HAMPSHIRE WELL SECTIONS.

[Second Paper.]

By W. Whitaker, B.A., F.R.S., Pres. G.S., Assoc. Inst. C.E.

In my former paper (*Proceedings* No. iii., pp. 17—36) a list of the well-sections in the county, of which accounts had been published up to 1889, was given. Since then a more detailed account of the Fordingbridge boring has appeared (*Rep. Brit. Assoc.* for 1895, p. 19), but the only additional sections known to me are in the Geological Survey Memoir of 1889, on the Isle of Wight, in which wells at the following places are described for the first time:—Carisbrook, Haven Street (2), Knighton (3), Newport (6), Parkhurst (4), St. Helen's (3), Spithead Defences (2), Staplers, West Cowes (2), Woodvale, and Wootton (8); or in all. 33.

The accounts printed for the first time in my paper number 24, whilst 21 had appeared before, so that the number of published well-sections in Hampshire is still only 78. The addition of 55 now may therefore be the more acceptable, bringing the total to 133. Further particulars of three of the 78 are also given (Gosport, Headley, and Newport).

Of the new sections two (at South Hayling and at Portsmouth) reach to the depth of 700 feet, or a trifle more, and ten others to depths from 300 to 500 feet.

Any special points of interest are noticed with the sections. The most remarkable boring is that near Upham, where the bottom 45 feet differs from any record I know of, and is very puzzling.

Where not otherwise stated the figures stand for feet. Words in square brackets have been added to the descriptions. The various sources of information are duly acknowledged under each section, and I have to thank many kind contributors.

Aldershot. *High Street, Messrs. Gale & Polden, about a sixth of a mile N.E. of the Railway Station, and on the south-eastern side of the railway,* 1897.

Made and communicated by MESSRS. LEGRAND and SUTCLIFF.

Some signs of water in the last few feet of the Chalk. Water only rose to about 70 feet down.

The old boring was made with gas-pipes of 4 inches diameter, which were damaged some 200 feet down and had to be cut through.

		Thickness.	Depth.
Old borehole		—	217
London Clay.]	Shelling out: Blue clay	33	250
	Shelling out: Black pebbles and clay	20	270⅓
	Blue clay	68½	338
	Blue sandy clay	2½	341
	Green and grey sandy clay	4	345½
[Reading Beds, 76½ feet.]	Mottled clay	23½	368
	Grey sandstone	1½	370
	Mottled clay	½	370½
	Buff clayey sand	10	380½
	Fine grey blowing sand [specimen from 380½ feet, sharp buff sand]	4½	385
	Dark sandy clay	1½	386½
	Hard grey sand	2½	389
	Hard grey sandy clay	2½	391¼
	Dark clay	6¾	398
	Tough greyish sandy clay	4¾	402¼
	Blue clay	¼	403
	Blue sandy clay	3½	406½
	Green and grey sand	5½	412
	Green sandy clay	2½	414½
	Green sandy clay and pebbles	2	416½
	Green sandy clay	5	421½
[Upper Chalk, 52½ feet.]	Chalk and flints	½	422
	Soft clay-like chalk	16	438
	Soft chalk and occasional small flints, 6 inches of flint at the base	23	491
	Soft clay-like chalk and occasional flints	13	474

Aldershot. *Waterworks. On the eastern side of the railway and the southern side of Boxhall's Lane, south of the town. Borings 3—6; 1884 and later.*

Made and communicated by MESSRS. LEGRAND and SUTCLIFF.

4 5 6

PAGE 22, LINE 10.

For "about a sixth of a mile, &c. . . . . side of railway," read "about a hundred yards west of the Railway Station, adjoining the goods yard."

~~22 feet in 6.~~

MESSRS. LEGRAND and SUTCLIFF make the figures of Borings 1 and 2 slightly different from those of the more detailed versions already published, and they enter Thanet Sand, the presence of which formation here is unlikely.

Aldershot. *Waterworks.* 1896 ?

Made and communicated by MESSRS. ISLER and Co.

Two boreholes of 8½ inches diameter, within 40 feet of each other, give precisely the same section.

Water-level 30½ feet down. Supply 10,000 gallons an hour.

		Thickness.	Depth.
[Drift.]	Dug well	—	8
	Ballast	10	18
Blue [London] clay		126	144
[Reading Beds, 60 feet.]	Mottled clay	25	169
	Claystone	2	171
	Sandstone	4	175
	Sand	8	183
	Black clay	9	192
	Mottled clay	4	196
	Stone	½	196½
	Green sand	6½	203
	Sandstone	1	204
Chalk and flints		52	256

At a visit to Aldershot in May, 1898, I learnt that there are 9 wells and borings at these works, without galleries, from which a supply of 1,100,000 gallons a day is taken.

Aldershot. *Waterworks. On the eastern side of the railway and the southern side of Boxhall's Lane, south of the town. Borings 3—6; 1884 and later.*

Made and communicated by MESSRS. LEGRAND and SUTCLIFF.

	3	4	5	6
Gravel and sand	14½ ..	13½ ..	14 ..	16½
London Clay	103½ ..	94½ ..	92 ..	105
Woolwich and Reading Beds	68 ..	72 ..	63 ..	68
Thanet Sand [?]	9 ..	7 ..	10 ..	9
To Chalk	195	187	179	198½
Chalk and flints	45	38	101	52½
	240	225	280	251

Water level 23 feet down in 3; 15 feet in 4; 14 feet in 5; 22 feet in 6.

MESSRS. LEGRAND and SUTCLIFF make the figures of Borings 1 and 2 slightly different from those of the more detailed versions already published, and they enter Thanet Sand, the presence of which formation here is unlikely.

Aldershot. *Waterworks.* 1896 ?

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Two boreholes of 8½ inches diameter, within 40 feet of each other, give precisely the same section.

Water-level 30½ feet down. Supply 10,000 gallons an hour.

		Thickness.	Depth.
[Drift.]	Dug well	— ..	8
	Ballast	10 ..	18
Blue [London] clay ..		126 ..	144
[Reading Beds, 60 feet.]	Mottled clay	25 ..	169
	Claystone	2 ..	171
	Sandstone	4 ..	175
	Sand	8 ..	183
	Black clay	9 ..	192
	Mottled clay	4 ..	196
	Stone	½ ..	196½
	Green sand	6½ ..	203
	Sandstone	1 ..	204
Chalk and flints ..		52 ..	256

At a visit to Aldershot in May, 1898, I learnt that there are 9 wells and borings at these works, without galleries, from which a supply of 1,100,000 gallons a day is taken.

