

White Watson (1760-1835) and his Geological Tablets

T. D. Ford

Abstract: Available information on White Watson's unusual geological sections, formed by inlaying samples of the strata in marble slabs, is updated. The history and whereabouts of 25 out of nearly 100 Tablets known to have been made are summarized.

White Watson was a pioneer Derbyshire geologist and craftsman, mainly in marble, whose work culminated in the publication of *A Delineation of the Strata of Derbyshire* in 1811 and in his preparation of "Tablets" illustrating the disposition of the strata of Derbyshire and occasionally of adjacent counties. I compiled a biography of Watson with a description of his contribution to geology in 1960 and a condensed version appeared in 1962. The 1960 version was re-issued with slight revisions as an introduction to the Moorland Publishing Co.'s reprint edition of Watson's *Delineation* in 1973. Further details have been added by Stanley (1973, 1976), Torrens (1975, 1977, 1978), Riley and Torrens (1980) and Cooper (1984).

The purpose of the present note is to record some further examples of White Watson's tablets. These show the disposition of the Carboniferous Limestone,

toadstones, mineral veins, Millstone Grit sandstones and shales, and the Coal Measures along a series of lines across the Peak District and adjacent areas. The tablets were made by inlaying samples of the strata concerned in the appropriate arrangements of anticlines and synclines into slabs of Ashford Black Marble. Carrara marble was used for the sky and the title and place names were engraved in the black marble. Nearly a hundred are recorded in Watson's Cash Book (partly published by Robinson, 1990) and some of the purchasers can also be identified amongst the subscribers to the *Delineation* book of 1811. Prepared over a period from 1785 to 1831, the early tablets are diagrammatic only (e.g. Fig. 1), but from 1807 examples representing sections across Derbyshire and parts of adjacent counties were made with lengths to a scale of either 1 inch to 1 mile or ½ inch to 1 mile, but with

