaining three talks for the season are:

17 Mar Prof. Martin Kemp (Univ. of St Andrews) on ' *"A Map on which is painted the three realms of India"* : Maps and Topographical Views as "Interior Decoration" in the Renaissance'.

21 Apr Dr JA Bennet (Whipple Museum, Cambridge) on 'Ptolemy's *Almagest* and *Geographia*: A reassessment of the Significance of Cartography in the Sixteenth Century'.

26 May Prof. Barbara Belyea (Univ. of Calgary) on 'Maps, Tribes and Territories: European and Native Maps of North America 1750–1850'.

JB Harley Research Fellowships

Fellowships for 1994–95 have been awarded to:

Dr Mead T. Cain of New York, in March

Dr Claire Lemoine-Isabeau of Brussels, in April

Roger A. Starling of Toronto, in 1995

The awards, each of £400, are made as a contribution towards a two-week stay in London. For further details contact Tony Campbell, Map Library, British Library, London WC1B 3DG.

IMCoS Fourteenth Annual Symposium

at **CAMBRIDGE**
Friday & Saturday, 24th and 25th June 1994

Morning
Visits to the University Library, Trinity College Library,
and the Whipple Museum of Science

Afternoon
Seminar at the Scott Polar Research Institute
The following papers will be presented:
William Mills: Welcome, and brief outline of the Institute's role
RK Headland: A historical review of polar cartography
W Gareth Rees: Remote sensing and polar cartography
CWM Swithinbank: The Antarctic Digital Database Project

ANNUAL DINNER
at The Gonville Hotel
on Friday 24th June, 7.15 pm

IMCoS MAP FAIR
at the New Connaught Rooms, Holborn, London
on Sunday 26th June
10.30 am to 5.00 pm
IMCoS Members (and spouse/partner) will be admitted from 10.00 am

Registration forms for the 14th Annual Symposium were sent out with the Winter issue of the Journal. Those wishing to attend who have not already completed and returned the form, are requested to do so at the earliest.

Accommodation in Cambridge will be heavily booked, as our symposium coincides with Graduation weekend. A list of hotels and guest houses was mailed with the Registration forms. Members are advised to book immediately, and send a deposit to secure a room of their choice.

Full details are available from Harry Pearce, 29 Mount Ephraim Road, Streatham, London SW16 1NQ. Tel: 081 769 5041. Fax: 081 677 5417.

NOTICE OF ANNUAL GENERAL MEETING

Wednesday, 11th May 1994 at 6.00 pm
The Farmers' Club, Forty Room, 3 Whitehall Court, London
(near Embankment/Charing Cross Tube Stations)

AGENDA

1. President's Welcome
2. Apologies for Absence
3. Minutes of AGM on 12 May 1993
4. Chairman's Report
5. Executive Officers' Reports: Secretary, International Secretary, Treasurer, Publicity Officer, Librarian
6. Approval of Audited Accounts for 1993
7. Election of Officers
8. Any other business

Note: Members wishing to propose names for election to office should send them to the Secretary at arrive at least two weeks in advance.



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IMCoS BOOKPLATE

A sample of this specially designed IMCoS bookplate was sent to every member with the Autumn 1993 issue of the Journal. They are available for member's private use without the central lettering, but retaining the logo at the top.

It was designed by noted bookplate designer Richard Shirley Smith, of Marlborough, and printed at Libanus Press on natural shade gummed paper with sepia ink. Various cartouches of the 16th and 17th centuries contributed to the design.

The plates are on sale to members from Harry Pearce, at £4.50 (US$ 9) for 50 plates. Packing and postage is extra at the following rates (for 50 plates; 100 plates; 150 plates; & 200 plates):

UK: 40p; 50p; 60p; 70p
Europe: 70p; £1.00; £1.40; £1.80
Elsewhere: £2; £3; £4; £5.



IMCoS – R.V. Tooley Award

Nominations are invited for this prestigious Award for 1994. All members are welcome to put forward their suggestions in writing to the President, Dr Helen Wallis, OBE (c/o Harry Pearce, Hon. Sec.) before the end of March.

The Award will be presented to the individual who, in the opinion of the Selection Committee, has been responsible for cartographic contribution of great merit and wide interest to map collectors world-wide. Though the Award is intended to recognise individual merit, in special circumstances a group of people or an organisation could be eligible.

Earlier recipients are Valerie Scott, Kenneth Nebenzahl, Rodney Shirley, Dr Helen Wallis, Dr Mireille Pastoureau, Malcolm Young, Dr Eila Campbell, The Cultural Foundation of the Bank of Cyprus, Margaret Wilkes, Brian Harley with David Woodward, and Nico Israel.

The Award is presented annually at the June Dinner, and consists of a trophy, engraved each year with the name of the winner.

SUBSCRIPTIONS

Please send your subscription renewal to the Membership Secretary (see p.3 for address), if you are not covered beyond the end of 1993. Cheques payable to IMCoS, or by Access/Visa/ Master Card. Rates are:

1 year £16 (US $32)
3 years £45 (US$ 90)
10 years £150 (US$ 300)

Public Health and the Large-Scale Mapping of British Towns[1]

The history of the public health movement in Great Britain in the nineteenth century is well known and extensively documented. However, its symbiotic relationship with large-scale urban mapping has been rarely explored, nor the resulting cartographic treasury highlighted. Historians need this deficiency rectified in order to bring these fertile sources into wider use. The role of the Public Health Act of 1848 was critical in the political battle concerning the need for a national large-scale survey funded by the Exchequer.[2] It was critical also in developing the standard specifications which characterised the Ordnance Survey's urban mapping for the rest of the nineteenth century. The experience of large-scale mapping for 'improvement' generally and for sanitary purposes from 1848 specifically, led to Parliament's decision in 1855 to sanction a national series of town surveys at the unprecedented scale of 10.56 feet to the mile. Thus was created a remarkable historical record of British towns in the second half of the nineteenth century.