Alverstoke. *Fort Elson.*

From information given by MAJOR LOVELL, R.E., to the late Mr. Bristow.

Well in the brickfield.

Sea-water broke in at the depth of 40 feet below high water mark, and the stopping-out of it gave much trouble.

		Thickness.	Depth.
[London Clay, ? part Reading Beds.]	London clay and hard black silt (with water)	112	112
	[Not accounted for] .. about	18	130
[Reading Beds.]	Red and white mottled clay ..	10	140
	Pale blue clay, slightly mottled with red	1	141
	Very sandy and ? laminated yellow clay	6	147
	Ditto, gradually getting more sandy ..	21	168
	Sand (or sand and clay), with water [thickness not stated; but this,? with other beds, must be]	62	230
Chalk with a good supply of water			

No. 3 Well. *Elson Fort.*

Shaft 40 feet, the rest bored.

Water came in sparingly the first week, in consequence of the pipes having much sand in them, but it came in more freely after the sand had been pumped away.

		Thickness. Ft. In.	Depth. Ft. In.
Mould		1 0	1 0
[London Clay.]	Yellow clay	6 0	7 0
	Hard blue clay	65 6	72 6
	Light-brown soft sandstone ..	1 2	73 8
	Hard blue clay	26 4	100 0
	Shelly rock	0 10	100 10
[Reading Beds.]	Dirty brown sand	4 0	164 10
	Dark blue sand	5 2	110 0

MR. C. E. HAWKINS suggests that the sand in the second section may belong to the basement-bed of the London Clay, and that the 18 feet not accounted for in the first section, or, at all events, some of it, is probably similar sand.

Alverstoke. *Foxbury, about 1½ miles S.S.W. of the Point. For Gosport Waterworks.* 1897.

Communicated by MR. P. SMITH, Engineer to the Waterworks Co.

28 feet above Ordnance Datum.

Shaft of 9 feet diameter, lined with brickwork for about 52 feet, and with iron cylinders from the depth of 24 feet 4 inches to 82 feet 7 inches. Then of 11 feet diameter, lined with

brickwork to the depth of 168 feet 4 inches. Headings, 6 feet high by 4 broad, with their bases at the depth of 214 feet, one to the N.E. for 523 feet, another to the S.W. for 564 feet.

		Thickness.	Depth.
Soil		1	1
[London Clay, 64 feet.]	Clay with race	8	9
	Stiff brown clay	7	16
	Stiff black clay, with a bed of stone, at 22 to 22½ feet down	33	49
	Clay, loam and water	16	65
[Reading Beds, 97 feet.]	Light-brown sand	5	70
	Grey sand, pyrites and peat	10	80
	Stamshaw [mottled] clay	78	158
	Clay, flints and very hard stone	6	164
Chalk		59¾	223¾

A full description of these works was given by Mr. E. T. Hildred, at the Meeting of the Association of Waterworks Engineers at Southampton, in 1898, from which we learn that the yield is at the rate of 1,000,000 gallons a day, that the chalk throughout was dense and hard, with but few flints, and that the joint-fissures are at irregular and long distances apart.

Bartley. *Oakhurst, close to Woodlands.*

Communicated by Mr. Blatch.

Over 60 feet in hard clay, yellowish at top, the rest blue.

Bishop's Waltham. *Oaklands. On the western side of the road, and just S. of Lockham Wood, over a mile N.E. of Botley Station.* 1894.

Made and communicated by Messrs. Duke and Ockenden.

Water stands 77 feet down.

		Thickness.	Depth.
[Drift.]	Gravel and loam	4	4
[Bracklesham Beds.]	Sand with clay, mixed	40	44
	Hard black clay	56	100
Black [Bagshot]	sand	14	114

Bournemouth. *A few hundred yards west of Moredown Church. Boring.* 1896. ?

Made and communicated by Messrs. Duke and Ockenden.

Abandoned. No water.

[Drift.]	Flints, sand and gravel	19	19
[Bagshot Beds.]	Running sand	15	34
	Clay	11	45
	Sand and hard rock	36	81

Brading. Harbour Farm. Isle of Wight.

Bored (and samples communicated to C. REID) by MR. THOS. PARSONS.

Very good supply rising within 6 inches of the surface. Pumping going on at the rate of 700 gallons an hour and could not get ahead of the water with the pumps in use (Jan. 5, 1891).

		Thickness.	Depth.
[Bembridge Marls.]	Mottled Clay (48, 50), [? part Alluvium]	51 ..	51
[Bembridge Limestone.]	White shelly limestone (51) ..	1 ..	52
	Loamy sand (52)	4 ..	56
	Sand (56, 61)	7½ ..	63½
	Calcareous grit (63½, 66, 71) ..	10½ ..	74
	Sand and sandstone with pyrite (74, 75, 76, 78, 89, 93)	21 ..	95
	Mottled clays (95, 98)	4 ..	99
	Calcareous sandstone, shelly ..	2 ..	101
	Mottled clays (101, 104, 106, 107, 108, 115, 116, 117, 120, 124) ..	24 ..	125
	Grey clay (125, 126)	3 ..	128
	Brown earthy limestone [? nodule] (128)	1 ..	129
	Light-grey shelly marl (129) ..	7 ..	136
	Grey clay (136)	4 ..	140
	Grey sand (140)	1 ..	141
	Grey clay (141)	4 ..	145
	Crushed ironstone or septarian nodule (145)	½ ..	145½
	Grey clay (145½, 146)	1½ ..	147
	Green and brown clays (147, 149, 150, 154, 155)	9 ..	156
[Osborne and Headon Beds.]	White limestone (156)	2½ ..	158½
	Green and brown clay (158½, 161, 162)	4½ ..	163
	Pinkish limestone (163)	1 ..	164
	Green clay (164)	1 ..	165
	Cream-coloured limestone (165) ..	2 ..	167
	Light-green sandy clay (167) ..	2 ..	169
	Green clay (169)	4 ..	173
	Red clay (173)	3 ..	176
	Green sandy marl (176)	½ ..	176½
	Calcareous sandstone or sandy limestone (176½)	1 ..	177½
	Mottled clays (177½, 179, 182, 184, 186, 187)	10½ ..	188
	Light-grey sandy marl	1 ..	189
	Green clay	2 ..	191
	Hard sandy and shelly limestone (? ½ seam)		191
	Greenish sandy clay (199) ..	11 ..	202
	Brown shelly marl (202)	3 ..	205
	Earthy limestone (205)	1 ..	206
	Green and brown clay (206) ..	½ ..	206½
	Greenish shelly marl (206½) ..	1 ..	207½
	Brown earthy limestone (207½) ..	½ ..	208