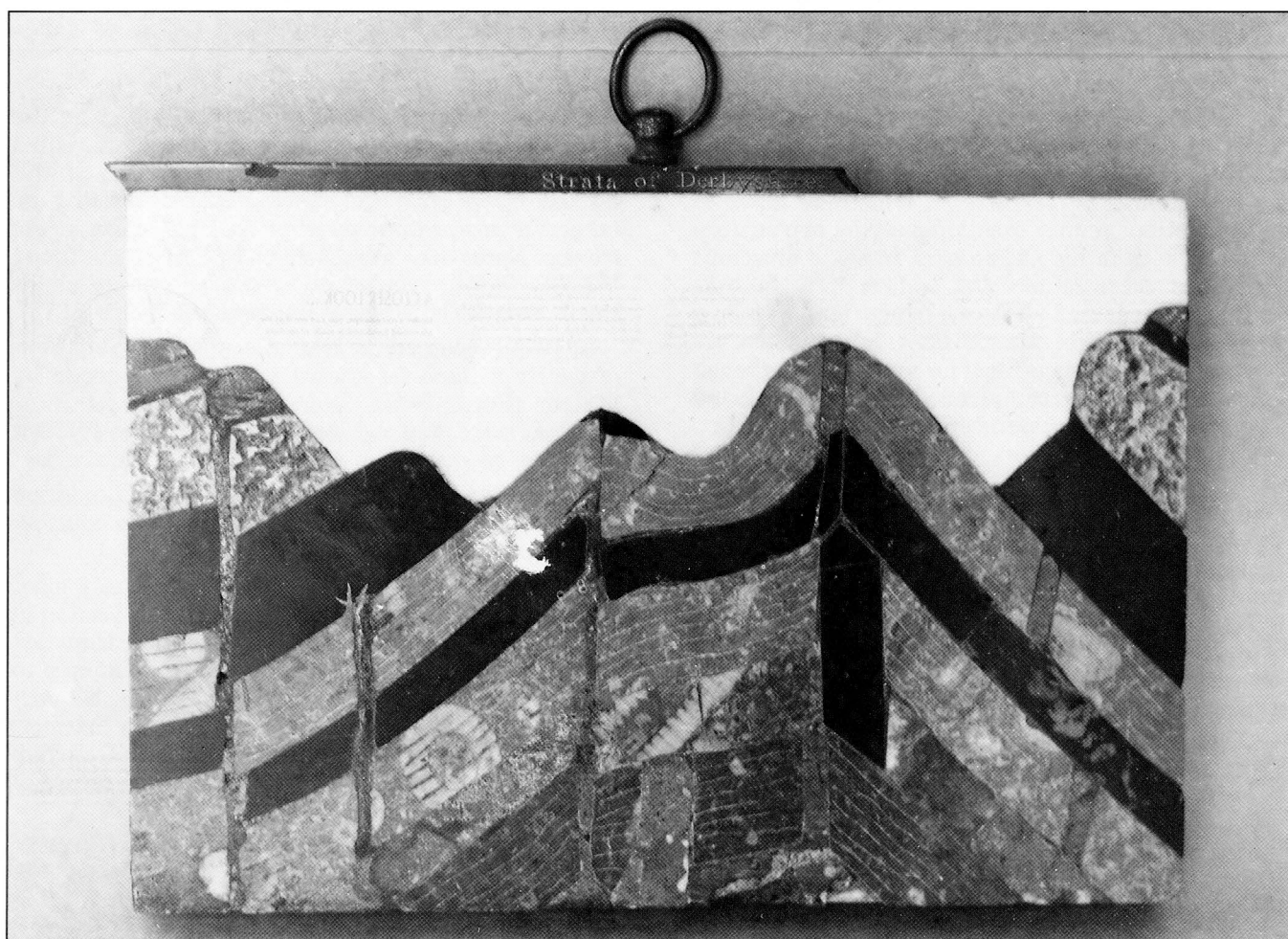


Fig. 1. Tablet of "A Mountain in Derbyshire", no date but probably made between 1794 and 1802, inscribed on the edge "Brown, Son & Maw, London". (Photo by Saffron Walden Museum).