The sordid reality of 'streets . . . generally unpaved, rough, dirty, filled with vegetable and animal refuse, without sewers or gutters, but supplied with foul stagnant pools instead' and of '. . . the bad, confused method of building' persuaded progressive towns from the late seventeenth century to establish bodies of commissioners to seek power from Parliament to 'improve' by paving, cleaning, lighting and other measures to raise the quality of the urban environment. In order to obtain the private Act of Parliament required for the introduction of an improvement scheme it was necessary to submit details to Parliament of the commissioners' proposals. From 1811, proposals for improvements and street and paving schemes made to Parliament had to be accompanied by large-scale plans, although in practice these had frequently been submitted earlier. In other cases, plans were prepared for a commission but not submitted to Parliament.

From about 1760, a great many local acts were passed to create Improvement Commissions in towns. This system continued long into the nineteenth century, even after the Municipal Corporations Act (1835) had standardised town government. Amongst other things, Improvement Commissions concerned themselves with the levelling, resurfacing and draining of streets; the installation of sewers and a water supply; the widening of thoroughfares and the building of new streets; slum clearance; the erection of new public buildings, bridges and so on; the creation of pleasure gardens, piers, marine promenades and other leisure facilities; and the purchase of land for public recreation generally. Much of this 'improvement' required the demolition of existing buildings, as whole areas were laid out afresh, and the displacement of large numbers of people. Thus, as the commissions prepared large-scale plans of areas destined to disappear, they created an often unique cartographic record of the early townscape which is equally valuable whether a

proposal reached construction or not. Large-scale surveys for executing urban improvement are common from the eighteenth century, although prior to the 1840s they tended to be produced only in manuscript, to varied specifications, and to relate only to individual schemes or Acts of Parliament rather than covering a whole town.

However, such piecemeal control and improvement was unsatisfactory since progress was determined by the vagaries of changing local authority moods. By the 1830s, the Poor Law Commission. particularly its outspoken secretary Edwin Chadwick, was demanding better sanitation in order to improve disease prevention and raise the very variable national standards of public health. In the event, the most important change in the planning of improvements, and, consequently, in the mapping of the towns, was brought about by Chadwick's condemnation of private surveyors — whether land, rating, municipal or building — as inefficient, incompetent and expensive in his *Report on the Sanitary Condition of the Labouring Population of Great Britain* of 1842[3] (which, incidentally was accompanied by maps of Bethnal Green and Leeds showing classes of housing and the distribution of disease-incidence).[4] In contrast, Chadwick extolled the virtues of the military surveyors, thus shifting the onus of large-scale town plan production onto the Ordnance Survey which embarked upon a programme of officially encouraged urban survey. The growing anxiety about sanitary conditions and public health led to the decision to survey whole towns in Great Britain at a scale of 5 feet to the mile (1:1056) as they were covered by the Ordnance's 6-inch survey. The 5-feet scale was authorised for towns of over 4000 inhabitants north of a line from Preston to Hull in 1840, with the surveys of Manchester and Leeds underway by 1843 and St. Helens probably the first plan completed. (Irish towns had actually been mapped at this scale for valuation purposes, but not for publication, from 1833.) Rapidly there followed 5-feet plans for most towns in Lancashire and Yorkshire, the London area, Southampton (in manuscript only) and Kingston-on-Thames. In Scotland after 1843 the 5-feet scale was adopted for towns with over 4000 population during the period of the 6-inch survey. Most 5-feet plans were published before 1855 although a few towns were surveyed on the same scale after the main series had been abandoned. In all 59 plans were published at this scale in England and 15 in Scotland. However, in practice the 5-feet scale proved to be too small for the required amount of sanitary detail to be shown.

The permissive Public Health Act of 1848 set up a National Central Board of Health for England and Wales, except notably London. The Act forced towns with death rates of 23 per 1000 or above to set up a local board of health to clean the streets, remove rubbish, and install sewerage and water supply systems. Other towns could also establish a local board if 10% of the ratepayers requested it and the Central Board agreed. Each local board was to appoint a surveyor. One of the first required steps in the creation of these sanitary districts, which were formed throughout the period until the imposition of compulsory legislation from 1866, was the submission of a large-

scale plan of the area to the Board of Health. The Act, which was applied by some 182 British local authorities, emphasised the need for plans at larger scales than 5 feet to the mile to clarify improvement proposals by showing such sanitary and drainage features as cesspits, drains and privies.

Under pressure from the Board of Health and towns wishing to 'improve' in the face of the threat and fact of cholera, plans at a scale of 10 feet to the mile (1:528) were produced by the Ordnance Survey of towns where local boards had been established and which were willing to meet part of the cost. Between 1848 and 1857 35 towns were mapped at this scale in England and Wales, showing sanitary features in great detail, including the positions of drains, privies, water closets, wash houses and cess pools. The majority of these plans remained in manuscript with the town authorities although seven were engraved and issued by the Ordnance Survey as the basic plans for the towns. Ten more plans were resurveyed for publication at the same 10-feet scale between 1861 and 1881 and the scale was last used for the plan of the London parish of Hornsey surveyed in 1893–94, making 18 plans published at this scale in all. Occasionally, the Ordnance Survey's manuscript plans were lithographed by the town authorities for wider circulation, as in the cases of the 1853 plan of Woolwich, [5] Cardiff 1851, Margate 1852, Hitchin 1852 and Ware 1851/2. In the case of Derby, Standidge & Co. lithographed a coloured reduction at 1:2640 on four sheets in 1852.