[Osborne and Headon Beds.]	Pale green sandy marl (208)	..	2	210
	Shell limestone (210)	..	11 (?)	221
	Green and brown shelly marls (221, 225, 226½, 227, 228, 229, 232, 233)	..	13	234
	Whitish clay (234)	..	1	235
	Fine sand with shells (235)	..	1	236
	Blackish sandy clay with shells (236)		1	237
	Green and brown clay (237)	..	5	242
	Concretionary shelly limestone (242)		1	243
	Calcareous sandstone (243)	..	½	243½
	Buff sand (243½)	..	2½	246
	Blackish purple clay (246)	..	1	247
	Mottled green and white sandy clay with shells (247)	..	2	249
	Black shelly clay (249, 250, 251)	..	3	252
	Mottled green and brown clay (252)	..	1	253
	Black shelly clay (253)	..	½	253½
	Mottled green and brown clay (253½)		4½	258
	Green clayey sand (258)	..	1½	259½
	Fine grey sand (259½)	..	1½	261
	Grey shelly sand (261)	..	8	269
	Greenish sandy clay, *Cytherea incrassata* (269)	..	1	270
	Blackish clay and shells (270)	..	4	274
	Sandy clay and shells (274, 276, 280)		8	282
	Stiff blue clay, full of shells (282, 284, 286, 287)	..	7	289
	Grey sandy clay, full of shells (289)	..	13	302
	Hard grey sandy limestone and shells (concretion, 302)			

Braishfield. *Three borings close together on the eastern side of the road, a little northward of Lead Bridge.*

Made and communicated by MR. J. GRACE.

	Beach Ho.	Oak Villa.	Just N.
London Clay, with some pebbles in the bottom part	35	33? ..	31
[Reading Beds] Mottled clay ..	100	100? ..	100
Chalk	167½	127 ..	259
Total	302½	260	390
Water rose above ground	10	7?	4

In the third no water was found in the bottom 50 feet, which was through hard chalk. The yield of this boring is 8 gallons a minute.

The interesting point in these borings is that the sand which crops out from beneath the London Clay just N. is absent. The place where the sand thins out is precisely marked by some other wells a little northward; thus at the cottage, on the western side of the road, just N.E. of Farburn Farm, sand was reached at the depth of 50 feet, whilst

60 feet southward there is none. Again, on the eastern side of the road, a little further north-eastward, a well, by the hedge on the northern side of the track, was also 50ft to sand; whilst in another, a few yards to the south, there was none. On the same side of the road, further northward, at the cottages, about 1000 feet from the Wheatsheaf, pebbles and sand were found at the depth of 36 feet. This information was also given by Mr. GRACE.

Bramshott. *Grayshott Down.* [*? Ludshott Common of new map.*] *Shaft in which Fullers' earth was found.*

Communicated by MR. J. M. PEAKE, who got the section from the well-sinker in 1890. Well made some years before.

		Thickness.	Depth.
[?, Hythe Beds, (Lower Greensand).]	White sand	3	3
	Strong loam	15	18
	White sand rock	40	58
	Veins of red sand	4	62
	Sand rock	1½	63½
	Ragged rock	7	70½
	Sharp rocky sand or sandstone	5	75½
	Hard solid sand rock	7	82½
	Fullers' earth	2	84½
	Green rock	20	104½
	Green sand (to water)	6	110½

Dibden. *Windmill House. A little south-westward of Langdown Windmill and southward of Baker's Farm.* 1892.

Over 100 feet above Ordnance Datum (? 105 or more.)

Made and communicated by MESSRS. A. WILLIAMS AND CO. (and from specimens).

Shaft 13 feet, the rest bored. Unsuccessful.

Before getting through the rock, at 445 feet, the water-level was 172 feet down. Later on it rose slightly, to 160 and then to 150.

		Thickness.	Depth.
[Drift.]	Gravel	19	19
	Gravel and sand	5	24
[Barton Sand, 72 feet.]	Sand (at 44 feet, fine buff sand, with some bits of greenish grey sand). Water at 44 feet	33	57
	Running sand	5	62
	Blue sand. A little water, exhausted by 4 hours' pumping at the rate of 300 gallons an hour (brackish and of bad smell)	34	96

[Barton Clay, 349 feet.]	Blue sandy clay	10 ..	106
	Blue clay (some greenish grey clay, with bits of shell. Stiff grey clay, with bits of shell at 138 feet. The like at 154, but a trifle sandy) ..	81 ..	187
	Sandy clay	21 ..	208
	Black sand (specimen of greenish sandy clay or clayey sand)	6 ..	214
	Green loamy clay and black sand ..	12 ..	226
	Dark green sand	2 ..	228
	Dark green loamy clay (At 347 grey clay, with a few small bits of shell. At 350 grey and slightly greenish-grey clay and sandy clay, At 390-400 grey slightly sandy clay, with broken shells and some green sand. At 444 brownish-grey clay with bits of shells. Hard sandstone at the bottom 5 feet)	217 ..	445
[? Barton or Bracklesham Beds.]	Light-green loamy clay (greenish sand slightly clayey, with broken shell, top 10 feet)	25 ..	470
	Light green loamy clay with rock ..	4 ..	474
	Dark green loamy clay	26 ..	500

There is an older well at Langdown Mill, about 45 feet deep, with the water-level about 39 feet down, which was the same as in the above boring in June, 1891. This water is also slightly brackish, and with a disagreeable smell and taste.

East Dean. *Holbury Mill. In the garden between the buildings and the road.*

Probably about 110 feet above Ordnance Datum.

Made and communicated by MR. JAMES GRACE.

Bored throughout.

	Thickness.	Depth.
London Clay	43 ..	43
Clay [Reading Beds]	77 ..	120
Chalk ..	60 ..	180

I was told that oyster-shells were found at the base of the Reading Beds.

Fareham. *Fort Fareham. Five wells.*

From information at the Royal Engineers' Office, Milldam, Portsmouth.

All the water from a bed of greenish sand [at bottom]. Chalk not touched.

1. 200 feet deep. The sand 16 feet thick
2. 188½ „ „ 6½ „
3. 210 „ „ 8 „
4. 220 „ „ 7 „
Carried 2 feet into red clay beneath the sand.
5. 229 feet deep. The sand 5½ feet thick
Carried 1½ feet into red clay beneath the sand.

It looks as if the sand were either the bottom of the London Clay or the top of the Reading Beds, the red clay being probably red mottled plastic clay.