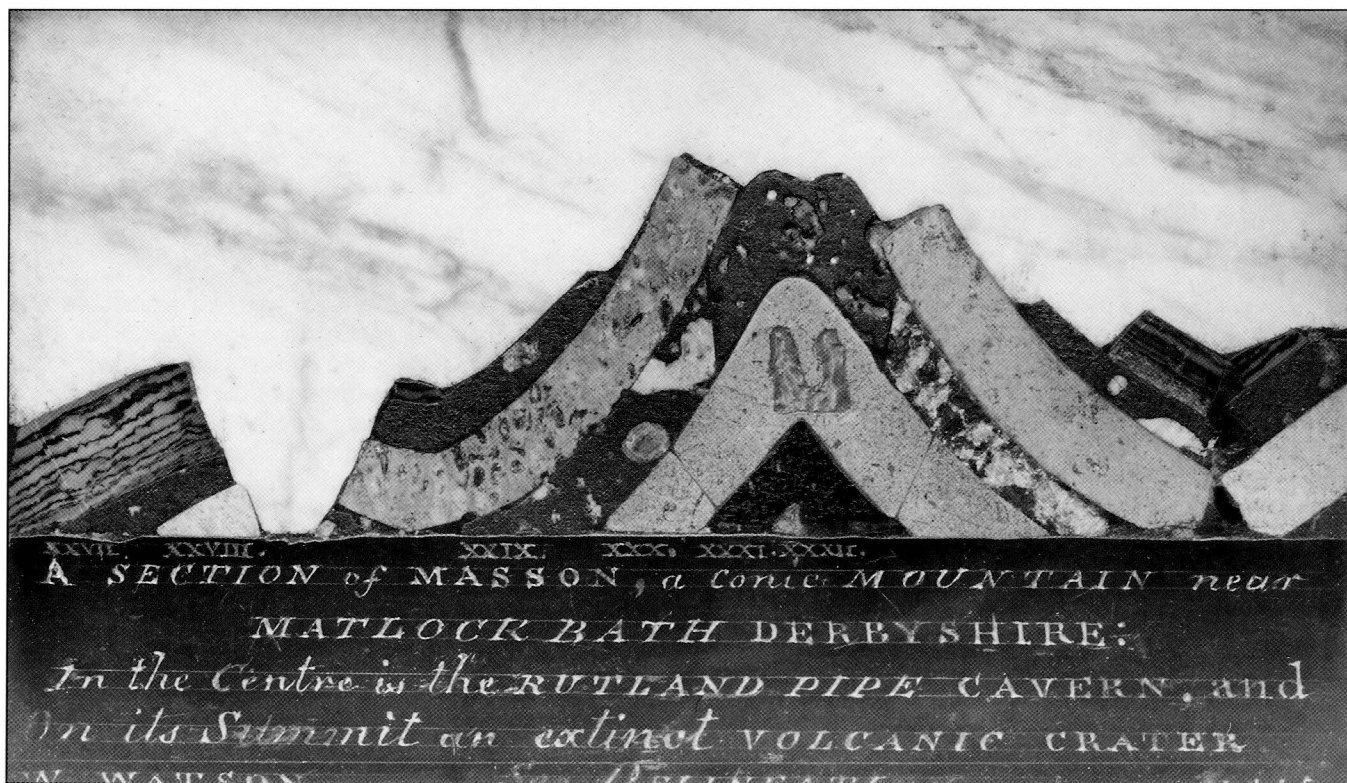


Fig. 2. Tablet of "A Section of Masson (Hill), Matlock Bath", 1815. In spite of the anticlinal form, Watson seems to regard the crest as a volcanic crater. (Photo by Sotheby's, Sussex).

thicknesses and heights exaggerated (Figs 2-4). Some of the early tablets have the thicknesses of stratal units engraved in the margins. Most tablets also have engraved Roman numerals to tie the strata shown to the descriptions, either in accompanying explanatory leaflets or later in his *Delineation*. In some museums or libraries these tablets and leaflets have become separated. The later *Delineation* tablets tend to follow main roads instead of straight lines. Some tablets are provided with brass rings fitted for wall hanging, though in one letter Watson recommended Professor Buckland to provide "a stay underneath" for extra support. Tablets varied in price up to 16 guineas.

Watson's classic section across the whole Peak District was prepared as a folding printed plate in his *Delineation*, and was based on a manuscript section drawn "by Mr Farey for White Watson" in November 1807 (note in Derby C.B.C. Local Studies Library MS 9626). It was given to the Duke of Devonshire on 20th February 1808, who rewarded Watson with a gift of 10 guineas, but it can no longer be found at Chatsworth. Farey and Watson apparently cooperated on this section as there is a note in Watson's notebooks "Nov 25th 1807 Mr. Farey and Watson chaise Bolsover-Langwith-Buxton tracing measures for a section hire chaise a good deal of time in Chesterfield stayed overnight at the Falcon £5-18-6". Farey first met Watson when he paid 2s 6d to see the "fossils" on August 22nd 1797. In the first decade of the 19th century Farey drew sections of the strata of various parts of England, but they remained unpublished (see Ford, 1967; Ford and

Torrens, 1989). In 1806 Farey began surveying the minerals and agriculture of Derbyshire and visited Watson several times. They doubtless had many fruitful discussions on geological matters, each stimulating the other. In turn, information on the disposition of the strata of Derbyshire was passed on by Farey to his friend William Smith, who incorporated an outline in his classic map of the Strata of England and Wales (1815).

In 1973 I recorded the whereabouts of 17 tablets out of nearly a hundred known to have been made by Watson (Ford, 1973). Some have changed hands or locations since then and some additions to the 1973 list may now be made.

Two tablets were sold by Sotheby's for A. Longsdon in October 1992, and are illustrated here by courtesy of Sotheby's (Figs 2, 5):

1. A *Delineation* tablet, on a scale of 1 inch to 1 mile, $38\frac{1}{2} \times 5\frac{1}{2}$ inches (96×14 cm) entitled "A Section in the Strata of Derbyshire, forming the surface from east to west" (actually Coombs Moss, north of Buxton to Bolsover, near Chesterfield). Sold for £3800 (= hammer price, £4180 with commission etc.) to John Starmer, antique dealer of Liphook, Hampshire, and later to David Pickup, who in turn sold it to John Bedford of Dowdeswell, near Cheltenham (Fig. 5).