Despite the Ordnance Survey's impressive achievement in mapping so many towns at the 5 and 10 feet scales, the majority of towns, such as Leamington and Nuneaton,[6] were mapped by private surveyors commissioned by the local board to conform to the standards and instructions laid down by the Board of Health. In the event, the Ordnance Survey was responsible for surveying only about 15% of towns covered under the 1848 Act due to its high tenders and charges. The Garston area on the outskirts of Liverpool, for example, was surveyed by Edward Gotto on his 20-sheet manuscript map at the scale of 10 feet to the mile of 1855. Other Merseyside outskirts privately surveyed were Wallesey by Mills & Fletcher (1855), St. Michael's Hamlet in Toxteth Park by C. Terbutt (1856), Wavertree by A.F. Orridge (1854) and West-Derby by Gotto again (1855) on 40 sheets. Generally, as the Ordnance Survey became more active in urban mapping, private surveyors were increasingly contracted to survey zones not covered by the official survey, particularly suburbs. The Board of Health required the preparation of two plans: 'A general plan of the district under the jurisdiction of the Local Board, to a scale of two feet to the mile, and a detailed plan of the town portion of the district to a scale of 10 feet to the mile.' However, these scales were subject to negotiation under special circumstances, as for Wallasey. Plans had to be drawn up in accord with the specimen plans produced by the Board of Health and were to be submitted to it for approval. 'The detailed plan must exhibit in its true position every permanent object which occupies the surface of the ground. The varieties of paving, of other surface material, must be distinguished by differences of colour. The

numbers of all houses must be marked; all properties under one occupation must be distinguished by a reference letter or sign, according to its class'. However, it seems that these instructions left considerable room for personal interpretation and that at least some plans were sealed by the Board as 'first class' despite failing to conform exactly to the specification, as, for example, in the case of Leamington which omitted house numbers (although possibly the streets were not numbered in 1852). Some of these plans, including Leamington, were eventually lithographed and made generally available.

Towns sometimes opted to by-pass the Public Health Act in order to keep matters on a local level and avoid any centralised interference. Thus, large-scale plans continued to be prepared to accompany the presentation of private Bills to Parliament in the original manner and to illustrate subsequent stages of a scheme, but, nevertheless, adopting the specifications and standards of the Board of Health and the Ordnance Survey. Similarly, towns outside the parameters of the Act also took up the Board of Health's mapping specifications. The Birmingham Street Commissioners, for instance, promoted a 10-feet survey from 1850 based on a triangulation 'upon the principle adopted by the Ordnance in their surveys' and showing 'every minutiae of detail'.

The 1848 Public Health Act did not legislate for London which remained an administrative nightmare. The establishment of the Metropolitan Commissioners of Sewers in 1847 emphasised the need for a large-scale survey showing the levels to facilitate the planning and construction of a new sewer network. Consequently, London was surveyed at its own expense by the Board of Ordnance producing three sets of skeleton maps published by 1852 at scales of 6 and 12 inches and 5 feet to the mile. These maps were simply block plans showing only the outline of streets and bench marks. An index to these sheets was published at the 1-inch scale.[7] At the same time, the surveyors of the Metropolitan Commissioners of Sewers surveyed the existing sewers, entering details on the engraved 5-feet skeleton sheets as they became available. The maps and their accompanying field notebooks illuminate the practical problems of the survey and give information on the state of the streets and sewers. The Commission felt that the 5-feet scale was unable to record house drainage in the necessary detail and, consequently, surveyed some areas at 10 feet to the mile; 13 sheets were drawn covering the riverside area just upstream from the Houses of Parliament and 15 sheets of the Kennington area.

The skeleton plan provided a framework, trigonometrically correct and complete as far as street information was concerned, which could be used by other map-makers as a foundation for the production of London maps of greater accuracy and detail than before. Private map-makers surveyed and added topographical detail, most notably Edward Stanford whose 'Library Map' to some extent filled the gap until the official detailed survey could be undertaken. The in-filling of the skeleton plans was finally surveyed between 1862 and 1872, producing the largest and most detailed plan of any city ever produced, published at the 5-feet scale by 1876 on 326 sheets. The

skeleton sheets remained on sale and some were up-dated to show new topographical developments although their imprints remained unchanged. The engraving of the 25-inch sheets reduced from this survey was not completed until 1880. Because of the expense of the 5-feet survey, London was never mapped at any larger scale. The series was completely revised between 1891 and 1895 and a new edition was published from 1893. The final sheet of this '1894–96 edition', or 'New Series' as it was called, appeared in 1898. A further revision took place between 1906 and 1907 extending coverage for land registry purposes to substantial areas of Kent, Middlesex and Surrey. Between 1906 and 1923 the Ordnance Survey revised large sections of the 5-feet map for the Land Registry and extended the survey into neighbouring built-up areas. However, only detail necessary for land registration was shown and the maps are of lesser value than the full surveys.

Recognition of the inadequacy of the 5-feet scale and the system of financing the 10-feet scale, and of the experimental nature of the Board of Health plans pioneering this new type of large-scale urban cartography, led the Treasury to accept the necessity of funding Ordnance Survey mapping of a national printed town series at a larger scale which would not be dependent on contributions from local boards or on privately contracted survey. Consequently, in 1855 a scale of 10.56 feet to the mile (1:500) was introduced for surveys of all towns of over 4,000 inhabitants in Great Britain. In theory, the provisions of the 1855 policy brought large-scale mapping to all towns of appropriate size but in practice many places were restricted both as to when and how much of their contiguous built-up areas could be surveyed at public expense unless they paid the bulk of the costs in order to obtain priority in the regional schedule of mapping which favoured towns of military importance and in mining districts. Thus, Exeter, for example, was surveyed out of the regular sequence of town mapping, with the expenses met partly by the city.[8] By 1894 when the series was discontinued, 358 towns had been mapped at this scale in England, 26 in Wales and 56 in Scotland.