Fareham. *Lower Quay. A few feet above high water.*

To chalk .. 141 } 441 feet.
Chalk .. 300 }

Godshill, Isle of Wight. *Week's Farm.* 1881.

About 446 feet above Ordnance Datum.

Made and communicated by MESSRS. LEGRAND and SUTCLIFF.

Water level 85½ feet down.

		Thickness. Ft. In	Depth. Ft. In.
Dug well [the rest bored]. Top ground		— ..	2 0
[Upper Greensand.]	Rag stone ..	8 6 ..	10 6
	Free stone	14 10 ..	25 4
	Yellow sand	14 0 ..	39 4
	Green sand	34 0 ..	73 4
	Hard stone	7 4 ..	80 8
	Green sand	2 6 ..	83 2
	Sandstone	2 10 ..	86 0
	Stone and sand	6 0 ..	92 0
	Blue shale and stone	7 0 ..	99 6
[Gault.] Black shale ..		31 0 ..	130 0

Another account makes the depth 7 inches more, by additions of an inch and of six inches to the 3rd and 2nd beds from the base.

Gosport. *Blockhouse Fort.* 1848.

Information from the Contractor's notes, made when doing the work, communicated with other notes by MR. J. CARRUTHERS (then of Haslar).

About 13 feet above Ordnance Datum.

Shaft 19 feet, the rest bored.

Good water found in the bottom sand.

In 1884 the bore was sounded to 247 feet and cleaned down to 287, but again filled up to 281.

		Thickness.	Depth.
[Shore Deposits.]	Shingle	40	40
	Brown and greenish-blue sand and oyster-shells	9	49
	Fine shingle	21	70
[Bracklesham Beds.]	Sand and alternate layers of clay and gravel (in the upper part); and blue clay and green sand (in the lower and main part)	46	116
	Stiff blue clay	22	138
	Blackish-green sand, with slightly brackish water	20	158
	Stiff blue clay	66	224
	Clay and sand	52	276
[? Bracklesham or Bagshot Beds.]	Clean sand	24	300

The account given by MAJOR-GEN. PORTLOCK, in 1850 (Journ. Geol. Soc., Dublin, vol. iv., p. 247), differs much from the above.

Gosport. *Gosport Brewery Co., Haslar Street.* 1896.

Boring made and communicated by MESSRS. LEGRAND and SUTCLIFF.

Water-level, 17½ feet down.

		Thickness.	Depth.
Soil		2	2
[River Drift]	Gravel and sand.	7	9
[? All Brackleham Beds]	Brown loamy clay	9½	18½
	Blue sandy clay	4½	23
	Sand and clay	50	73
	Running sand	20	93
	Sandy clay	17	110
	Sandy clay with stones	26	136
	Sandy clay	27	163
	Sand, pebbles and lignite	17	180
	Sand	40	220
	Live sand with peat and wood [lignite]	22	242
	Clay	1	243

Havant. *Brewery. On the northern side of the main road, a little east of Hermitage Bridge.* 1878.

Information (in 1896) from Mr. A. SUTTON, the former owner, from memory of samples that he had taken and kept for some time.

Shaft 20 feet, the rest bored. Surface water kept out by iron cylinders. Boring of 8 inches diameter to 60 feet down, when the work was stopped by accident. Boring continued of 4 inches diameter.

		Thickness.	Depth.
[River Drift]	Gravel	4	4
	Marl	5	9
[Reading Beds, 91 feet]	Red Stamshaw clay [mottled]	30	39
	Black clay	5	44
	Mottled red and yellow clay	10	54
	Blue clay	46	100

		Thickness.	Depth.
[Upper Chalk]	Chalk	40	140
	Harder chalk with water	10	150

MESSRS. DUKE and OCKENDEN, who did the work below 60 feet, give the following account, but say that they cannot find an exact record. Of course, they are not answerable for the top 60 feet.

Sand and ballast, with water	10	10
Clay beds	115	125
Running sand	9	134
Chalk	11	145

This version would bring in London Clay, which is, I think, unlikely to occur, and Mr. Sutton notes nothing of the sort.

Havant. 103 *West Street, southern side, a little west of the Union Workhouse, and near the Portsmouth Waterworks.* 1883.

Made and communicated by MESSRS. LEGRAND and SUTCLIFF.

Water-level 1½ feet down.

[River Drift]	Gravel and marl	20	50 feet
	Soft chalk and flints	30	

Havant. *Belgravia Dairy, on the southern side of the road, a little south-eastward of the railway station.* 1896.

Made and communicated by MESSRS. DUKE and OCKENDEN (and from specimens).

Water rose to within 5 feet of the surface. Tested with a surface-pump at 348 feet and the yield found to be 2,700 gallons an hour. At 373 feet it was 3,000, till the level was lowered 30 feet.

		Thickness.	Depth.
[River Drift?]	Ballast and stones	8	8
	Sand	9	17
[London Clay, ? 118 feet.]	Sand and clay	8	25
	Clay with a few stones (specimens of brown sandy clay at 25 and of brown stone at 28 feet)	15	40
	Dark blue clay (specimens of dark grey and brown clay at 75, 100, and 110 feet, the last browner)	74	114
	Dark blue clay, rather harder (specimen of dark brown clay at 120 feet)	13	127
	Clay, gravel and sand (large flint pebble at 128, septaria at 129, and dark brown rather sandy clay at 130 feet)	5	132
	Sand and gravel (specimen of brown fine clayey sand at 135 feet)	3	135

		Thickness.	Depth.
[Reading Beds, 109 feet, or more.]	Sand and clay (specimen of gray and red mottled clay at 141 feet) ..	7 ..	142
	Coloured [mottled] clay (specimens of grey and red, red and grey mottled clays at 145 and 150, and of brown and grey streaked sandy clays at 152, 156, 159, and 161 feet, middle 2 light coloured, the rest more sandy)	19 ..	161
	Clay with a little sand (specimen of light-brown sandy clay or clayey sand at 163, of light-brown and grey streaked sandy clay at 165 and 170, of brown sandy clay at 174, of light-grey sandy clay at 178, of brown-grey clay at 180, of brown-grey sandy clay at 187, of grey sandy clay at 188 (the last four with lignite, mostly in patches or streaks). Some loose specimens of bits of stone, with pyrites, "appear to come from the black formation, 185 to 187 feet," and of light-grey sandy clay with blackish streaks at 190 feet)	33 ..	194
	Stiff variegated clay (many specimens of variously coloured clays, mostly streaked or mottled, down to 240 feet)	57 ..	251
[Reading Beds and Chalk.]	Clay, chalk and flints ..	13 ..	264
Chalk and flints	.. ..	109 ..	373

An older well is 15 feet deep, in gravel, with running sand at the base.