2. A small tablet entitled "A Section of Masson, a conic mountain near Matlock Bath, Derbyshire", signed "W. Watson 1815". It measures $5\frac{3}{4} \times 3\frac{3}{8}$ inches (14.5×8.5 cm) (Fig. 2), and was sold for £2400 to John Starmer, and later to David Pickup, who in turn sold it to John Bedford. It is only about the size of a postcard but with

a very wide gilded wooden frame and gives a vertically exaggerated section of the Masson Hill anticline and the adjacent Derwent Gorge; the toadstone outcrop on the summit is referred to as a crater!

James Longsdon of Longstone was among the original subscribers to the *Delineation*. He died in 1827 and his collections passed down through the family. Notice of an auction sale of the Longsdon collections by L. F. Bingham in Bakewell on December 17th 1896, includes two lots, which are tablets matching the Longsdon/Sotheby's ones noted above, i.e. Lot 94 — a "Delineation Section" and Lot 95 — "an Inlaid Tablet illustrating High Tor, Heights of Abraham and Masson Hill". As no other High Tor-Masson Hill tablet is known it is almost certain that the latter is the same as that sold recently at Sotheby's. A cutting stuck in the flyleaf of the sale catalogue says that Lot 94 was thought to be worth £12 but was sold for £4, and other prices were ridiculously low. The Bingham sale raises the problem of how the tablets were still at Little Longstone Hall until the 1990s and one can only assume that they were bought back by some member of the family and returned home. Sotheby's 1992 prices are somewhat higher! Previously, in 1879, Bingham lent a substantial collection of White Watson's material for an exhibition at Derby Museum but whether this included tablets is not known, nor is it known how Bingham came to have the material.

Subsequent to Sotheby's sale, John Starmer put the two tablets in to Christie's Scientific instruments sale on May 6th 1993 and the Masson Hill section was sold for £3300 to David Pickup, antique dealer of Burford,

Oxfordshire. The *Delineation* section did not reach its reserve price and was later sold privately to David Pickup for £5000. The two tablets have since been sold to John Bedford. By the time this note is published they may well have been sold again!

3. A double-sided tablet illustrating a "Section of the Strata of Derbyshire" on one side and on the other a section of the folded and faulted strata and the copper ore veins in Ecton Hill, Staffordshire, made by White Watson about 1800 is at the Hancock Museum, Newcastle-upon-Tyne (Stanley, 1976). It is signed by White Watson, F.L.S., measures $6\frac{3}{4} \times 4\frac{1}{2}$ inches (17.5×11.5 cm) and has a brass ring for hanging.

4. A double-sided tablet is in Saffron Walden Museum, Essex, and shows the same diagrammatic section through a double anticline of Carboniferous Limestone on one side (Fig. 1) and a section through Ecton Hill on the other. It is almost identical to the Hancock Museum tablet (No. 3) and is also very similar to tablets in Derby Museum and in the Natural History Museum. However, the Saffron Walden Tablet has "(Bro)wn Son & Maw, London" engraved on the damaged edge (Bro is missing). It is slightly smaller than the Hancock Museum tablet and measures $6\frac{1}{2} \times 4\frac{1}{2}$ inches (16.7×11.5 cm). It also has a brass ring inset for hanging it on a wall. It is not dated but such tablets are known to have been made between 1794 and 1802, possibly later. Torrens (1992) has taken the marginal engraving to indicate that others made tablets besides White Watson, i.e. Brown's marble works in Derby, in which the pioneer Derbyshire mineralogist John Mawe