Generally, only a first edition of most Ordnance Survey plans was published. However, 25 plans were revised by the Ordnance Survey at its own expense and reissued as a new edition and some also underwent a process of ongoing un-noted piecemeal revision. The revised Exeter plan, for instance, showed significant topographical changes when reissued in 1888, including new terrace houses, suburban villas, railway and tramway detail, and industrial features. At least four states of the 5-feet plan of Liverpool have been identified and there was clearly a major up-dating in 1864 with 27 of the 50 sheets being revised for railways, docks, major public buildings, street names, and so on, providing the basis for the revision of the 6-inch sheets in the same year. Fifteen plans were revised by the Ordnance at the expense of town authorities between 1898 and 1908 at the 10.56 feet scale. In other cases towns conducted their own revisionary surveys. Often revisions did not cover the whole of the area surveyed for the original plan and in some cases extended coverage by surveying newly-developed contiguous areas.

Ordnance Survey town plans note dates of survey, publication and revision on each sheet. Fairly complete details of these published plans, with dates of survey and the number of sheets, are given in the catalogues of Ordnance publications.[9] Index maps to the sheets of each town were published, mainly at the 6-inch scale.

Some of the Ordnance town plans provide the earliest large-scale coverage available from the Survey, pre-dating the 25-inch plans and offering such additional information as the names of buildings and the use of commercial and industrial premises. At all scales, the plans show an immense amount of detail, ranging from antiquities to industrial premises, with the 10.56 feet scale obviously showing the most. The 13 sheet 5-feet plan of Halifax, for instance, differentiates different types of mills and names Sunday schools with denominations and usually the number of children catered for. At the largest scale, every lamp post and pillar box is shown, along with cab stands and every other type of street furniture. Even such detail as single trees, greenhouses, paths, statues and sundials appear in gardens. Doorsteps and wall thicknesses are indicated and the ground floor layout of public buildings is shown with room use defined. The labelled plan of the workhouse on the 10.56 feet plan of Alnwick, for example, portrays bedrooms and dayrooms in the segregated quarters, vagrant wards, kitchen, laundry and wash-house.[10] However, there was a tendency on the later sheets, as with the 25-inch maps, to simplify content in the cause of economy.

Towns were obviously covered by varying numbers of sheets according to the scale and the size of the town. Thus at 1:500 Nottingham, for instance, appeared on 352 sheets, Liverpool on 304, Manchester and Salford on 262, and Plymouth on 109, while Exeter was portrayed on only 41, St. Austell on 7 and Brixham on 5. Unfortunately, modern development has made the Ordnance's coverage appear uneven, with, for example, 16 towns in Devon mapped at 10.56 feet but only five in Norfolk. Coverage was distorted by the fact that town population size, which determined whether the town would be mapped or not, was defined by administrative status rather than real urban extent.

Thus, the movement for sanitary reform generally and the 1848 Public Health Act particularly generated a family of large-scale urban plans which culminated in the magnificent national 10.56 feet scale Ordnance Survey series. These plans were produced within a relatively short period before the great age of slum clearance and road building. They provided the source destined to be copied by commercial map-makers for their town plans for decades to come,[11] in the way that the pioneering sixteenth and seventeenth century town maps had been plagiarised over a long period.[12] Even today, previously unknown plans are still coming to light; for example, a Board of Health plan of Croydon, unknown to the local history library, the British Library or the current Ordnance Survey (the plan had originally been tested for accuracy by the Ordnance), was recently found in two metal drums at Addington Water Works. It was prepared in June 1850 by Messrs Banister, Preston & Alexander, costing £213 3s., and was traced through a reference in the minutes of Croydon Local

Board of Health. Similarly, sheets 2 and 3 of Terbutt's Local Board of Health plan of Toxteth Park (1856) were located in the Private Streetworks Section of the City Engineer's Department of Liverpool Corporation. Historians must be energetic and dedicated in seeking out further plans, such as the 1:528 manuscript plans of Derby and Torquay, as yet undiscovered for they represent an unparalleled source for the study of nineteenth century British urban history.[13] Each sheet represents a treasure trove of urban history and, yet, surprisingly and disappointingly, these plans are little known and even less used.

NOTES

1. The history of the Ordnance Survey's large-scale mapping of British towns is also covered in: Smith, D: 'Sources: Public health and large scale mapping' in *Modern History Review*, 4, 3; 1993.
2. See: Seymour, W.A. (ed): *A History of the Ordnance Survey*, 1981.
3. For details, see: Thompson, F.M.L.: *Chartered Surveyors. The Growth of a Profession*, 1968.
4. For details of these, other related maps and the history of cholera mapping, see: Smith, D: 'Cholera and the medical mapping of English towns', in *Bulletin of the Society of Cartographers*, 27, 1; 1993.
5. Elliston-Erwood: 'Woolwich a hundred years ago' in *Woolwich & District Antiquarian Society Annual Reports & Balance Sheets*, Vol. 31, 1954–7.
6. For details of these and other Warwickshire town plans, see: Harley, J.B.: 'The Ordnance Survey 1:528 Board of Health Plans in Warwickshire 1848–1854', in Slater, T.R. and P.J. Jarvis (eds): *Field and Forest: An Historical Geography of Warwickshire and Worcestershire*, 1981.
7. Darlington, I: 'Edwin Chadwick and the first large-scale Ordnance Survey of London', in *Transactions of the London and Middlesex Archaeological Society*, 22; 1969.
8. Harley, J.B. & J.B. Manterfield: 'The Ordnance Survey: 1:500 Plans of Exeter, 1874–1877', in *Devon and Cornwall Notes and Queries*, 34; 1978.
9. More complete and accurate details are given in the full listing of towns mapped by the Ordnance Survey in: Oliver, R.: *Ordnance Survey Maps. A concise guide for historians*, Charles Close Society; 1993. Thanks are due to Richard Oliver of the University of Exeter, who compiled the new list, for access to it prior to publication.
10. Conzen, M.R.G.: *Alnwick, Northumberland: A Study in Town Plan Analysis*, 1960, shows how large-scale maps and plans can be used in a detailed study of town growth.
11. For discussion of later town plans, see: Smith, D.: *Victorian Maps of the British Isles*, 1985; Smith, D.: *Maps and Plans for the Local Historian and Collector*, 1988.
12. Smith, D: 'The Enduring Image of Early British Townscapes', in *Cartographic Journal*, 28; 1991.
13. Details of the locations of plans privately produced for local boards of health would be gratefully received. Similarly, the author would be grateful for information on locations of the following Ordnance Survey manuscript and complete undamaged printed plans:

Manuscript	*Printed*
Ashby-de-la-Zouch 1851	Aberdeen 1899–1900
Braintree 1850–1	Aberystwyth 1904
Burslem 1850–1	Ayr 1905
Derby 1851	Coventry 1904
Hitchin 1851	Doncaster 1901
Knighton 1850–1	Dundee 1900–1
Margate 1851	Exning 1901
Newcastle-under-Lyme 1851	Gosport 1872–3
Ormskirk c.1851	Hartlepools 1901–2
Sandgate 1850–1	Kingston-upon-Thames 1865–6
Sheerness 1850–1	Leeds 1888–90, 1909–10
Torquay 1851?	Liverpool 1864
Uxbridge 1851	Portsmouth & Southsea 1872–3
Ware 1851	Sheffield 1901–3
Woolwich 1853	

DAVID SMITH

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ORDNANCE SURVEY URBAN SURVEYS AT 1:1056, 1:528 AND 1:500

	1:1056 *Survey/revision dates*	*1:528* *Survey/revision dates*	*1:500* *Survey/revision dates*
Aberdare			1867–8
Aberdeen			1866–7, 1899–1900 *Rev. town ex
Abergavenny			1878–9
Aberystwyth			1885, 1904 Rev. town ex
Abingdon			1874
Accrington	1849		1890–1
Airdrie			1858
Aldershot			1870
Alexandria & Bonhill			1859
Alloa			1861–2
Alnwick		1851, 1864	
Altrincham			1874
Andover			1871
Annan			1859
Appleby			1859
Arbroath			1859
Ashby-de-la-Zouch		1851 **MS, 1881	
Ashford			1870–1
Ashton-under-Lyme & Stalybridge	1849–50, 1874, 1878, 1891–2		
Atherton (as 'Chowbent')			1888
Aylesbury			1877
Ayr	1854–5, 1905 Rev. town ex		
Bacup	1849		1891
Banbury			1880–1
Bangor			1887–8
Barnard Castle		1851	
Barnsley	1850		1888
Barnstaple			1885
Barrow-in-Furness			1873, 1889–90
Basingstoke			1871
Bath			1882–3
Batley & Dewsbury			1888–9
Beccles			1882
Bedford			1881–2
Belper			1878
Berkhamstead			1876
Berwick-upon-Tweed		1851, 1856	
Beverley	1853		1890–1
Bideford			1885
Biggleswade			1881
Bingley	1850		1889–90

*Rev. town ex = Revised at town expense **MS = Manuscript.

	1:1056 Survey/revision dates	1:528 Survey/revision dates	1:500 Survey/revision dates
Birkenhead			1873–4
Birmingham & environs			1885–7
Birstall			1888–9
Bishop Auckland		1855	
Bishops Stortford			1877–8
Blackburn	1847		1891–2
Blackpool			1890–1
Blyth			1858
Bodmin			1880
Bolton	1847 Revised & printed at local expense with OS involvement in 1882		1889–90
Boston			1886–7
Bournemouth			1869
Bradford	1848		1889–91
Bradford-upon-Avon			1884–5
Braintree	1850–1 MS		1875
Brechin			1862
Brecon			1886–7
Brentford, Kew & Richmond	1866–70		
Brentwood			1871
Bridgnorth			1882
Bridgewater			1885–6
Bridlington	1850		
Bridport			1886–7
Brierley Hill			1881–2
Brighouse			1888
Brighton			1873–5
Bristol		A 1:528 plan was tested by the OS in the early 1850s.	1879–82
Brixham			1862
Bromsgrove			1883
Buckingham			1879
Burnley	1848		1890
Burntisland			1894
Burslem		1850–1 MS	1875–7
Burton-on-Trent			1881–2
Bury & Radcliffe	1847		1889–90
Bury St Edmonds			1883
Buxton			1877
Camborne			1876–7
Cambridge			1885–6; 10 new sheets added in 1901 at town's expense
Campbeltown			1865
Canterbury			1871–2

	1:1056 *Survey/revision dates*	*1:528* *Survey/revision dates*	*1:500* *Survey/revision dates*
Cardiff		1851 MS; lithographed at 2 feet to 1 mile	1878, 1898–9 Rev. town ex
Carlisle			1863–4, 1898–9 Rev. at town ex
Carmarthen			1885
Carnavon			1887
Castleford			1888
Chatham, Rochester & Strood			1861–3
Chelsmford		1851 MS, 1872	
Cheltenham			1883–4
Chertsey			1869
Chester			1871–3
Chesterfield			1875–6
Chesterton			1876
Chichester			1874
Chippenham			1884
Chorley	1846		1889
Chowbent (now 'Atherton')			1888
Christchurch			1869
Cirencester			1874
Cleckheaton			1889
Clevedon			1882–3
Clitheroe	1844–6, 1884		
Coatbridge			1858
Cockermouth			1863
Colchester			1875
Colne	1848		1891
Congleton			1873
Coventry		1850–1 MS	1886, 1904 Rev. town ex
Cowes (West)			1862–3
Crediton			1886
Crewe			1873
Crewkerne			1885
Croydon		A 1:528 plan surveyed by the local board of health was tested by the OS c.1851	1868, 1894–5
Cupar	1854		1893–5
Dalkeith	1852		1893
Dalton-in-Furness			1889
Darlaston			1888
Darlington	1854		
Dartford		1851 MS	
Dartmouth			1885
Darwen			1890–1
Dawlish			1887