Hayling Island. *About half a mile N.E. of South Hayling Station.* 1896.

Made and communicated by MESSRS. DUKE and OCKENDEN.

? No water.

		Thickness.	Depth.
Sand ballast, with water		57 ..	57
[London Clay, 221 feet.]	London clay	97 ..	154
	Running clay and sand	22 ..	176
	London clay	102 ..	278
Reading clay		120 ..	398
[? All Upper Chalk.]	Brown chalk, without flints. No water	62 ..	460
	White chalk, with layers of black flint, from 3 to 6 inches thick, about 10 feet apart. At 640 the thickest bed of flint, whence about 1 gallon of water comes in a minute .	200 ..	660
	Very hard brown chalk, without flints. No water	30 ..	690
	Very hard limestone-rock, the last four feet still harder	10 ..	700

Hayling Island. *Copse Cottage, ? about a mile east of Hayling Station.*

Made and communicated by MESSRS. DUKE and OCKENDEN. No water.

Reading clay ..	42	}	218
Chalk and layers of hard flints	176	}	

Hayling Island. *Lawn Cottage, about half a mile south of North Hayling Station.*

Made and communicated by MESSRS. DUKE and OCKENDEN. Water stands 10 feet down.

		Thickness.	Depth.
[Reading Beds]	Reading bed clay	.. 70	.. 70
	Rock [flints ?]	.. 12	.. 82
Chalk and flints		.. 96	.. 178

Hayling Island. *Dr. Townshend's, southward of South Hayling Railway Station.*

Made and communicated by MESSRS. DUKE and OCKENDEN (to Mr. C. REID). No water got.

		Thickness.	Depth.
Shingle		.. 16	.. 16
[Bracklesham Beds.]	Sand and clay ..	.. 15	.. 31
	Blue clay, very hard ..	.. 25	.. 56
[Bagshot Beds ?]	Running sand	.. 23	.. 79
	Clay	.. 1	.. 80
	Running sand.. ..	.. 2	.. 82
	Gravel and sand mixed with clay	.. 12	.. 94
[London Clay.]	Sandy clay	.. 51	.. 145
	Blue clay, very hard ..	.. 34	.. 179
	Brown clay, very hard ..	.. 8	.. 187
	Blue clay, very hard ..	.. 21	.. 208
	Green sandy clay ..	.. 4	.. 212

There is much difficulty in classifying the beds.

Headley Park. *Three borings. The first is the one alluded to in the former Paper (Papers, Hants F.C., No. iii., p. 31).*

Made and communicated by MESSRS. LEGRAND and SUTCLIFF. (Remarks in brackets, in the first, from an account given by MR. E. E. BERRY). With some additional information from SIR R. S. WRIGHT.

1. A boring of 5 inches diameter. (About 30 feet S.S.E. of Park Mill; about 1¼ miles N. of Headley Church. About 200 feet above Ordnance Datum). 1888. Water overflowed.

		Thickness.	Depth.
Top ground..	.. ..	1 ..	1
[Folkestone Beds.]	Yellow loamy sandstone ..	2 ..	3
	Grey sand	2 ..	5
	Peat (peaty sand)	3 ..	8
[Sandgate Beds.]	Very green sand, and a little clay ..	5 ..	13
	Blue sandy clay (tenacious, watertight), and layers of sandstone (a layer, very hard, green, about 3 inches thick) ..	21 ..	34
[? Hythe Beds.]	(Loose blowing) grey sand.. ..	16 ..	50

2. A boring of 16 inches diameter, 10 feet S.S.E. of No. 1. 1889. Water-level a foot down, June.

		Thickness. Ft. In.	Depth. Ft. In.
Top ground	.. ..	1 0 ..	1 0
[? Drift.]	Brown sand	1 0 ..	2 0
	Gravel	3 0 ..	5 0
[Folkestone Beds.]	Brown and green sand, mixed ..	5 0 ..	10 0
[Sandgate Beds.]	Dark clay and sand	6 0 ..	16 0
	Sandstone and clay	8 0 ..	24 0
	Sandstone rock	2 2 ..	26 2
	Green sand and stone ..	11 10 ..	38 0
	Green sand, with water ..	7 0 ..	45 0
[? Hythe Beds.]	Hard rock..	— 10 ..	45 10

3. A boring of 16 inches diameter, about 40 feet N.E. of No. 1. 1889. Water-level a foot down, August.

		Thickness.	Depth.
[? Drift.]	Peat and sand.. ..	5 ..	5
	Sand, clay and stones ..	13 ..	18
[Folkestone Beds.]	Hard dead sand ..	2 ..	20
	Sandstone rock ..	3 ..	23
	Grey sand and stone ..	$7\frac{1}{2}$ ..	$30\frac{1}{2}$
	Green sand and water ..	$3\frac{1}{2}$ ..	34
	Hard green sand and water	$5\frac{1}{8}$ ..	$39\frac{1}{8}$
	Hard sandstone rock ..	$3\frac{7}{8}$ ..	43
	Blowing sand, to rock ..	3 ..	46

No. 1 is now stopped. No. 2 is in constant use, and in 7 or 8 years (always running free) has varied very slightly in yield, giving 50 gallons in about 52 or 53 seconds, with a nearly constant temperature of about 51°. No. 3 runs wholly to waste, and seems to yield about the same as No. 2. (1895).

Lockerley. *The Mill. On the north side of the stream, for the supply of Lockerley Hall.*

About 95 feet above Ordnance Datum.

Information from MR. DALGETY (from memory).

Shaft about 50 feet. Boring about 150 feet, some way into the Chalk.

Water overflows, and is pumped down 12 feet, beyond which it has not been lowered.

Lyndhurst.

Boring, communicated by Messrs. A. Williams and Co. Water-level 6 feet down. Yield, 900 gallons an hour.

		Thickness.	Depth.
[Barton Sand (Upper Bagshot of old map).]	Live yellow sand	21	21
	Dead sand	4	25
	Live sand	4	29
	Blue dead sand	22	51
	Dead sand and shells	38	89
	Dead sand	7	96
[Barton Clay.]	Sandy blue clay	5	101
	Brown clay and shells	4	105
	Blue clay and shells	14	119
	Blue clay and sandstone	6	125

Milton, near Lymington. Waterworks, close to the Railway Station. 1892.

Made and communicated by Messrs. Legrand and Sutcliffe. Notes in square brackets from specimens examined by Clement Reid.