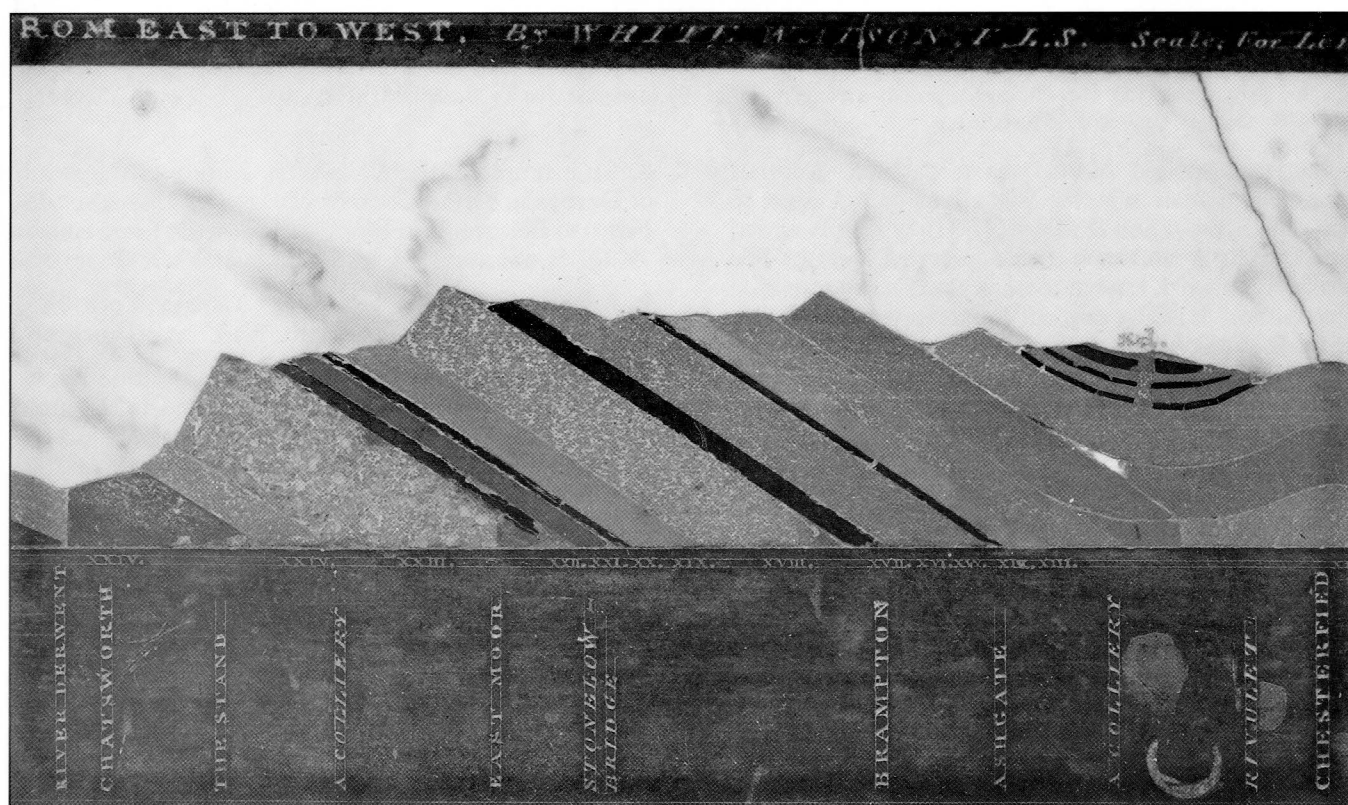


Fig. 5. Enlargement of part of a Tablet closely similar to Figure 3 above showing detail of the Millstone Grit from Chatsworth to Chesterfield; no date but probably about 1815. (Photo by Sotheby's, Sussex).