	1:1056 *Survey/revision dates*	*1:528* *Survey/revision dates*	*1:500* *Survey/revision dates*
Deal			1871
Denbigh			1871
Derby		1851 MS (The accompanying 1:2640 plan was published privately in 1852)	1881–2
Devizes			1884
Dewsbury & Batley	1850–51		1888–9
Doncaster	1850		1888, 1901 Rev. town ex
Dorchester			1886
Dorking			1868
Douglas (Isle of Man)			1866
Dover		A 1:528 plan surveyed by the local board of health was tested by the OS c.1851	1858–9, 1863–81 Partly revised
Droitwich			1883
Dudley			1881
Dumbarton			1859
Dumfries	1847–51		1893
Dundee			1857–60, 1870–2, 1900–1 Rev. town ex
Dunfermline	1854		1896
Dunstable			1878
Durham			1856
Eastbourne			1874
East Dereham			1880–2
East Retford			1884
Eccles			1888
Edinburgh & environs	1849–55, 1876–7		1893–4
Elgin			1868
Elland			1888
Ely			1884–5
Evesham			1883
Exeter			1875–6, 1882 Minor revisions only, 1888
Exmouth			1887–8
Exning			1901 Initial mapping at town ex
Falkirk			1858–9
Falmouth			1877–8
Farnham			1871
Farnworth			1889
Farsley, Stanningley & Pudsey			1889
Faversham	1844		1865
Fleetwood			1890

	1:1056 *Survey/revision dates*	*1:528* *Survey/revision dates*	*1:500* *Survey/revision dates*
Folkestone			1871
Forfar			1860–1
Forres			1868
Frome			1884
Gainsborough			1884
Galashiels			1858
Garston			1888
Gateshead			1856, 1894 (in Newcastle survey), 1906–7 (in Newcastle survey: rev. town ex)
Girvan			1857
Glasgow & Rutherglen			1857–8, 1892–4
Glossop			1878
Gloucester		1851 MS	1881–2
Goole			1889–90
Gosport			1859–62, 1872–3
Grantham			1885–6
Gravesend			1863
Great Driffield			1891–2
Great Harwood & Clayton-le-Moors			1890
Great Marlow			1874
Great Yarmouth			1883
Greenock			1857
Grimsby (Great)			1886–7, 1906–7 Partly rev & extended at town ex: 5 plans partly revised; 5 extension plans
Guildford			1868–9
Haddington	1853		1893
Halifax	1849		1888–9
Halstead			1875–6
Hamilton			1858
Hanley			1865–6, 1874–5
Harrogate			1889–90
Hartlepools			1857, 1901–2 Rev probably at town ex
Harwich			1874
Haslingden	1846		1890–1
Hastings			1872
Haverfordwest			1887
Hawick			1857–8
Hebden Bridge			1888
Heckmondwike			1889
Hemel Hempstead			1877
Henley-on-Thames			1877
Hereford			1884–5

	1:1056 *Survey/revision dates*	*1:528* *Survey/revision dates*	*1:500* *Survey/revision dates*
Hertford			1879–80
Hexham			1860–1
Heywood	1848		1890–1
High Wycombe			1874
Hinckley			1886
Hindley			1888
Hitchin		1850–1 MS; lithographed by Day & Son, 1852; 1878–9	
Holyhead			1886–7
Holywell			1869
Horncastle			1886–7
Hornsey		1893–4	
Horsham			1874–5
Horwich			1892
Howden	1849		
Hucknall (Torkard)			1877–8
Huddersfield	1848–9		1887–8
Hull, see Kingston-upon-Hull			
Huntingdon & Godmanchester			1884
Hyde			1871
Idle			1890
Ilfracombe			1886–7
Ilkeston			1878–9
Ilkley			1890–2
Inverness			1867–8
Ipswich			1880–1
Irvine			1859
Jarrow (& Wallsend)			1895
Jedburgh			1858
Keighley	1849		1889–90
Kelso			1857
Kendal			1857–8
Kettering			1884
Kidderminster			1882–3
Kidsgrove			1876
Kilmarnock			1856–7
Kings Lynn			1883
Kingston-upon-Hull	1853 Enlargement of the 1:1056 survey produced in MS for the local board of health at 1:528		1888–90
Kingston-upon-Thames	1865–6		
Kirkcaldy	1855		1894
Kirkcudbright	1850		1893
Kirkintilloch			1859
Kirriemuir			1861

	1:1056 Survey/revision dates	*1:528 Survey/revision dates*	*1:500 Survey/revision dates*
Knaresborough	1849		1889
Knighton		1850–1 MS	
Knottingley			1891
Lanark			1858
Lancaster	1845		1890–1
Leamington			1885
Leeds	1847		1888–90, 1909–10 Partial rev & extension: 63 plans revised; 84 extension plans
Leek			1876–7
Leicester			1884–5
Leigh			1888
Leighton Buzzard			1878–9
Leominster			1885
Lewes			1872–3
Lichfield			1882
Lincoln			1885–6
Linlithgow	1855		
Liskeard			1881
Littleborough			1890
Liverpool	1847–8, 1864 Partial rev: 27 sheets revised		1888–90
Llandudno			1887
Llanelly			1877
London	1862–72, 1893–5, 1906–7 26 additional sheets, 1906–23 58 sheets partially revised for Land Registry purposes	1851 MS	
Long Eaton			1879
Longton			1856–7, 1874–7
Loughborough			1883
Louth			1887
Lowestoft			1883
Ludlow			1883
Luton			1878–9
Lymington			1866
Lytham			1891
Macclesfield			1870
Maidenhead			1874
Maidstone			1865–6
Maldon			1873
Malton (New Malton	1850		1889–90
Malvern (Great Malvern)			1884
Manchester & Salford			1888–9
Mansfield			1876
March			1886