		Thickness. Ft.	In.	Depth. Ft.	In.
[Headon Beds.]	Well (undescribed) the rest bored	—		24	0
	Bricks and rubbish at the bottom of the well	2	0	26	0
	Clay and shells [*Cerithium, Cyrena*]	2	0	28	0
	Light-green sandy clay [not sandy]	5	0	33	0
	Grey sand and brown clay	10	0	43	0
	Dark grey sand and shells	11	0	54	0
	Clay [light-green]	6	0	60	0
	Mottled clay and sand	6	0	66	0
	Blue clay	17	6	83	6
	Stone	0	3	83	9
	Blue clay	3	9	87	6
	Sandstone	2	0	89	6
	Blowing sand	18	6	108	0
	Light-blue clay [greenish with whitish concretions]	12	0	120	0
	Wood and "stuff"	1	6	121	6
[Barton Sand.]	[Mead End Bed ?] Sand, shells and mundic (blackish)	2	6	124	0
	Dead grey sand	19	0	143	0
	[Becton Bunny Bed ?] Blue clay and shells	9	0	152	0
	Blue clay	6	0	158	0
	Grey sandy clay	6	0	164	0
	Live grey sand	28	0	192	0
	[Chama Beds ? &c.] Grey clay [soft]	34	6	226	6
[Barton Clay.]	Blue clay	2	8	229	2
	Stone and shells [septaria ?]	1	2	230	4
	Blue clay and shells [*Corbula* at 230ft. 4in. and 250ft.]	19	8	250	0

Newport, Isle of Wight. *West Medina Cement Works.*
Communicated by Mr. C. Reid.

Section published 1889, in Geological Survey Memoir, pp. 306-308, to 450½ feet deep, the formations passed through being as follows:—

		Thickness	Depth
Hamstead and Bembridge Beds		173	173
Bembridge Limestone		6	179
Osborne Beds		113	292
Upper Headon Beds		64¼	356¼
Middle Headon Beds		94¼	450½
[Middle Headon Beds.]	Brown sandy loam	2¼	452¾
	White sandy marl	¼	453
	Brown Shelly clay with *Nucula*, *Buccinum? Nerita*, *Polyzoa*, *&c.*	4	457
	Brown clay, more sandy	1	458
	Brown clayey sand	1	459
	Green shelly sand	2	461
	Green clay	½	461½
	Mottled green and brown clay	½	462
	Greenish clayey sand	¼	462¼
	Rather coarse green sand	7¾	470
	Purple or blackish sandy clay	2½	472½
	Green unctuous clay	2	474½
	Green shelly clay, with *Cyrena*, *Neritina*, *&c.*	½	475
[Lower Headon?]	Sand with water		

Petersfield. *Boring* 100 *yards S. of the Railway Station (and ?* 30 *feet east of the railway).*

Recorded by Mr. W. Topley.

Water at 25 feet (from the top or in the sand?)

		Thickness	Depth.
Soil		1	1
Loamy gravel [? broken up carstone]		7	8
[Folkestone Beds]. Sand with a hard bed [? carstone], 6 inches thick (? at the base)		40	48
[Sandgate Beds?]	Clay	4	52
	Sand, to clay	6	58

Petersfield. *Borough Farm Brewery, from* 300 *to* 400 *yards S. of the Railway Station, and on the eastern side of the railway.*

Communicated by Mr. T. Amey.

Water at 37 feet, good for brewing. Sand chokes the tubes. Water from the lowest sand is impure, but does for cooling.

		Thickness.	Depth.
Shaft, then a tube driven		—	20
[Folkestone Beds]	Rich loam	2	22
	Mixed clay, sand and gravel	7	29
	Clean sand; then thin course of running sand	17	46
	Clean sand with some very green grains	23	69
[Sandgate Beds, 27 feet].	Blue clay	4½	73½
	Sand and small [fine] gravel [? broken up stone]	7	80½
	Hard blue clay	25½	106

Petersfield. *The Jolly Sailors. The Causeway, on the Portsmouth road, about three quarters of a mile S.W. of the town.*

Bored and communicated by MESSRS. DUKE and OCKENDEN.

Water rose above the ground, but sand choked the bore-hole.

		Thickness.	Depth.
Old well (the rest bored)		—	58½
[Gault.]	Black clay	37½	96
	Dark green sand	21	117
[Folkestone Beds.]	Soft sand-rock	7	124
	Light [coloured] running sand	78	202
	Soft sand-rock	6	208
	Light-coloured running sand	16	224

Portsmouth. *Catherine Brewery. Nearly two thirds of a mile north-eastward of the Harbour Railway Station.* 1886 ?

Communicated by MESSRS. JEWELL, who made the boring themselves.

About 20 feet above Ordnance Datum.

Water-level 10 feet down, when there is no pumping (to 1896). About 27,000 gallons a week drawn, lowering the water 20 feet.

		Thickness.	Depth.
[River Drift.]	Gravel and Sand [? Bagshot]	40	40
[London Clay, 320 feet.]	Blue clay	25	65
	Sand	5	70
	Blue clay, with occasional layers of septaria	200	270
	Sand	30	300
	Blue clay	60	360
[Reading Beds, 115 feet.]	Plastic clay	105	465
	Stone [flints ?]	10	475
Chalk		230	705

Portsmouth. *Lion Brewery, Landport. On the western side of the London Road, just north of Kingston Crescent.* 1886.

Made and communicated by MESSRS. ISLER and Co.

A tube-well of 6 inches diameter.

No supply from the Chalk. The tubes were withdrawn into the Reading Beds.

		Thickness. Ft.	In.	Depth. Ft.	In.
[Drift and London Clay.]	Made ground and clay ..	53	0	53	0
	Mixed clay	3	0	56	0
	Blue clay	41	0	97	0
	[Basement bed.] Green sand and shells ..	1	0	98	0
	[Basement bed.] Sandstone. Water rose to 58 feet down	—	6	98	6
[Reading Beds, 106½ feet.]	Red mottled clay. Spring at 104 feet, which overflowed into well	11	6	110	0
	Yellow mottled clay	19	0	129	0
	Sandy clay	12	0	141	0
	Sand	11	0	152	0
	Sand and mundic [pyrites] ..	7	0	159	0
	Sandstone	3	0	162	0
	Light-blue clay	4	0	166	0
	Brown sandy clay	5	0	171	0
	Blue mottled clay	4	0	175	0
	Red mottled clay	5	0	180	0
	Red bastard clay	25	0	205	0
[Upper Chalk, 227½ feet.]	Flints	3	6	208	6
	Hard chalk and flints ..	1	6	210	0
	Hard chalk	2	0	212	0
	Hard stone	1	0	213	0
	Chalk and flints	88	6	301	6
	Hard chalk	7	0	308	6
	Chalk and flints	19	6	328	0
	Hard chalk and flints ..	15	6	343	6
	Chalk and flints	47	6	391	0
	Chalk rock	1	4	392	4
	Chalk	1	0	393	4
	Chalk and flints, with 6 inches of flint at 401 to 401½ feet ..	39	2	432	6

Sherfield. *Longbridge Mill.* 1891.