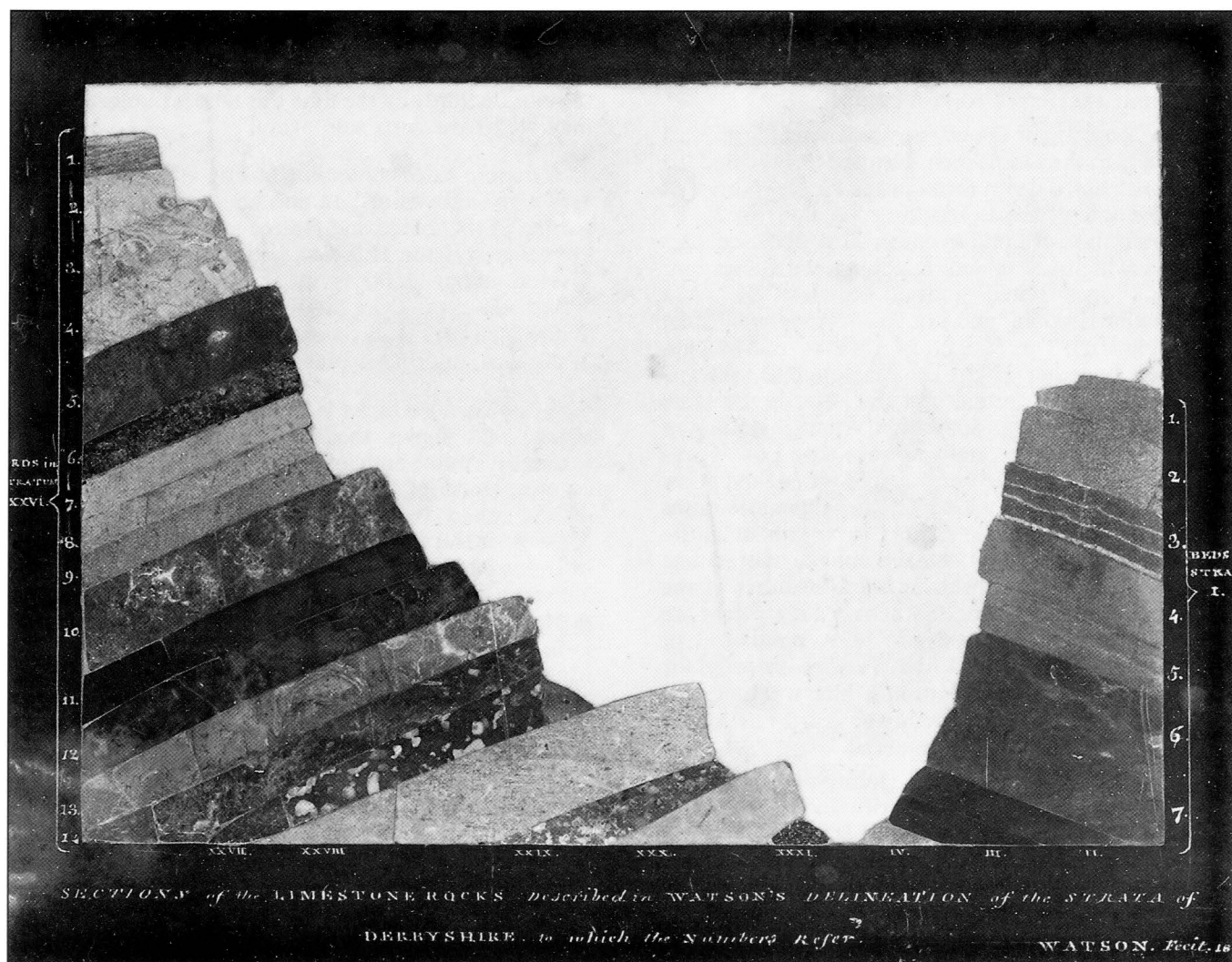


Fig. 6. Tablet showing a pseudo-escarpment arrangement of "Limestone Rocks described in Watson's Delineation", 1821. (Photo by Oxford University Museum).

(sometimes spelled Maw) was a partner. Another possible explanation is that Watson made the tablet to order for Brown, Son & Mawe, and they simply added their mark, a common trade practice today. The similarity to work known to be Watson's suggests that Brown, Son & Mawe copied Watson's work or that it really is Watson's.

5 and 6. In 1973 I noted that two tablets were in the possession of Dr. Arthur Raistrick. He died in 1991 and his geological collection including the two tablets is now in the Department of Civil Engineering, University of Bradford. His tablets include a "Section of the Strata in Derbyshire" made in 1797 and accompanied by a 26 page explanatory pamphlet, and a "Section of the Strata in Bewerley Liberty, Yorkshire" (the Greenhow Hill to Pateley Bridge area) by White Watson, F.L.S. 1800; made and sold by the author only, and accompanied by a 12 page explanatory leaflet, printed by H. Baldwin & Son, New Bridge St. London. The Raistrick tablets are duplicates of those in Derby Museum illustrated by Moyes (1990).