	1:1056 *Survey/revision dates*	*1:528* *Survey/revision dates*	*1:500* *Survey/revision dates*
Margate		1851 MS; Litho-graphed by Day & Son 1852, 1872–3	
Maryport			1863
Maybole			1856–7
Melton Mowbray			1884
Merthyr Tydvil		1851 MS, 1874	
Middlesborough	1852, 1853–7		
Middleton	1848		1889
Mirfield			1888
Mold			1869–70
Monmouth			1880
Montrose			1861–2
Morecambe			1889–90
Morley			1889
Morpeth			1859
Mossley			1890
Musselburgh	1853		1893
Nairn			1867–8
Nantwich		1851 MS, 1874	
Neath			1876
Nelson			1890
Newark-on-Trent			1883
Newbury			1878
Newcastle-under-Lyme		1851 MS	1875–6
Newcastle-upon-Tyne & Gateshead			1857–8, 1894, 1906–7 Partially rev at town ex: 101 plans rev; 23 extension plans
New Malton, see Malton			
Newmarket			1884
Newport (Isle of Wight)			1862
Newport (Monmouth)			1881
Newton Abbot			1886–7
Newtown			1883
Northampton			1883–4
Northwich			1875
Norwich			1880–3
Nottingham			1879–81
Nuneaton			1886
Oban			1867–8, 1870
Oldbury			1882
Oldham	1848		1879

	1:1056 *Survey/revision dates*	*1:528* *Survey/revision dates*	*1:500* *Survey/revision dates*
Ormskirk	1848–9 Enlargement made in MS at 1:528 for the local board of health with additional sanitary information		1890–1, 1891
Oswestry			1874
Otley			1889
Oxford			1873–5
Padiham			1890
Paisley			1857
Peebles			1856
Pembroke & Pembroke Dock			1860–3
Penrith			1859–60
Penzance			1875–6
Perth			1859–60
Peterborough			1884–5
Peterhead			1868
Petersfield			1868
Petworth			1872
Plumstead & Woolwich		1866, 1866–8, 1893–4	
Plymouth & environs			1855–7 Only 28 of 109 sheets on general sale. Also pub. at 1:5280 in 1859, 1892–3
Pontefract	1849		1889
Pontypool			1877–8
Poole			1886
Port Glasgow			1856–7
Portobello			1893–4
Portsmouth & Southsea			1858–64, 1872–3
Prescot	1848		1890–1
Preston	1846–7		1890–1
Pudsey			1889
Ramsbottom			1891
Ramsey (Isle of Man)			1868
Ramsgate			1871–2
Ravensthorpe			1888
Rawtenstall			1891
Reading			1875–6
Redditch			1883
Redhill			1870
Redruth			1877
Reigate			1870
Rhyl			1870–1
Richmond (North Riding)			1891–2
Ripon	1853		1890–1

	1:1056 Survey/revision dates	1:528 Survey/revision dates	1:500 Survey/revision dates
Rishton			1891
Rochdale	1848		1889–91, 1908 Partial re-survey & rev. town ex
Rochester, see Chatham, etc			
Romford			1870
Romsey			1865
Rotherham	1851		1888
Rothesay			1862–3
Royton			1891
Rugby		1850–1 MS	1885–6
Runcorn			1874
Rutherglen			1858, 1892–4 (in Glasgow environs' survey)
Ryde			1863
Rye			1871–2
St. Albans			1877–8
St. Andrews	1854		1893
St. Austell			1878–9
St. Helens	1849–51		1881, 1891–2
St. Ives (Cornwall)			1876
Saffron Walden			1875–6
Salford, see Manchester, etc			
Salisbury			1878
Sandgate		1850–1 MS	
Sandwich			1871
Scarborough	1850		1890–1
Selby	1847		1890–1
Selkirk	1865		
Sevenoaks			1868–9
Sheerness		1850–1 MS, 1861–2	
Sheffield	1849–51		1888–91. 1901–3 Partial revision town ex: 64 plans rev; 77 newly surveyed. 1903–4 Immediate partial rev of 22 plans
Shepton Mallet			1884
Sherborne			1886
Shields & Tynemouth		1854–7	1894–5
Shipley & Saltaire			1889–90
Shrewsbury			1879–80
Skipton	1850		1890
Sleaford			1887
Slough			1874
Southampton	1845–6 MS		1865–7
Southport			1889–90
Sowerby Bridge			1888
Spalding			1886–7
Stafford			1878–9

	1:1056 Survey/revision dates	1:528 Survey/revision dates	1:500 Survey/revision dates
Stamford			1884
Stanningley (with Farsley, etc)			1889
Stirling			1858
Stockport	1849, 1873. 1893		
Stockton-on-Tees		1854–5	1890–1
Stoke-on-Trent			1875–7
Stone			1879
Stonehaven			1864
Stourbridge			1882
Stowmarket			1884
Stranraer	1847, 1893		
Stratford-on-Avon		1850–1 MS	1885
Strathavon			1858
Strood, see Chatham, etc			
Stroud			1881–2
Sudbury			1881
Sunderland		1855–7	
Sutton-in-Ashfield			1876–7
Swansea		Triangulation only undertaken by OS c.1851 for a 1:528 plan for the local board of health	1876
Swindon			1884
Swinton			1889
Tamworth			1882
Taunton			1886
Tavistock			1882–3
Teignmouth			1887
Tenby			1887–8
Tewkesbury			1882–3
Thetford			1881
Tiverton			1886–7
Todmorden	1849		1888–9
Tonbridge			1866
Torquay (Tormoham)		1851? MS	1860–1
Totnes			1886–9
Tring			1877
Trowbridge			1885
Truro			1877–8
Tunbridge Wells (Kent)			1866
Tunbridge Wells (Sussex)			1872
Tunstall			1876–7
Tyldesley			1888
Tynemouth, see Shields, etc			
Ulverston	1850		1889
Uxbridge		1851 MS, 1863–4	
Wakefield	1848		1888