Communicated by MR. C. LETHBRIDGE.

Dug 10ft., the rest bored.

Water, from the depth of 297 feet, overflowed, at the rate of about 7,600 gallons in 24 hours. (Dec., 1890).

		Thickness. Ft.	In.	Depth. Ft.	In.
Gravelly		55	0	5	0
[London Clay].	Sandy clay, with 4 or 5 thin beds of white hard stuff, something like chalk, from 3 to 8 inches thick [septaria]	160	0	170	0
	Rock. Saline spring at the base, yielding, at the surface 1,728 gallons in 24 hours ..	1	10	171	10
	Black stiff clay	91	2	263	0

		Thickness. Ft.	In.	Depth. Ft.	In.
[? London Clay or Reading Beds]	Red clay [? brown]	25	0	288	0
[? Basement-bed of London Clay, or Reading Beds]	Greensand	7	0	295	0
	Hard stone	2	0	297	0
	Sandstone. Water increased suddenly and enormously ..	4	6	301	6
[? Reading Beds]	Clay. Bored into for holding the silt, and lost the water. Filled in with rammed clay, and the water recovered.	4	0	305	6
	Bed which took away the water [presumably sand].				

It is difficult to make out the division between the London Clay and the Reading Beds.

Southampton. *Messrs. Forder's Brewery, between High Street and French Street.* 1895.

Made and communicated by MESSRS. ISLER and Co.

Supply 1000 gallons an hour. Water overflows.

		Thickness.	Depth.
Well (the rest bored) ..	— ..	40	
[River] Gravel	2 ..	42	
[Bracklesham Beds, 131 feet] Green sand ..	16 ..	58	
Green sand and marl	3 ..	61	
Green sand ..	7 ..	68	
Green sand and clay	5 ..	73	
Green sand and shells	6 ..	79	
Clay and sand	6 ..	85	
Clay ..	9 ..	94	
Brown clay	79 ..	173	
Brown [Bagshot] sands	9 ..	182	

Southampton. *Mr. Hayward's Nursery, Shirley Road, eastern side, northward of the Board School.* 1895?

Information from MR. H. G. VACHER.

No spring found, only soakage water, easily pumped dry in summer.

Gravel	about	6	30
[Bracklesham Beds]. Blackish sandy clay		24	

Southampton. *Northam Lead Works (Messrs. James and Rosewall). At the corner of Clarence Street and George Street, northward of the Northam Board School.* 1896.

About 10 or 12 feet above Ordnance Datum.

Bored and communicated by MESSRS. LEGRAND and SUTCLIFF, and from a few specimens, the account with which differed somewhat from the following:—

Water rose to 7½ feet above the ground.

		Thickness.		Depth.
[River Drift.]	Dug well [brickhearth and gravel. Mr. James says clay for about 10 feet] ..	—	..	17
	Gravel, said to have been put in the well	3	..	20
	Sandy gravel. Specimen shows a mixture of grey sand and gravel ..	2½	..	22½
[Bracklesham Beds.]	Loamy sand (specimen grey loam) ..	1	..	23½
	Grey sand [? clayey]	2½	..	26
[Bagshot Sand.]	Live grey sand (specimen sharp sand)	34	..	60
	Live grey sand and pebbles (specimen sharp sand, with black flint pebbles)	6½	..	66½
[Bagshot Sand, or London Clay.]	Live grey sand (specimen, apparently from this, grey loam) ..	27½	..	94
[London Clay. All the specimens dried hard.]	Dark grey loamy sand (specimen loam)	13	..	107
	Sandy clay (specimen brownish-grey)	4	..	111
	Hard blue sandy clay	5	..	116
	Hard sandy clay	13	..	129
	Sandy clay and shells (specimens brownish-grey, shells broken) ..	5	..	134
	Sandy clay	22	..	156
	Sandstone rock (specimen septarian limestone)	1	..	157
	Sandy clay (specimen brownish-grey)	8½	..	165½
	Rock (specimen septarian limestone) ..	3	..	168½
	Sandy clay	20½	..	189
	Stone [septaria]	1½	..	190½
	Sandy clay	15½	..	206

Southampton. *Victoria Brewery, Commercial Road (Northern side).*

About 27 feet above Ordnance Datum, at the entrance.

Two old wells, communicated by MR. BARLOW.

A large one in the field westward of the nothern end of the brewery. 1871. Shaft 28 feet, bored to 113.

Clay with occasional sand. 4 inches of hard smut at 90 feet.

A smaller well, southward, close to the western side of the brewery. Shaft 42 feet, bore-hole 73 more. Water-level 14 feet down.

White sand touched, whence water rose quickly.

Trial boring, made and communicated by MESSRS. LEGRAND and SUTCLIFF. (Notes in these brackets from specimens). 1896.

Water rose 8 feet above the ground. MR. BARLOW reports

that a supply at the rate of 12 gallons a minute was got at 287 feet.

	Thickness.	Depth.
Made ground [stony soil]	6	6
Red mottled sandy clay (brown and green-gray)	5	11
Green mottled sandy clay (grey)	4	15
Sandy clay (grey)	15	30
Sand and clay (grey)	60	90
Clay with little sand (grey)	11	101
Live sand, with clay (fine grey sand)	11½	112½
Clay and sand (grey sandy clay)	21½	134
Clay and stones (pyrites and small modules)	1	135
Clay and sand (greenish-grey clayey sand and sandy clay)	7	142
Very fine sand and clay (dark brownish-grey clayey sand, damp)	7	149
Coarse sand (grey sharp sand, with lumps of clay and bits of lignite)	8	157
Brown clay, little sand and peat (sand of the colour of coffee-grounds when damp)	17	174
Brown clay and black pebbles (flint)	½	174½
Greenish clay and sand	18½	193
Greenish clay and shells	3	196
Greenish clay and sand	15	211
Greenish clay, (black flint) pebbles and shells	2	213
Greenish sand and clay (In the top 2 feet, a bit of fossil wood, and some small patches of green earth. The green colour is throughout, not from grains of glauconite).	17	230
Brown and green clay, sand and shells	2	232
Brown clay and sand, with 4 inches of claystone at top and 2 at base	5½	237½
Brown clay, sand and shells	12½	250
Rock	2	252
Clay, sand and shells	11	263
Rock	1⅜	264⅜
Clay, sand and shells, with 4 inches of rock 10 feet down	15⅝	280
Clay and sand	6	286
Greenish sand and pebbles	9	295

Steep. *Under Stoner Hill. Trial-work for the supply of Petersfield; abandoned. ? about* 1886.