7. A small-scale version of the *Delineation* tablet, 52cm long, was lent for display at Loosehill Hall, Castleton in the 1980s, and is now in private hands in Bakewell.

8. An example of the *Delineation* section of the strata of Derbyshire from Coombs Moss (near Chapel-en-le-Frith) to Bolsover is in Blackburn Museum (see Stanley, 1976). It measures 21 × 6½ inches (53 × 16cm).

9. A tablet of a section of Bewerley Liberty, Yorkshire, is in private hands at Osberton Hall, near Worksop.

10. A small tablet of a "Section of Limestone Rocks Described in Watson's Delineation" dated 1821 is now at Oxford University Museum. Measuring 15 × 11½ inches (37.5 × 29.5cm), this has a sky of white marble over a valley flanked by two pseudo-escarpments composed of sequences of limestones and toadstones dipping outwards; numerals keying the sequences to the *Delineation* book are engraved in the margins (Fig. 6). This small tablet was despatched to Oxford together with the two *Delineation* style tablets previously recorded at Oxford. One is the Coombs Moss (Buxton) to Bolsover section (Fig. 3), and the other is from Grange Mill to Alton (northeast of Ashover) (Fig. 4); both measure approximately 41 × 10 inches (104 × 26cm).

11. A double-sided tablet almost identical to that at the Hancock Museum (No. 3), measuring 4½ × 6⅞ inches (11.5 × 17cm) was sold at Christie's on September 24th

1993, and bought by Derby Museum for £3500. Its history prior to the sale is not known.

12. A variant from the usual geological tablets has recently been uncovered in Chatsworth House. It is a spray of native copper mounted on white marble in a frame of black marble with a fillet of white marble. Although not signed it is described in Watson's own catalogue and is clearly his work.

Some background to the production, sale and distribution of tablets has emerged from Watson's correspondence. A draft of a letter to William Buckland in the Bateman MSS in Sheffield Museum refers to the two long tablets being sent in 1822 to Buckland at the Radcliffe Library in Oxford and, with the "Limestone Rocks" Tablet, they are now in the Oxford University Museum. They cost 16 guineas each. Watson's two letters to Buckland are also preserved in the University Museum. In his draft letter Watson noted that the crate was being sent by canal from Cromford and that the box contained a bonus of a Bewerley Liberty tablet, though this cannot be found at Oxford today. He also offered Buckland a tablet composed of Derbyshire toadstones designed like two pyramids, price £3. No pyramidal tablet is known today, unless this is a peculiar description of the "Limestone Rocks" tablet.

Amongst White Watson's many customers for tablets was William Bateman, antiquary, of Middleton-by-Youlgreave, Derbyshire. Much of William Bateman's material, and his son Thomas's, found its way to Sheffield Museum after his death but no Tablets can be found now. However, the Bateman MSS in Sheffield Museum include a collection of White Watson letters, 23 from Watson to Bateman, 69 from various correspondents to Watson and a scatter of rough drafts of letters from Watson to various people (Riley and Torrens, 1980). Some of these throw interesting light on the supply of tablets. In November 1831 Watson was trying to raise money by disposing of three tablets by lottery: one was a *Delineation* tablet, another a section from Grange Mill through Ashover to Alton, and a third was simply one composed of specimens of marbles, spars, ores, etc. Further light on the supply and demand for tablets is in White Watson's cash book (Robinson, 1990).

A letter from Watson to William Manning, M.P on 8th July 1830 recorded a recently completed tablet "representing the principal Strata of England from London, thro' Leicestershire and Derbyshire into Nottinghamshire, Price £6". No Tablet of such an extended section has been located today.



Fig. 7. Collection of sawn limestone slabs with cabinet and catalogue of "A Collection of Fossils, the Produce of Derbyshire, collected and arranged by White Watson, F.L.S., Bakewell, 1797". (Photo by the Booth Museum, Brighton).