	1:1056 Survey/revision dates	1:528 Survey/revision dates	1:500 Survey/revision dates
Walsall			1883–4
Wallsend, Jarrow & environs			1895
Waltham Abbey			1869
Wave		1851 MS Lithogr. 1851–2, 1877–8	
Warminster			1885–6
Warrington	1849		1888
Warwick		1851 MS	1885
Watford			1871
Wednesbury			1880
Wellingborough			1884
Wellington (Salop)			1880–1
Wellington (Somerset)			1886–7
Wells			1885
Welshpool (Trallwng)			1883–4
West Bromwich			1885–6
West Cowes			1862–3
Weston-super-Mare			1883–4
Weymouth			1863
Whitby	1849		1891–2
Whitchurch			1879
Whitehaven			1862–3
Wick			1872
Widnes			1888
Wigan	1847		1889
Wigton (Cumbria)			1864
Wigtown	1848, 1894		
Winchester			1868–70
Windsor	c.1844? MS survey for the Commissioners of Woods & Forests, 1866–7		
Wisbech			1885–6
Withington			1880–1, 1892
Wokingham			1871
Wolverhampton			1884–5
Woolwich		1853 MS Lith. by Maclure, Macdonald & Macgregor. 1866–8, 1893–4	
— & Plumstead			
Worcester			1883–4
Workington			1863
Worksop			1884
Worthing		1853 MS	1875
Wrexham			1871
Yeovil			1885
York	1849–51		1889

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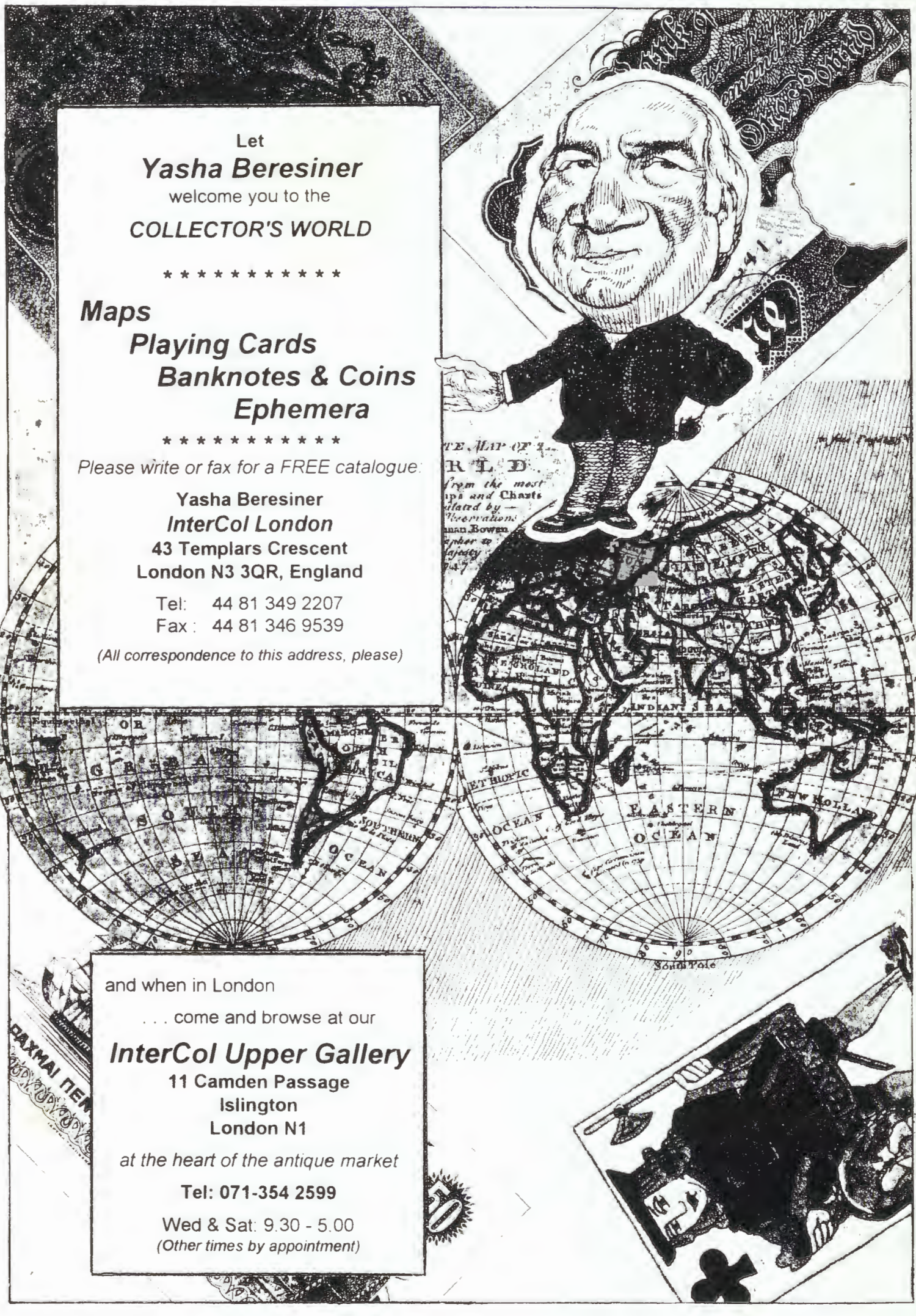
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