About 380 feet above Ordnance Datum.

Communicated by Mr. W. B. KINSEY.

Shaft of 60 feet, through Upper Greensand, then a boring for 10 feet. Heading 45 feet long, a little W. of N. For 26 feet the rock very close, and with very little water; beyond this more fissured and with a little water; fissures at right angles. Mr. C. E. HAWKINS thinks that the boring must be in the marl, forming the base of the Upper Greensand.

Yield 1,000 gallons a day.

Titchfield. Dr. Hoare's Brewery, at the western end of the village.

Made and communicated by Mr. W. Hill.

Nearly 23½ feet above Ordnance Datum.

Plenty of water, from above the London Clay. Good at first, but got unsatisfactory, probably from access of top water.

		Thickness.	Depth.
Shaft, the rest bored. Bore-pipe carried up more than half-way		—	20
[? Bracklesham Beds.]	Blue loamy sand	35	55
	Blue clay	5	60
[? Bagshot Sand.]	Grey sand and black [flint] pebbles	15	75
[London Clay, 95 feet.]	Blue clay, with claystone from 98 to 99	49	124
	Blue clay, with black [flint] pebbles	2	126
	Blue clay, with 8 inches of very hard sandy clay at 135, and a little sandy at 140	44	170

The Bagshot Sand seems to be unusually thin, and ought to be twice as thick. The layer of flint pebbles in the London Clay agrees with what was seen in the railway-cutting between Titchfield and Fareham, where two such layers were seen, separated by a few feet of clay.

Titchfield. Stubbington House.

Made and commnnicated by Mr. W. Hill.

Cylinders 52½ feet, the rest bored.

Nearly 40 feet above Ordnance Datum.

Good supply and of good quality.

		Thickness.	Depth.
Mould		2	2
[Drift, 8 feet.]	Brickearth	5	7
	Gravel	3	10
[Bracklesham Beds, 163½ feet]	Ye low sand	3	13
	Peat [lignite?]	1½	14½
	Blue sandy clay	25½	40
	Sand	1	41
	Sand and clay	8	49
	Hard clay	1½	50½
	Sandy clay	19½	70
	Dark sand	30	100
	Sand and clay	20	120
	Sandy clay	13	133
	Hard blue clay	17	150
	Sandy clay	4	154
	Hard clay with shells, the bottom 2 feet, with black [flint] pebbles	19½	173½
Bagshot Sand, 25½ feet	Sand and clay	6½	180
	Sand	14	194
	Undescribed	1	195
	Fine sand, with water	4	199

		Thickness.	Depth.
London Clay, 166 feet	Hard blue clay. A little sandy at top. A foot of black [flint] pebbles at 225. A little sandy next below. With shells from 250 to 255. 8 inches of stone [septaria] at 272. 2 feet of black [flint] pebbles at the bottom	88 ..	287
	Sandy clay	10 ..	297
	Hard clay, with small shells. Black [flint] pebbles in the top 5 feet ..	68 ..	365

Upham. Wintershill House. 1891.

Specimens and information from MESSRS. DUKE and OCKENDEN. Old well, and new boring.

		Thickness.	Depth.
London Clay.	Specimens of brownish-grey sandy clay and clay, from 73 to 172 feet, with carbonaceous matter at 150 and bit of pyrites at 170; buff calcareous earth at 181; grey clay at 186	190 ..	190
[Reading Beds.]	Mottled clays of various colours and tints (purplish, grey, brown, red, crimson, puce, maroon). Specimens at 196, 197, 201, 202, 207, 211, 212, 215, 216, 220 (last 6 a trifle sandy), 223, 226, 230, 236 (these 4 rather pure clays), 242, 243 (pale-grey clayey sand, compacted), 250, 260 ..	74 ? ..	264
[Reading Beds with admixture of Chalk.]	Pale greenish-grey slightly sandy clay, with whitish earth in part (which, with the clay near is calcareous), at 264	1 ? ..	265
	Brownish and grey clay, with red spots, bits of chalk (?) and of flint; calcareous at 265		
Chalk.	Specimens at 269, 274, 278		
[Mixture of Chalk with a little earth.]	Cream-coloured calcareous earth. Specimen at 285		
	Light-brownish clay, calcareous, ? with wee bits of chalk; specimens at 286, 287, the latter more chalky ..		.. 309 ?
	Impure chalk, or chalk mixed with a little earth; specimens at 290, 295, 300, 305		
[Mixture of clay with chalk.]	Buff calcareous clay, with very small bits of chalk; and brown and buff calcareous clay, with bits of chalk; specimens at 309		

The lower part of the section is very difficult to understand, there being no likeness to any of the older Tertiary beds and the mixture with chalk being unique.

Wellow. Embley Park.

Made and communicated by Mr. J. Grace.

Water, at 180 feet, rose 8 feet above the ground.

		Thickness.	Depth.
Soil		2	2
Gravel		6	8
[? Bagshot]	Loamy sand	14	22
[London Clay.]	London Clay	158	180
	Pebbles [? Basement Bed]	1	181
[? Reading Beds.]	Sand with water	46	227

If the above interpretation of the beds is right, the London Clay is thinner than one would have expected.

Wickham. Cold Harbour, about ⅞ of a mile W.N.W. of the Church. 1895.

Made and communicated by Mr Conway, of Wickham (through Mr. N. C. H. Nisbett).

		Thickness.	Depth.
[Bracklesham Beds ?].	Old well. Sandy bottom	—	90
	Sandy clay	20	110
	Sand, as above	3	113
	Red (iron) clay	2	115
	Blue clay with sandy veins	2	117
	Clay	8	125
	Clay, but more loamy and with large pebbles (2 or 3 inches diameter)	5	130
	Clay, as above, but browner, and with iron pyrites	27	157
	Clay, as above, but with small pebbles	8	165
	Rather darker, with pebbles and sand	2	167
	Clay, like the 27 feet bed, above	3	170
Black [Bagshot]	Sand, with irregular angular [?] pebbles.		
Water		1	171