Part of White Watson's business was the supply of collections of specimens of rocks, minerals and fossils to clients' orders. Some of these were simply small sawn and polished slabs of various rocks, including marble, and samples of mineral veins. Few of these Watson collections are recognizable entities today as the specimens have been merged with larger collections, but John Cooper of the Booth Museum in Brighton has sent me the accompanying photograph of a seven-drawer cabinet of small slabs compiled in 1796 (Fig. 7). It was bought by Sir Cecil Bishop, F.R.S. in Buxton in August 1796 (the MS catalogue is dated 1797) and was presented to Brighton Museum in 1935 by his descendant, the Baroness Zouche of Haryngsworth (now Harringworth, near Corby, Northamptonshire). Cooper gave a short description of it in 1984 and it is currently on loan to Buxton Museum, Derbyshire.

In 1960 and 1973 I recorded that I had found no trace of Watson having any children, but research by Edward R. Meeke has revealed firstly that Watson's wife was a widow, Mrs. Barker, with two children, who retained the name Barker, and secondly that Watson was assisted by a girl, Sarah, who was not a Barker. Sarah married James Bradbury and had two sons, James Watson Bradbury and White Watson Bradbury; these names suggest that Sarah had a close family connection with White Watson, though no baptismal or marriage certificate for Sarah has been found. Sarah may have been an unrecorded daughter or niece of White Watson. The great grandson Charles Bradbury was a Bakewell builder who later kept an antique shop in Baslow in the 1950s and 1960s.

If any reader knows of any more White Watson tablets, collections or manuscripts I would be pleased to know the details.

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Trevor D. Ford
Department of Geology
University of Leicester
Leicester
LE1 7RH

Appendix: a list of all 25 tablets now known to exist. Those marked with an asterisk are additions or amendments to the 1973 list.

Derby Museum:

- 1 tablet of the strata of Derbyshire from Buxton to Bolsover as in the *Delineation* (1811).
- 1 tablet of the strata at Ecton Hill, Staffs. (c.1797).
- 1 tablet of "A Mountain in Derbyshire" (c.1791).
- 1 tablet of the strata in Bewerley Liberty, Yorks. (c.1797).
- 2 double-sided tablets (one *) of a section of "A Mountain in Derbyshire" with "Strata of Ecton Hill" on the back (1794).

Manchester Museum:

- 1 tablet of the strata as in the *Delineation*, inscribed 1822.

Natural History Museum, London:

- 1 tablet of the strata in Bewerley Liberty (c.1797).

Oxford University Museum:

- *1 tablet of limestones (in pseudo-escarpments) dated 1821.
- 1 tablet of the strata as in the *Delineation*, inscribed 1822.
- 1 tablet of the strata of Derbyshire from Alton via Ashover and Matlock to Grange Mill inscribed 1822.

Leicester Museum:

- 1 tablet of toadstones, lavas and whinstones (1809).

University of Bradford:

- *2 ex-Raistrick collection tablets, one of "The Strata of Derbyshire" (1797) and the other of Bewerley Liberty (1800), as noted above.

*The Longsdon tablets,

- with John Bedford at the time of writing (June, 1993).

1 *Delineation* section.

- 1 of High Tor, Heights of Abraham and Masson Hill, Matlock signed and dated 1815.

Hancock Museum, Newcastle-upon-Tyne:

- *1 double-sided tablet with a "section of the Strata of Derbyshire" on one side and "The Strata and Copper Veins of Ecton Hill" on the other.

Blackburn Museum:

- *1 *Delineation* tablet of the Strata from Coombs Moss to Bolsover, 53 × 16cm.

Saffron Walden Museum:

- *1 double-sided tablet almost identical to tablets in the Derby, Hancock and Natural History Museums engraved "Brown Son & Maw, London" (see discussion above).

Chatsworth House:

- 2 tablets of Derbyshire "Fossils" (comparative slabs of rocks and minerals), one dated 1788.
- 1 tablet of 18 varieties of toadstone.
- *1 mounted dendritic display of native copper in an oval slab of black marble with edging of white marble.

Osberton Hall:

- 1 tablet of Bewerley Liberty, Yorkshire.

In private hands:

- *1 *Delineation* tablet at ½ inch: 1 mile scale, exhibited at the Old House Museum in Bakewell in the summer of 1994.